



CONNECTIONS

The Great Global Convergence

1400–1800

General Editor

Ross E. Dunn

*Professor Emeritus of History
San Diego State University*

*Associate Director
National Center for History in the Schools*

The units in this book are drawn from the Landscape Teaching Units of World History for Us All, a web-based model curriculum for world history (<http://worldhistoryforusall.sdsu.edu>). The website is continuously evolving with new content being added. If a topic is not included here, please visit the website to see if it is currently available.

A Companion to World History for Us All
A Model Curriculum for World History
<http://worldhistoryforusall.sdsu.edu>

Project Coordinator: Dr. Aaron Willis
Editorial Assistants: Rosemary McGuinness, Emily Rose Oachs
Book Layout: Linda Deverich, Mark Gutierrez, Kristopher Morris
Cover Design: Mark Gutierrez

Social Studies School Service
10200 Jefferson Boulevard, P.O. Box 802
Culver City, CA 90232-0802
United States of America

(310) 839-2436
(800) 421-4246

Fax: (800) 944-5432
Fax: (310) 839-2249

www.socialstudies.com
access@socialstudies.com

©2014 The Regents of the University of California.
All Rights Reserved.

Only those pages intended for student use as handouts may be reproduced by the teacher who has purchased this volume. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means—electronic, mechanical, photocopying, recording—without prior written permission from the publisher.

Printed in the United States of America.

ISBN: 978-1-56004-843-5
e-book ISBN: 978-1-56004-863-3

Product Code: Z305

Contents

PUBLISHER’S NOTE.....	ix
Background.....	ix
General Approach.....	ix
Geographical Terms.....	x
Three Essential Questions.....	xii
Key Themes.....	xiii
 INTRODUCTION.....	 1
 CHAPTER 1 Oceanic Ventures and the Joining of the Continents 1400-1550	 3
LESSON 1 What Was Needed to Link Continents?	 13
Student Handout 1.1.1.....	17
Student Handout 1.1.2.....	25
LESSON 2 Conquest of the Oceans: Where, How, and Why?	 34
Student Handout 1.2.1.....	38
Student Handout 1.2.2.....	40
LESSON 3 Routes to Empire	 55
Student Handout 1.3.1.....	59
Student Handout 1.3.2.....	67
 CHAPTER 2 The Columbian Exchange and Its Consequences 1400-1650	 79
LESSON 1 The Great Dying	 87
Student Handout 2.1.1.....	93
Student Handout 2.1.2.....	103
Student Handout 2.1.3.....	110

LESSON 2	
Animals, Plants, People, and Goods on the Move	111
Student Handout 2.2.1	114
Student Handout 2.2.2	117
Student Handout 2.2.3	119
Student Handout 2.2.4	127
CHAPTER 3	
Rulers with Guns	
1400–1800	135
LESSON 1	
What Is Gunpowder?	139
Student Handout 3.1.1	140
LESSON 2	
Bells, Buddhas, and Bombards: Military Gunpowder Technology	145
Student Handout 3.2.1	146
LESSON 3	
Bombs, Bullets, and Bureaucracies: The Growth of Centralized States	151
Student Handout 3.3.1	152
LESSON 4	
Effects of Gunpowder Weapons in Different Societies	156
Student Handout 3.4.1	157
LESSON 5	
Portraits of Potentates	162
Student Handout 3.5.1	164
Student Handout 3.5.2	166
Student Handout 3.5.3	167
CHAPTER 4	
The Global Economy Takes Shape	
1500–1800	173
LESSON 1	
The Global Economy: A Study in Products	177
Student Handout 4.1.1	179
Student Handout 4.1.2	181

LESSON 2	
Fur	182
Student Handout 4.2.1	184
Student Handout 4.2.2.....	185
Student Handout 4.2.3.....	186
LESSON 3	
Indigo	187
Student Handout 4.3.1	189
Student Handout 4.3.2.....	190
Student Handout 4.3.3.....	191
Student Handout 4.3.4.....	192
LESSON 4	
Tea	193
Student Handout 4.4.1	195
Student Handout 4.4.2.....	196
Student Handout 4.4.3.....	197
LESSON 5	
Analysis of the Global Economy	198
CHAPTER 5	
The Scientific Revolution	
1500–1800	199
PRELUDE TO THE LESSONS	
What Is Science?	208
LESSON 1	
Was There Science before the Scientific Revolution?	210
Student Handout 5.1.1	213
LESSON 2	
Science Comes of Age: Was It a Revolution?	218
Student Handout 5.2.1	221
LESSON 3	
What Influenced Science, and How?	229
Student Handout 5.3.1	232

CHAPTER 6

The Long Reach of the Major Religions

1500-1800	239
------------------------	------------

LESSON 1

The Protestant Reformation	246
---	------------

Student Handout 6.1.1	251
-----------------------------	-----

Student Handout 6.1.2	252
-----------------------------	-----

Student Handout 6.1.3	254
-----------------------------	-----

Student Handout 6.1.4	257
-----------------------------	-----

LESSON 2

The Counter-Reformation and the Religious Struggle in Europe	259
---	------------

Teacher Tool 6.2.1	262
--------------------------	-----

Student Handout 6.2.1	264
-----------------------------	-----

Student Handout 6.2.2	266
-----------------------------	-----

Student Handout 6.2.3A	268
------------------------------	-----

Student Handout 6.2.3B	271
------------------------------	-----

Student Handout 6.2.3C	273
------------------------------	-----

Student Handout 6.2.4	275
-----------------------------	-----

LESSON 3

The Spread of Christianity in the Western Hemisphere	276
---	------------

Student Handout 6.3.1	279
-----------------------------	-----

Student Handout 6.3.2	280
-----------------------------	-----

Student Handout 6.3.3	283
-----------------------------	-----

Student Handout 6.3.4	284
-----------------------------	-----

LESSON 4

Hindus and Muslims and the Development of the Sikh Religion in India	286
---	------------

Student Handout 6.4.1	289
-----------------------------	-----

Student Handout 6.4.2	290
-----------------------------	-----

Student Handout 6.4.3	292
-----------------------------	-----

Student Handout 6.4.4	293
-----------------------------	-----

Student Handout 6.4.5	296
-----------------------------	-----

Student Handout 6.4.6	297
-----------------------------	-----

LESSON 5	
Islam Spreads in Southeast Asia	299
Student Handout 6.5.1	301
Student Handout 6.5.2.....	302
Student Handout 6.5.3.....	304
Student Handout 6.5.4.....	307
 GLOSSARY	 309
 IMAGE CREDITS	 317
 ABOUT THE AUTHORS	 320

Publisher's Note

BACKGROUND

The Big Era lessons emphasize the relationships between particular subject matter and larger patterns of historical meaning and significance. This inclusive, context-focused approach is primarily concerned with forging connections on a global scale, thereby encouraging students to construct the globally integrated chronological framework essential to achieving deeper historical understanding. The lessons may be used flexibly, depending on interest, school curriculum requirements, and instructional time available.

This volume brings together the Landscape Teaching Units of Big Era Six in World History for Us All, a web-based model curriculum for world history available online at <http://worldhistoryforusall.sdsu.edu>. The nine Big Eras constitute the periodization plan and the basic organizational structure of the World History for Us All curriculum. Many teachers have requested a printed version of the Big Era units, or lessons, to help guide them and their students in exploring historical developments, continuities, and turning points on a larger scale than textbooks or content standards lists offer.

GENERAL APPROACH

Chapters begin by explaining the educational value of their particular historical moment, identifying the topic's relevance and positioning it within the context of the global landscape. Outlining salient information in a written description and visually situating the era on a time line, the chapter's introductory section foreshadows the content and underlying themes of the chapter, preparing students to draw informed connections among historical events.

The Three Essential Questions and Key Themes encourage students to engage in critical, higher-order thinking as they solidify their comprehension of major world trends. (See below for further description.) Additional introductory material enumerates the chapter's learning objectives, estimates the time commitment required, and lists the materials necessary to complete the lessons.

The lessons offer a varied selection of activities, readings, primary source documents, discussion questions, assessments, and extension activities. The teacher's guides, containing instructions for lesson preparation, procedure, and background information, are followed by each lesson's reproducible student handouts. Charts, graphs, and maps referenced in the lesson are also provided.

Correlations to National History Standards are listed to enhance convenience for teachers designing their curricula to align with these content recommendations. All the lessons in this volume support learning and practice of critical-thinking skills. By teaching these lessons, instructors will help students develop the skills charted in both the Common Core State Standards Initiative and the *College, Career, and Civic Life (C3) Framework for Social Studies State Standards*. Extensive correlations for this volume to Common Core State Standards are found on the web-based product page at <http://www.socialstudies.com/c/product.html?record@TF45334>. The resource sections recommend books, articles, and digital content selected as means to further explore the chapter's historical concepts and expand the scope of understanding for both educators and students.

This book and the World History for Us All model curriculum use the secular designations BCE (Before the Common Era) and CE (Common Era) in place of BC and AD. This usage follows the format of the National Standards for History and the Advanced Placement World History course. It in no way alters the conventional Gregorian calendar. We also use BP (Before Present) for historical periods approximately prior to 10,000 BP.

GEOGRAPHICAL TERMS

Afroeurasia

Afroeurasia is the landmass made up of Africa and Eurasia combined. Afroeurasia was formed during the last forty million years by the collision of the tectonic plates containing Eurasia and those containing Africa and Arabia. This geographical expression serves as a helpful tool in discussing large-scale historical developments that cut across the traditionally defined continental divisions of Africa, Asia, and Europe. Even though Africa is separated from both Europe and Asia by the Mediterranean and Red seas (except at the Isthmus of Sinai where modern Egypt meets Israel), these bodies of water have historically been channels of human intercommunication, not barriers to it. Therefore, we may think of both the Mediterranean and the Red Sea as “lakes” inside Afroeurasia.

America, the Americas

The Americas are made up of the continents of North America and South America, including neighboring islands, notably the islands of the Caribbean Sea. Until the twentieth century, most geography books classified North and South America together as a single continent, labeling them the “New World” (“new” to Europeans beginning in the late fifteenth century CE) as opposed to the “Old World,” that is, Afroeurasia. In the twentieth century, school children in the United States and most other countries (though not in some Latin American states) were taught to see the “Western Hemisphere” as comprising two distinct continents, joined only by the narrow Isthmus of Panama. However, humans in North and South America have never been entirely disconnected from one another. As far as we know, humans first migrated from North to South America 14,000 years ago, or longer, by advancing along either the Isthmus or its coastal waters. Also, it is not hard to perceive the Gulf of Mexico and the Caribbean Sea as two “internal seas” of a single American landmass, much the way we may think of the Mediterranean and Red seas as “inside” Afroeurasia. The Caribbean and the Gulf of Mexico are bounded on three sides by land and on the west by a long string of closely clustered islands.

Australasia

The continent of Australia, plus New Guinea, New Zealand, Tasmania, and other neighboring islands make up Australasia. During the last Ice Age, when sea levels were lower, Australia, New Guinea, and Tasmania comprised a single landmass known as Sahul. Human settlement of Australasia began as many as 60,000 years ago, although Polynesian mariners did not reach New Zealand until about 1000 CE.

Eurasia

Eurasia is the landmass made up of Asia and Europe. Today, this term is widely used in history and geography education. The idea that Europe and Asia are separate continents goes back many centuries, but scholars who accept the definition of a continent as “a large landmass surrounded, or nearly surrounded, by water” know that the definition applies to neither Europe nor Asia because these two landmasses are conjoined. Moreover, the Ural Mountains, designated by eighteenth century European geographers as the proper boundary between the European and Asian continents, have never been a serious obstacle to the flow of migrants, armies, trade goods, or ideas. In this book, Europe is defined as a subcontinent of Eurasia (or Afroeurasia), analogous to South Asia or the Indochinese peninsula.

Great Arid Zone

A climatic map of Afroeurasia shows that a good part of the landmass is a belt of dry or semi-dry country that extends all the way from the Atlantic coast of Africa in a generally northeasterly direction to the northern interior of China. This enormous tract comprises a chain of interconnected deserts, mountains, and semi-arid steppes. A steppe may be defined as flat or rolling grassland, equivalent to what Americans call “prairie” and Argentineans call “pampas.” The main climatic characteristic of the Great Arid Zone is low annual rainfall, which may range from an average of less than 5 inches in the driest of deserts to 20 inches or so in better watered steppes. For several millennia the Great Arid Zone has been home to pastoral nomadic peoples. Where water has been available from rivers, springs, or wells, it has also been home to farming societies and even large cities.

Indo-Mediterranea

The region of lands and seas extending from the Atlantic coasts of Europe and North Africa to North India is known as Indo-Mediterranea. This expression includes the Mediterranean basin as a whole and extends eastward across Southwest Asia to northern India as far as the Bay of Bengal. In the long term of human history from at least the third millennium BCE to modern times, this region has been characterized by a proliferation of clusters of dense population (notably in river valleys) and by intense commercial and cultural interchange.

Inner Eurasia

The huge interior landmass of Eurasia, whose dominant features are flat, semi-arid regions of steppe and forest, is known as Inner Eurasia. David Christian defines Inner Eurasia as the territories ruled by the Soviet Union before its collapse, together with Mongolia and parts of western China. Poland and Hungary to the west and Manchuria (northeastern China) to the east may be thought of as Inner Eurasia's borderlands. The northern margins are boreal forest and Arctic tundra. The southern boundaries are the Himalayas and other mountain chains.

Oceania

The basin of the Pacific Ocean and its approximately 25,000 islands make up Oceania. Human settlement of this enormous region, sometimes called the Island Pacific, began in western islands near New Guinea about 1600 BCE. Polynesian mariners reached both Hawaii to the northeast and Easter Island to the far southeast around 500 CE. The majority of the islands lie in the tropical belt south of the Equator. The first peoples of Oceania spoke mostly Polynesian languages. Some geographers include both the large island of New Guinea and the continent of Australia as part of Oceania.

Southwest Asia

Southwest Asia is the designation of the region extending from the eastern coast of the Mediterranean Sea to Afghanistan. It includes Turkey and the Arabian Peninsula, but not Egypt or any other part of Africa. This region is often referred to as the Middle East, but this book uses the term “Middle East” only in the context of history since the start of the twentieth century. (For earlier periods, “Middle East” causes confusion because it is used sometimes as a synonym for Southwest Asia, sometimes to encompass Southwest Asia plus Egypt, and sometimes to embrace the entire region from Afghanistan to Morocco.)

THREE ESSENTIAL QUESTIONS

The Three Essential Questions introduce overarching thematic questions that stand at the crux of historical understanding. These questions provide three distinct lenses through which to examine the constantly evolving relationships that shape human civilization: the relationships between humans and the environment, humans and other humans, and humans and ideas. The study of these relationships—which have proven to be enduring aspects of the human experience—and their corresponding questions function as guides for organizing classroom activities and discussion. Prompted by the Three Essential Questions, students identify how the content of each chapter relates to these themes and utilize this information to predict future patterns of activity and thought.

Humans and the Environment

These questions require students to consider how humans have lived, how they have treated the earth, and how their power over the earth has grown, while relating each chapter's content to the underlying question, “How has the changing relationship between human beings and the physical and natural environment affected human life from early times to the present?”

Humans and Other Humans

These questions explore the relationships among humans themselves and how those relationships have evolved, while relating each chapter's content to the underlying question, “Why have relationships among humans become so complex since early times?”

Humans and Ideas

These questions push students to examine how ideas influence historical development and how events shape ideas, while relating each chapter's content to the underlying question, "How have human views of the world, nature, and the cosmos changed?"

KEY THEMES

The lessons in this volume address a number of historical themes. A theme is defined here as a topic that addresses a particular sphere of human activity over time. Themes are concerned with broad aspects of change of enduring importance in the human experience. Historical learning usually works best when students begin their investigations in world history with distant eras and move forward, connecting patterns of cause and effect over time. Nevertheless, attention to thematic issues offers ways to connect the study of particular periods and regions of the world to enduring aspects of the human condition. This encourages students to think more coherently, systematically, and comparatively about the past. Teachers may wish to emphasize one or more of the key themes suggested here in connection with any of the chapters and lessons in this book.

Key Theme 1: Patterns of Population

Key Theme 2: Economic Networks and Exchange

Key Theme 3: Uses and Abuses of Power

Key Theme 4: Haves and Have-Nots

Key Theme 5: Expressing Identity

Key Theme 6: Science, Technology, and the Environment

Key Theme 7: Spiritual Life and Moral Codes

For in-depth discussion of these themes and for investigative questions that link them to the Three Essential Questions, go to World History for Us All (<http://worldhistoryforusall.sdsu.edu>, Questions and Themes, The Seven Key Themes).



Introduction

At the level of the human species as a whole, the most striking aspect of the period from 1400 to 1800 was the enormous extension of networks of communication and exchange that linked individuals and societies more and more tightly. Every region of the world became intricately connected to every other region, a development that we call the Great Global Convergence. Also in this era the world's population began to move dramatically upward, breaking through the ceilings of growth that had previously governed human affairs. Big Era Six saw striking changes in human history. Five key transformations mark the era.

First, human societies and the networks that connected them became much more complex. The most dramatic example of this is that for the first time in history, peoples of Afroeurasia began to interact on a large scale with peoples of the Americas (from the early sixteenth century) and Australasia (from the later eighteenth century).

A second major development was the Columbian exchange of plants, animals, and microorganisms between Afroeurasia and the Americas. It followed the success of European sea captains in permanently linking the two hemispheres. The ecological and demographic consequences of the Great Global Convergence were huge, especially the “Great Dying” of much of the indigenous population of the Americas. Europeans benefited from this disaster by peopling the Western Hemisphere with new immigrants, both free European settlers and African slaves. Europeans also gained access to important new sources of food and fiber. These included, among many others, maize (corn), tobacco, and the potato, which were American crops, and sugar and cotton, which came from Afroeurasia but thrived in American soil.

A third change was the emergence of a truly global economy. This was another consequence of the Great Global Convergence, which linked together all major regions, except Antarctica, in a single web of exchange. Silver was the great lubricator of global trade. In the 1550s, silver mined in the Americas became available to Spain, then to the rest of Western Europe, as well as to China directly by way of Spanish galleon voyages across the Pacific Ocean. Silver financed Europe's increasing involvement in the economy of maritime Asia and subsequently provided the basis of the emergence of an Atlantic-centered world economy by 1800.

The remarkable rise of European political and military power relative to the rest of the world was the fourth major change. This was a consequence of (1) the spread to western Europe of technological and cultural innovations that originated elsewhere in Afroeurasia, and (2) western Europe's response to the challenges of warfare in the new age of gunpowder weapons. A complete transformation of the way people fought and paid for wars occurred first in Europe, then around the world. Historians have named this development the military and fiscal revolution because it involved unprecedented advances in military technology and in the methods governments used to raise public money for wars.

The fifth great change was the development in western Europe of the Scientific Revolution and the Enlightenment and the subsequent diffusion of their ideas to other parts of the world, as women and men grappled with them in a variety of ways. These intellectual and cultural developments helped to establish rational science as a standard for measuring and explaining the natural world and human behavior. These developments greatly enhanced human ability to manipulate nature. Because they challenged long-established religious and philosophical perspectives, these developments raised profound questions about ultimate meaning in nature and society and about the sources of knowledge. These questions continue to concern us today.

Oceanic Ventures and the Joining of the Continents



WHY STUDY OCEANIC VENTURES?

Long-distance maritime travel had a long history before the pioneering voyages that began in the late fifteenth century. The oceanic voyages of the 1400 to 1550 period, however, produced radically new information. First, mariners proved that there was open water to the south of Africa and that Europe could be linked to Asia by sailing east. Second, by sailing west to try to reach Asia, they discovered the Americas, two continents that peoples of Afroeurasia had previously not known about. And third, they demonstrated that the western Atlantic was not landlocked, that there was open water to the south of the Americas leading to the Pacific, and that Asia could indeed be reached directly from Europe as well as from the Americas by sailing west.

The new sea routes discovered became increasingly busy channels of communication between continents and countries. Across these routes passed, by conscious intent or not, people, goods, plants, animals, technologies, ideas, and diseases. Contacts multiplied over a wider range of ecosystems, involving more and more diverse peoples. The advantages of this situation increasingly became slanted toward Europeans, though the process was gradual and did not become full-fledged until well beyond 1550.

The development of our contemporary world of international organizations, multinational corporations, globalization, and both the spread of and resistance to European cultural ideas and institutions was heavily influenced by what happened during this period of long-distance maritime exploration and encounter.

OBJECTIVES

Upon completing this chapter, students will be able to:

1. Identify reasons why mariners undertook long-distance oceanic voyages both east and west during the fifteenth and early sixteenth centuries, and compare the Chinese, Portuguese, and Spanish ventures.
2. Evaluate what promoted, and what hindered, the novel sea voyages and their achievements during the period 1400 to 1550.
3. Explain how, and with what results, Spain and Portugal turned the search for new sea routes into a grasp for empire in the sixteenth century.
4. Analyze ways in which each side viewed the other in the encounters of Africans, Native Americans, and Asians with Iberians (Spanish and Portuguese) during and after the latter's maritime expeditions of 1400 to 1550.
5. Develop a toolkit for assessing the reliability of historical documents as evidence, and gain practice in its use.

TIME AND MATERIALS

This chapter is versatile. The variety and number of student readings, discussion questions, and activities provided are meant to give teachers choices in using materials most suited to their students, interests, and circumstances.

Time taken for the chapter will vary depending on teachers' selections and on whether the student handouts and some of the activities are assigned as homework.

Each of the three lessons in the chapter may be used alone. Lesson 1 is likely to take the least time, and Lesson 3 the most. If the time available is severely limited, Lesson 2, which is the core of the chapter, could be minimally covered in two class periods. Each of the other lessons would take an additional one to three class periods.

No materials are needed other than pencil, paper, and student handouts.

HISTORICAL CONTEXT

Early modern beginnings: Thriving trade links connected various parts of Afroeurasia

About 1400 and for a considerable time thereafter, India and China were the hub and driving force of the Afroeurasian economy. They had the largest populations, the greatest wealth, and by far the largest volume of exchanges. A many-stranded commercial network linked them to Southeast and Inner Eurasia, the Islamic world, parts of sub-Saharan Africa, the Mediterranean, and Europe.

Long distance maritime trade from Asia to Europe was at this time largely in the hands of Muslim merchants, though people of many faiths and origins participated. They brought goods by ship from China, Indonesia, the Indian Ocean rim lands, and, on the final leg, from

the Red Sea and the Persian Gulf overland to ports on the eastern shores of the Mediterranean and to Egypt. From there ships from Venice, the leading southern European seaport, typically picked up the merchandise and distributed it to consumers in the rest of Europe.

More than just merchandise was passed on. Along with trade goods traveled political, cultural, economic, religious, and technological information—and sometimes infectious microorganisms. The flow of information favored collective learning among human communities and sparked innovation. Also, the exchange of diseases between densely settled areas eventually increased the overall immunities of people in these areas.

The groundwork was laid slowly for growth of European dominance and for an expanded and integrated world.

Shifts in this long-established system took place as a result of the deliberate series of European long-distance sea voyages started in the fifteenth century by peoples of the Iberian Peninsula. They were not the only people to undertake such voyages. Imperially sponsored Chinese navigators took part in a series of marine expeditions in the first third of the century. These voyages crossed the Indian Ocean and reached ports as far as Arabia and the East African coast. However, these destinations were not new to them, and their short-lived visits were not intended to establish permanent colonies or achieve conquests.

Iberian mariners' voyages, on the other hand, resulted in finding new sea routes, lands previously unknown to Europe, and a shift from a search for profits to a grasp for domination. The consequences that followed, both intentional and unintentional, gradually brought Europe from the edges to the center of the world's trade. Over some three hundred years, the opening of the oceanic passages contributed to the growth of European power on the world scene economically, politically, and culturally. They also helped promote:

- Intensification of every kind of exchange worldwide.
- Increased volume and speed of the movement of goods, peoples, information, and ideas.
- That entanglement of diverse economies and societies, which we now call globalization.

As a result of these developments, both diversity within groups and uniformity across groups have increased. So have inequality between and within groups, as well as environmental costs. From the sixteenth century on, deforestation became a bigger problem than earlier, owing to overuse of timber to meet the increasing demands for ships and for smelting ores, such as gold, silver, and iron. The trend of moving more people and more goods for longer distances was given a mighty push in the fifteenth and sixteenth centuries. Since then it has accelerated, accompanied, from the later eighteenth century, by the steep rise in use of the fossil fuels, which has contributed to growing pollution and global warming in our own time.

The beginnings were small steps. For nearly a century, Iberian seafarers explored the Atlantic islands close to Africa, and the Portuguese crept down the west coast of that continent. Then, during a third of a century starting in 1492, mariners sponsored by Spanish and Portuguese rulers set out on long-distance voyages. They did not set off into the unknown. They thought they knew their destinations, but they were looking for previously unknown routes to reach them.

Spaniards went looking for an alternative and more direct route to the spices and other treasures of the Indies. Instead, they came across huge amounts of gold, silver, and land in the Americas, which they proceeded to conquer, subdue, and exploit, using unfree labor. The Portuguese first looked for gold in West Africa. Their search led them gradually to the carriers and sources of the spice trade. They used their cannon-equipped ships, based at forts and trading stations along the edges of the Indian Ocean, to intimidate or eliminate competitors. Their aim was to establish a monopoly over the distribution of spices and, more generally, of seaborne trade in the region.

In the course of their search, between them the mariners sailing from Iberia made a series of revolutionary discoveries. They found:

- An unexpected continent, first an obstacle in the way of reaching Asia from Europe by a western sea route, then a major contributor to the rise of European power.
- Proof that routinely crossing the Atlantic Ocean both ways was possible, thereby linking Europe and the American continent.
- Proof that there was open sea below the southern tip of Africa and that an entirely waterborne crossing from the Atlantic into the Indian Ocean was possible.
- A seapassage that allowed bypassing America, proving the possibility of an uninterrupted passage by sea from the Atlantic into the Pacific, which was at that time barely glimpsed by Europeans.
- The path across the Pacific to Indonesia, proof of Columbus's idea that reaching the East by sailing west was possible, though a return voyage east across the Pacific was not managed until after 1550.
- The possibility of circumnavigating the globe. Having crossed the Atlantic, Pacific, and Indian oceans, and rounded Africa's southern tip, European mariners were able to home in on the Spanish port where their westward voyage had begun. This proved that the seas were all connected and could serve as an uninterrupted highway linking the world's landmasses with each other.

The driving forces that underlay early modern Iberian maritime enterprises were varied and complex.

Insofar as we can now reconstruct motivations for the so-called voyages of discovery by Europeans in the fifteenth and sixteenth centuries, primary among them were the following:

- Continued rivalry with Muslim powers in the Mediterranean region. In the fifteenth and sixteenth centuries, the Ottoman Turkish empire conquered the Byzantine state, the Balkan Peninsula in southeastern Europe, and the eastern and southern shores of the Mediterranean.
- Intensified search for Christian rulers in Africa or Asia, who might be enlisted as allies against Muslims. Legends about these rulers may have been based on the existence of a Christian kingdom in Ethiopia.

- Increased zeal among Roman Catholics for conversion of unbelievers to Christianity, an enthusiasm that emerged partly from the Protestant Reformation and the ensuing loss of the Roman Church's Christian monopoly in western and central Europe.
- Increasing demand in the West for luxury goods such as spices, silks, porcelain, and other products of Asia, stimulated by the significant growth of population after the Black Death and the rise in incomes that came about after death rates had made labor scarce.
- Increasing need for gold to pay for the Asian goods that Europeans desired. Europeans had few other exports of significant interest to Asian markets.
- Search for new ways to access sources of gold on the one hand and of goods from China, India, and Indonesia on the other. The aim here was twofold. One was to stop profits from going to Muslim middlemen, then the primary carriers of trade between East and West. The other was to gain all profits for Christian merchants and countries.
- Achievement of individual fame and honor in services to God, Church, and ruler.

Several different conditions favored the undertaking and continuation of long-distance European ocean voyages in the fifteenth and sixteenth centuries.

The success of long-distance maritime exploration of regions new to Europeans was promoted, to varying degrees, by

- The existence of wind systems in the Atlantic and Pacific as well as in the Indian oceans that could be counted on to blow consistently in a known direction at known times of the year at known latitudes.
- Gradual technological changes from the Middle Ages onward that upgraded the sailing qualities and sturdiness of Iberian ships, by combining existing features of Atlantic, Mediterranean, and Indian ocean ship designs.
- Western mariners' learning to use the altitude of the polestar or the sun to establish latitude and thereby a ship's position when out of sight of land. The development of instruments to help measure latitude.
- Translations of Greek and Arabic texts, which allowed recovery by Renaissance humanists of classical geographical information and access to more recent Islamic cartography and geographical scholarship.
- The Renaissance values of interest in the natural and physical world.
- The printing press, which made news of discoveries, travel accounts, and sailing manuals available to more people faster and more cheaply, thereby both whetting appetites for further exploration and aiding in carrying it out.
- The strong financial interest of rulers in the fruits of overseas ventures, and their resulting enthusiastic support for it.

- The institution in Iberia of formal instruction, examinations, and licensing of ship pilots to improve navigation in the early sixteenth century.
- The use of cannon on board Iberian ships and the lack of comparably armed competition in the Indian Ocean until the 1530s or so.
- The land-orientation at the time of major political units such as Ming China, the Delhi Sultanate, the Vijayanagar Empire in South India, and the Aztec and Inca empires in the Americas. Also, their lack of vital interests in either overseas trade or possession of large navies.

Overseas discoveries, and their consequences, played themselves out against a background of complicated cultural and religious changes and political power plays in Europe and the wider world.

The Spanish and Portuguese oceanic voyages of the fifteenth century, and the possibilities they opened, were soon followed by other voyages sponsored by other European nations as well. In the 1400 to 1550 period, Iberian mariners' expeditions, and those of their imitators, took place in a context that in Europe included:

- The European Renaissance, an intellectual and aesthetic movement to resurrect ancient learning and to experiment with new modes of literary and artistic expression.
- The rapid spread of ideas owing to the technology of moveable-type printing and other improved communications.
- The "gunpowder revolution," resulting in widespread adoption of cannon, muskets, and bigger armies.
- The Protestant and Catholic reformations.
- Christian states' attempts to organize resistance against the advancing Ottomans, with whom they warred intermittently throughout the fifteenth and sixteenth centuries.
- The series of wars between the huge Hapsburg Empire of Charles V on the one hand, and France, sometimes allied with the Ottoman Empire, on the other.
- The consolidation and centralization of territorial states with bureaucracies and police that more vigorously collected taxes from their subjects.
- The beginnings of the Scientific Revolution.

In a world context, the Iberian maritime expeditions were contemporaneous with:

- A rise in population in most areas of Afroeurasia, though not in the Americas. Afroeurasia's population surged in the sixteenth century from about 418 million to 545 million. At the same time, the native populations of the Americas plunged. In 1600, therefore, something close to 98 percent of all human beings lived in Afroeurasia.
- Expansion of the Ottoman Empire into Europe from the late fourteenth to the late seventeenth century.

- The conversion to Christianity in 1491 of the king of Kongo and many of his people, the greatest success of Portuguese missionary effort in Africa.
- The flowering of Songay, one of the largest African empires in history, under King Askia Mohammed (1493–1529). He took control of caravan routes in the gold trade and made his expanded and consolidated empire a center of Islamic scholarship.
- Foundation of the native Iranian Safavid Dynasty in Persia, which established Shia Islam as the official religion of its empire, incurring the enmity of the Sunni Ottomans.
- Expansion of the Muslim sultanate of Aceh in Sumatra. After 1511, its rulers began deliberately to compete with the Portuguese for the area's spicetrade, successfully attracting Muslim merchants to their own territory at the expense of Portuguese-occupied Malacca.
- Decimation of Indian populations in the Americas by disease and European exploitation.
- Accelerated export of slaves from Africa to the Americas.
- Beginnings of large-scale changes in American ecosystems, owing to agricultural practices that favored monoculture and the introduction of new plant and animal species.
- Routing by Baber, descendant of Tamerlane and Chinggis Khan, of the Delhi Sultanate in 1526 and the subsequent establishment of the Mughal Empire in North India.
- Introduction of firearms to Japan in 1543 and the subsequent growth of a gun manufacturing industry there.

In spite of the revolutionary nature of the long-distance oceanic voyages' discoveries, their immediate consequences on a worldscale were limited.

In the short run, say by 1550, their impact was felt most by governments and mostly in some of the countries bordering seas, by those involved in commerce and finance, and by some among the educated and literate in some countries, virtually all of them men. Much less or not at all affected worldwide were the rural and agricultural populations, urban laborers, and still-isolated tribal societies that, between them, made up the vast majority of the world's inhabitants.

The long run was a different story. While the "trickle-down" effects came gradually and took centuries to fully unfold, the repercussions of the 1400 to 1550 oceanic ventures left hardly anyone in the world untouched by the time of the nineteenth century. Though it was not obvious at the time, with hindsight this period has proved to be one of the turning points in world history.

THREE ESSENTIAL QUESTIONS

Humans and the Environment

What features of the natural environment, such as characteristics of seas, winds, climate, mineral deposits, and vegetation, promoted Iberian mariners' exploring and trading activities in various parts of the world in the fifteenth and sixteenth centuries?

Humans and Other Humans

Compare and contrast the ways that Spaniards and the peoples they met in the Caribbean, Mexico, and Peru related to each other, with the ways that Portuguese and the peoples they met in Africa and India related to each other. What reasons might there have been for similarities? What reasons for differences?

Humans and Ideas

How did religious ideas influence the nature and outcomes of encounters between Europeans and peoples native to the territories in Africa, Asia, and the Americas whom they contacted?

KEY THEMES

This chapter addresses the following historical themes:

Key Theme 2: Economic Networks and Exchange

Key Theme 3: Uses and Abuses of Power

Key Theme 5: Expressing Identity

CORRELATIONS TO NATIONAL HISTORY STANDARDS

National Standards for World History

Era 6: The Emergence of the First Global Age, 1450–1770. 1A: The student understands the origins and consequences of European overseas expansion in the 15th and 16th centuries; 1B: The student understands the encounters between Europeans and peoples of Sub-Saharan Africa, Asia, and the Americas in the late 15th and early 16th centuries; 4A: The student understands how European powers asserted dominance in the Americas between the 16th and 18th centuries; 5A: The student understands the development of European maritime power in Asia.

INSTRUCTIONAL RESOURCES

- Berggren, Laurence. *Over the Edge of the World: Magellan's Terrifying Circumnavigation of the Globe*. New York: William Morrow, 2003.
- Casale, Giancarlo. *The Ottoman Age of Exploration*. New York: Oxford University Press, 2010.
- Dreyer, Edward L. *Zheng He: China and the Oceans in the Early Ming Dynasty, 1405–1433*. New York: Longman, 2006.
- “Explorers to the West.” *Calliope Magazine* (January 1992).
- Fritz, Jean. *Around the World in a Hundred Years: From Henry the Navigator to Magellan*. New York: Putnam, 1994.
- Goodman, Joan Elizabeth. *A Long and Uncertain Journey: The 27,000-Mile Voyage of Vasco da Gama*. New York: Mikaya, 2001.
- Hall, Richard. *Empires of the Monsoon: A History of the Indian Ocean and Its Invaders*. London: HarperCollins, 1996.
- Kent, Zachary. *Christopher Columbus*. Chicago: Children's Press, 1991.
- Levathes, Louise. *When China Ruled the Seas: The Treasure Fleet of the Dragon Throne, 1405–1433*. New York: Oxford University Press, 1997.
- Marks, Robert B. *The Origins of the Modern World: A Global and Ecological Narrative from the Fifteenth to the Twenty-first Century*, 2nd ed. Lanham, MD: Rowman and Littlefield, 2007.
- Paine, Lincoln. *The Sea and Civilization: A Maritime History of the World*. New York: Alfred A. Knopf, 2013.
- Parry, J. H. *The Age of Reconnaissance*. Berkeley: University of California Press, 1981.
- Pearson, Michael. *The Indian Ocean*. New York: Routledge, 2003.
- Phillips, Jr., William D., and Carla Rahn Phillips. *The Worlds of Christopher Columbus*. New York: Cambridge University Press, 1992.
- Restall, Matthew. *Seven Myths of the Spanish Conquest*. New York: Oxford University Press, 2003.
- Risso, Patricia. *Merchants and Faith: Muslim Commerce and Culture in the Indian Ocean*. Boulder, CO: Westview Press, 1995. An excellent and readable history of the importance of trade in expanding Islam in the Indian Ocean.
- Russell-Wood, A. J. R. *The Portuguese Empire, 1415–1808: A World on the Move*. Baltimore, MD: Johns Hopkins University Press, 1998. A lively global narrative drawing on updated research in world history. Appealingly readable, though loaded with detail.

Seymour, M. J. *The Transformation of the North Atlantic World, 1402–1763*. Westport, CT: Praeger, 2004. Stresses change and its possible explanations; combines a chronological with a topical approach; offers new ways of looking at familiar information. Readable, but needs concentration. Two-thirds is post-1550.

“Spanish South America.” *Calliope Magazine* (May 1993).

Thomas, Hugh. *Conquest: Montezuma, Cortés, and the Fall of Old Mexico*. New York: Simon and Schuster, 1993.

“When Spices Ruled.” *Calliope Magazine* (February 2006).

Wiesner-Hanks, Merry. *An Age of Voyages, 1350–1600*. New York: Oxford University Press, 2005.

Worth, Richard. *Pizarro and the Conquest of the Incas in World History*. Berkeley Heights, NJ: Enslow, 2000.

LESSON 1

What Was Needed to Link Continents?

Introduction

- Students can work on most activities and questions as a whole class, as individuals, or in groups. Results of individual and group work usually need to be shared with the whole class.
- Unless stated otherwise, “Document” means both the head note and the excerpt from an original source that follows the head note.
- Giving students the questions they are going to be asked to answer, and the activities they will be asked to do, before they read the documents on which the questions and the activities are based, helps their concentration, comprehension, and performance.
- Questions and activities typically start with the relatively simple and go on to probes of increasing complexity.
- Encourage students to keep notes of answers to discussion questions and results of activities because some subsequent questions build on these.
- Maps of the Indian and Atlantic oceans in the Appendix show the location of places that figure in the chapter as well as dates when Portuguese or Spanish, between 1400 and 1550, first formally claimed, conquered, or settled those locations.

Introductory Activities

Ask students to respond to the following questions. If time is limited, each of the following questions (or parts of one) could be assigned to a different group, which would report its conclusions to the rest of the class.

1. If you were planning a long-distance sea voyage during the second half of the fifteenth century to little-known destinations along unknown routes, what problems with the physical environment would you expect to have to deal with during the voyage? What problems of human-to-human relations would you expect to have to deal with on board and on arrival at your destination?
 - a. What preparations might you make to avoid or minimize the problems you expect? What personal characteristics would most help you, and your crew, deal with these problems? What solutions to the problems might you try?

2. At the time of the long-distance sea voyages of 1400–1550, what else was going on in the world? Brainstorm happenings you know of during that time in Asia, Africa, Europe, and the Americas. Could any of these have helped, or hindered, venturing long-distance sea voyages? Which? How? (Ask students about those parts of the world with which they would likely be familiar.)
3. If American astronauts were to meet intelligent alien life-forms on Mars in the next few years, what information and what frames of reference about meeting and dealing with unfamiliar peoples or societies on Earth could they draw on to help them manage the extraterrestrial encounter? (Ask students to think about images from literature and mass media, history, and politics, as well as ideas about power, opportunity, diversity, gain, threat, cooperation, and conflict.)

What reactions by the astronauts to such a meeting do you think would be most likely, based on their frames of reference and on the notions they have about the “Other”? Would they draw on a different set of notions, and react differently, if the Martians had turned up at the Kennedy Space Center, instead of Earth astronauts appearing on their turf? If so, what would be the difference? Why?

4. Brainstorm a list of characteristics that you think define an “empire.” Take a few minutes to try them out on empires you know something about. How well do the characteristics you have hypothesized fit? Ask students to arrive at a class consensus on the characteristics that you agree define an empire. Can America today be described as an empire? Why or why not?
5. If a student asked you how to go about deciding whether a historical document could be accepted as reliable evidence, what advice would you give him or her? Would your advice work equally well to assess the reliability of information on the Internet, in advertisements, political speeches, and news articles as well? Why or why not? If you think additional or different ways of assessing the reliability of these would be needed, what might such ways be?

Activities and Discussion Questions

Ask students to respond to the following:

1. Check the answers to the first Introductory Activity in your notes. For which of the environmental and human problems you had expected as a long-distance mariner in the fifteenth century was there evidence in Student Handout 1.1.1? Which problems described had you not anticipated? For what problems that you had expected was there no evidence in Student Handout 1.1.1? If you had been a long-distance mariner at that time, which of the problems would have troubled you most? Why?
2. Brainstorm the personality traits you think would have been helpful to the long-distance mariners of the fifteenth and sixteenth centuries, and explain in what way(s) they would have been helpful. Why might “guts” (courage, determination) be singled out as

something needed to make successful long-distance sea voyages at that time? How, if at all, do the personality traits that would be helpful to today's long-distance traveler by airplane or by car differ from those you have just brainstormed for mariners of the earlier time?

3. If you could have constructed the ideal ship in which to cross the Atlantic in the late fifteenth century, and knew the information from Student Handout 1.1.1, which features from those of European, Muslim, and Chinese designs at the time would you have included in the design of your ship? Explain your reasons for doing so. Which of the features you would have included were missing from the ships actually in use in Europe at the time? What might account for this?
4. On each of the nine maps of Student Handout 1.1.2, find places you know. Note their size, shape, location relative to other places, and the ways they differ from, or are approximately the same as, the maps you are used to seeing. (A comparison with the modern maps in the Appendix will help with this.)
 - What would you infer, and how, about the purpose or intended use(s) of each map in Student Handout 1.1.2?
 - Arrange the maps in Student Handout 1.1.2, regardless of their date, into two groups based on what you consider to be their common characteristics. What reason(s) could you come up with for the difference(s) between your two groups?
 - What influence did the historical context at the time, and the background of the map's creator, have on the maps? Give examples. (Contemporary examples might be a map produced by an Internet search engine that shows the location of Internet cafes, or a city map by an oil company showing gas stations.)
 - What, if anything, surprised you about your findings? Why?
5. Judging by the maps in Student Handout 1.1.2, what do you consider the most important changes in European ideas of what the world was like? Why? On what did you base your assessment of importance? Which map features, during any period, could have influenced, either favorably or unfavorably, the undertaking or success of long-distance maritime voyages? Explain your argument.
6. Debate the accuracy of this statement: "It was adopting and adapting the ideas and technologies of earlier times and other peoples, rather than anything they came up with on their own, that made possible the long distance voyages of Iberian mariners in the fifteenth and early sixteenth centuries." Support your arguments, for and against, with evidence from Lesson 1. How, if at all, would you want to change the statement in light of the evidence?
7. **This activity may serve as an assessment.** What knowledge available to Western Europeans in the fifteenth and early sixteenth centuries would have encouraged them, and what discouraged them, in trying to find an all-sea route to the eastern sources

of spices during the 1400–1550 period? Explain your argument, and support it with evidence from the student handouts.

8. **This activity may serve as an assessment.** Rank the following in order of importance as enablers of Columbus’s crossing the Atlantic and returning, and da Gama’s reaching India from Portugal by an all-sea route around Africa’s tip and returning. Give reasons for your ranking.
- Technological changes in European ship design after about 1400.
 - The existence of reasonably reliable, mostly east-west and west-east wind systems.
 - Changes in the representation of the world on European maps after about 1400.
 - Europeans’ learning to use heavenly bodies to locate themselves accurately in terms of their distance from the equator by establishing their latitude.
 - Having guns available on shipboard.
 - Personal characteristics of those undertaking the voyages.
 - Other—if you think of something else.

Extension Activity

A prerequisite for answering this question is having studied the European Renaissance and the centralizing tendencies of rulers about that time.

Imagine that you are an investigative reporter in the early sixteenth century. Write a brief article about how new values about the individual and the natural world, and new interests of rulers, might have contributed to the long-distance Iberian maritime expeditions of the time.

Needed: Ships, Winds, Maps, Stars, Guns—and Guts?

Ships: Keeping Afloat, Carrying Cargo, and Moving Across Seas

In the twentieth century the Atlantic was crossed on an open balsa raft and in a rowboat. But both were unsuitable for reliable, regular crossings, especially with cargo.

In the fifteenth century, Europe had two main kinds of ships in general use. The northern tradition developed in the countries bordering the Baltic and the North seas, the southern in countries bordering the Mediterranean. Within these two traditions, there were many different designs tailored for particular purposes.

- The northern design's hull (the body of the ship) was clinker built. That meant the planks making up the outer "skin" of the ship overlapped each other, and they were nailed so that each nail passed through both planks and into the internal frame as well. This made for strength and reasonable water tightness without much caulking. The narrow Viking ships with side-mounted steering oars, no decks, and little cargo-capacity that occasionally crossed the Atlantic to America around 1000 CE were clinker-built. In the early thirteenth century, the more efficient rudder, mounted at the center of the stern, replaced the steering oar.
- One version of clinker-built ships developed in the north by the early fourteenth century was broad-beamed (wide from one side to the other at the mid-point of the ship), stable, and equipped with a massive keel. (The keel is a structural part of a ship in the center of the hull bottom and extending from stem to stern, sometimes protruding from the hull to provide stability.) It could carry heavy cargos. When used in warfare, temporary "castles" were raised on this type of ship front and back to make boarding enemy ships easier and to give archers and musketeers an elevated position to shoot from. But the design limited the ship's size, since planks had to be rounded at front and back, and joining them became too difficult over 100 feet. Their rigidity was a disadvantage if the ship ran aground.
- Northern ships' sails were square and fixed to horizontal yards mounted on each of the masts. This allowed a large area of canvas to be carried safely and with ease of handling. But unless the wind came from dead astern (from behind the ship), or nearly so, these ships made excess leeway, that is, a sideways movement that resulted in getting off course. A headwind simply kept them in harbor.



A ship on the Baltic sea.

- The southern design's hull was caravel-built. Its planks were fitted edge to edge rather than overlapping, each plank fastened with pegs or nails only to the permanent skeleton or frame, which was built first. It took considerable caulking of the joins, regularly repeated, to keep the ship watertight. But these ships could be built to any length and had more flexibility than clinker-built vessels. Early examples—caravel-built ships called caravels—had low sides and a shallow draft so that they could be used close inshore. At the start of the fourteenth century, they adopted the center-mounted stern rudder of the northern design. By the late fourteenth century, sides and stern were raised to prevent swamping, the beam was broadened, and the hull often covered with a deck. By the mid-fifteenth century, caravels usually had a quarterdeck (an additional deck, like a second story, raised over that part of the deck behind the mainmast), and a small permanent stern castle. Sometime in that century, the tiller that moved the rudder was made to project inboard, giving better leverage.

The caravels built to this design carried sails influenced by the lateen sails of the dhows, which Muslim mariners sailed across the Indian Ocean as far as China. These vessels were carvel-built, their planks fastened together with coir ropes passed through holes drilled at close intervals.

Spun from coconut fibers, coir was highly durable, unaffected by seawater and rot. Its use made the dhow flexible, resistant to break-up on reefs or shoals, and easy to repair. Dhows were typically without decks.



A two-masted dhow of a type that sailed in the Persian Gulf.

Lateen sails appeared in the Mediterranean about the thirteenth century. They were triangular, or nearly so, and the wooden yards that held them stiff to the wind were fixed more or less vertically to the longest edge of the triangle. They allowed sailing with maximum efficiency against a headwind, and they were simple to adjust to various wind conditions. However, the



A model sailing ship.

length of the main yard was tailored to the length of the ship. This limited the ship's size, since with increased length the yard became too heavy and hard to handle. By the fourteenth century, lateen and square sails were combined on caravels in the Mediterranean.

Around the start of the sixteenth century, carracks developed from the caravels. They were bigger, bulkier, more rounded, and had more complicated rigging. Some had four masts and carried two or three square sails above each other on the foremast. They had lateen sails on the mainmast and mizzenmast, though the distribution of sails on them varied. The result was increased speed, the ability to sail under different wind conditions, and easier steering. Late in the century, a topsail was added above the mainsail. Carracks had permanent castles both fore and after that had room for a large

crew and lots of provisions. That structure, however, made them prone to topple in strong winds. Their decks were stable and served as gun platforms.

The Chinese voyages in the fifteenth century took place in ships, or junks, that represented an altogether different design tradition, some of which were adapted to European ships. The most outstanding among these vessels were the “treasure ships,” which were some 300 to 400 feet long and plied the Indian Ocean in the fifteenth century and earlier. They had multiple decks, a hull with watertight compartments to minimize flooding in case of damage, and pumps to get rid of any water or to fight fires. They also had a stern-mounted rudder that could be adjusted to the depth of the water. They were mounted with multiple masts spread with slightly curved sails with horizontal bamboo battens to stiffen and strengthen them. These sails were easy to handle, needed few ropes, and could be adjusted to winds from different directions. The crew of a large Chinese junk ran to the hundreds, and naval artillery was sometimes placed on the decks.



A seventeenth-century Chinese woodblock print that may represent fifteenth-century Chinese treasure ships.



Winds: Getting from Here to There

- Sailing ships depended on wind to make them move.
- Fastest and easiest to handle on ships with square sails were winds that blew from directly behind when the vessel pointed in the direction it needed to go. But for a return trip, those winds could pose problems because a square sail might be “taken aback.” That is, the wind might push the sail back against the mast. If the ship had one or more fore sails and aft sails, it could sail closer to the wind. That is, the ship could advance even if the wind were coming across the beam (the side of the vessel). By tacking, or following a zigzag steering pattern, along with proper adjustment of sails, the ship could progress against a contrary wind.
- Knowledge of the global wind systems gave mariners greater confidence to sail out of sight of land. The monsoon blows in the Indian Ocean and China Sea region. In the Atlantic and Pacific oceans the trade winds, westerlies, and easterlies blow.
- Monsoons are winds that reverse direction seasonally. In Asia the winter monsoon blows reliably (though the exact dates on which it starts and ends vary year to year and in different locations) from the southwest from April to October, and from the northeast from November to March. In summer, monsoons bring torrential rains; in winter they bring sunny and dry weather.



- The trade winds blow very steadily, almost continuously at about 11 to 13 miles per hour in both the Atlantic and Pacific oceans. They occur in two wide bands: one from about 5 to 30 degrees north of the equator and the other from 5 to 30 south of it. The trade winds have a tendency to curl in toward the equator, blowing from the east to the west/southwest in the Northern Hemisphere and to the west/northwest in the Southern Hemisphere.

- Winds called the westerlies blow from the southwest in the Northern Hemisphere and from the northwest in the Southern Hemisphere toward the east, between the latitudes of about 35 and 60 degrees. These have bursts of especially strong winds and storms, particularly in the latitudes called “the roaring forties.” Their speed is quite variable in both the north Atlantic and the north Pacific and less so in the Southern Hemisphere.
- In the region of about 30 degrees both north and south of the equator, often called the horse latitudes, there are generally weak winds, with hot and dry weather.
- Close to and slightly north of the equator, between the two bands of the trades, is the region of the dreaded doldrums. Sailing ships can get becalmed here for days or weeks. Any winds there are variable and include thunderstorms and sudden squalls.
- A band of weak and irregular winds blow from the poles east to southwest in the Northern Hemisphere and east to northwest in the Southern Hemisphere, curling toward latitude 60 degrees.

Maps: Knowing where you are relative to the rest of the world

- In the fifteenth century, educated people regarded a round Earth as common knowledge, despite popular tales about a flat Earth.
- Venetian, Florentine, and Genoese mariners had since the Middle Ages sailed regularly across the Mediterranean, Black, and Baltic seas, as well as the coastal waters of the northeastern Atlantic. The most frequented coastlines of these seas, including natural features and ports, were mapped in detail and quite accurately on charts, each one showing a limited area. These portolan charts, as they were known, represented the cumulative experience of mariners, summarized for the benefit of other seafarers. They could be relied on for navigating fairly short passages but were no use for fixing the position of a ship out of sight of land.
- From the Mediterranean region, many Muslims and some Christian Europeans (mostly Italians) made their way in the thirteenth and fourteenth centuries overland to Inner Eurasia, India, Indonesia, and China. Many were merchants in search of products such as spices and silk unavailable at home. Other travelers included diplomats, scholars, and missionaries. Ibn Battuta and Marco Polo were only the best known among many other journeyers. The Mongol Empire ensured safe routes. Some travelers left descriptions, not always accurate or full, of their routes and the places they visited.
- European world maps at this time began to pay attention to contemporary experience but often relied at least partly on the Bible to depict the earth’s geographical features. They were far less accurate than the map of the Muslim Arab geographer Idrisi, who had worked at the court of a Christian Norman king in Sicily in the twelfth century.
- In about 1410, two geographical works appeared that heavily influenced European views of the world. One, called *Image of the World*, was written by a cardinal of the Roman Catholic Church. It drew on the Bible, legends, travelers’ accounts, and classical writers,



on whose authority the cardinal affirmed the possibility of reaching the Indies by sailing west. He exaggerated the east-west stretch of Asia and the proportion of land to sea in the area of the globe. Columbus is known to have studied this book. His own calculations made the distance from Europe to Japan less than 3,000 nautical miles. The actual great circle distance is 10,600.

- The other work was a Latin translation of the *Geography* by the second-century CE author Ptolemy. It described the world of Ptolemy's time. It gave a fairly accurate picture of the Roman Empire and its neighboring countries. But beyond the area of his knowledge, Ptolemy used guesswork instead of evidence. He described a huge southern continent, attached at one end to Africa and the other to China, making the Indian Ocean a landlocked sea. He stated that navigation was impossible anywhere in the Southern Hemisphere because of the excessive heat there. And he contradicted the near-to-accurate estimate of the earth's circumference by an earlier classical author, his own being an underestimate by as much as one-sixth, thus shrinking the size of oceans. Ptolemy continued to have influence on geographical writing into early modern times.
- European cartographers from about 1400 to 1550 usually underestimated the circumference of the earth by about 6,000 miles. Until the late sixteenth century, some of them continued to believe that America was just an extension of Asia. Others thought that Asia lay just barely beyond the lands they had so newly found and that the westward route was therefore much shorter than the one around Africa.
- By the fourteenth century, Chinese maps gave a generally accurate view of the relationships and main features, though not the relative sizes, of the entire area from Korea to the Atlantic edge of Europe. At least two Chinese world maps from the 1300s are known but have not survived except as sources for the Korean world map of 1402. The Kangnido Korean map, drawing on two earlier Chinese maps, shows India at the center combined with a heavily swollen China. Correctly positioned are Korea, Arabia, and the Red Sea. Korea is depicted as about the same size as Africa with an open sea at its tip. Europe is somewhat squashed on the left but shows the Mediterranean and Black seas and names many European countries, including "Alumangia," an attempt at Alemania, the Latin name for Germany.
- Pilot guides and navigational literature by Muslim writers describing features of seas and shores from the Persian Gulf and the Red Sea to the Asian edges of the Pacific circulated in the fifteenth and sixteenth centuries.
- A Javanese chart of 1512 delineated Portugal, Brazil, the southern tip of Africa, the Red Sea and Persian Gulf, Sumatra, Siam, Java, and the Spice Islands. The first European sailing directions for the region east of India to the Spice Islands, compiled in 1514, were based on Javanese charts.
- European seafarers both East and West in the fifteenth and sixteenth centuries tried hard to find and persuade local pilots to help them navigate.



Navigation: Finding your way from here to there

- A map showed the location of starting place and intended destination. Knowing the location of one's ship when between the two and out of sight of land could be a big problem. Two methods helped:
 - Experience, based on knowledge by observation of wind and wave patterns, currents, depth of water, color of the sea, kinds of seaweeds, types of fish, clouds, the flight and kinds of birds, and, as often as possible, sightings of known landmarks. In unknown waters and very far from land, these methods were less than satisfactory.
 - Fixing location by finding the latitude (the east-west line giving the distance north or south of the equator) based on measuring the altitude (height above the horizon) of the polestar, or North Star. At the North Pole, the star is directly overhead at an altitude of 90 degrees, and the location on Earth is at 90 degrees latitude. At the equator, the star is right at the horizon, at 0 degrees latitude. In between, the angle of the star above the horizon gives altitude and latitude. For navigation, a pilot would measure the star's angle before leaving the home port. On the return voyage, the ship would sail north or south until the polestar appeared at the same angle as at the home port, then "sail down the latitude" keeping the star at a constant angle. Other stars could be used similarly.
- In the 1480s, when Portuguese mariners first approached and then crossed the equator, they found that the polestar disappeared below the horizon. A conference called by the king recommended using the sun's altitude as replacement, and scholars translated from the Hebrew information about the sun's seasonal movements that made this possible.
- Arab mariners had long sailed open seas by the stars and knew how to observe heavenly bodies to help fix their position. Their knowledge and instruments of observation had filtered into Western Europe, often through Jewish intermediaries. The compass, invented in China and passed westward through the Muslim lands, was also quickly adopted. By the mid-fifteenth century, celestial observation was still not commonplace, though fairly widely known.
- The problem of how to reckon longitude was not solved until the later eighteenth century.

Guns: Protection and aggression

- With its shot weighing ounces rather than pounds, the cannons mounted on Iberian ships in the fifteenth century were more useful for killing people than sinking vessels. Placed on deck along the railing or on the castles, ships' guns could be mounted without major design changes. They had efficient uses against unarmed craft that Iberian mariners met in African and South Asian waters.
- Large, heavy cannons were already used on land. By the end of the 1400s, naval technicians attempted to adapt these to ships and use them to breach fortifications on shore. These experts solved several problems. They cut down cannon length, tapering the barrels



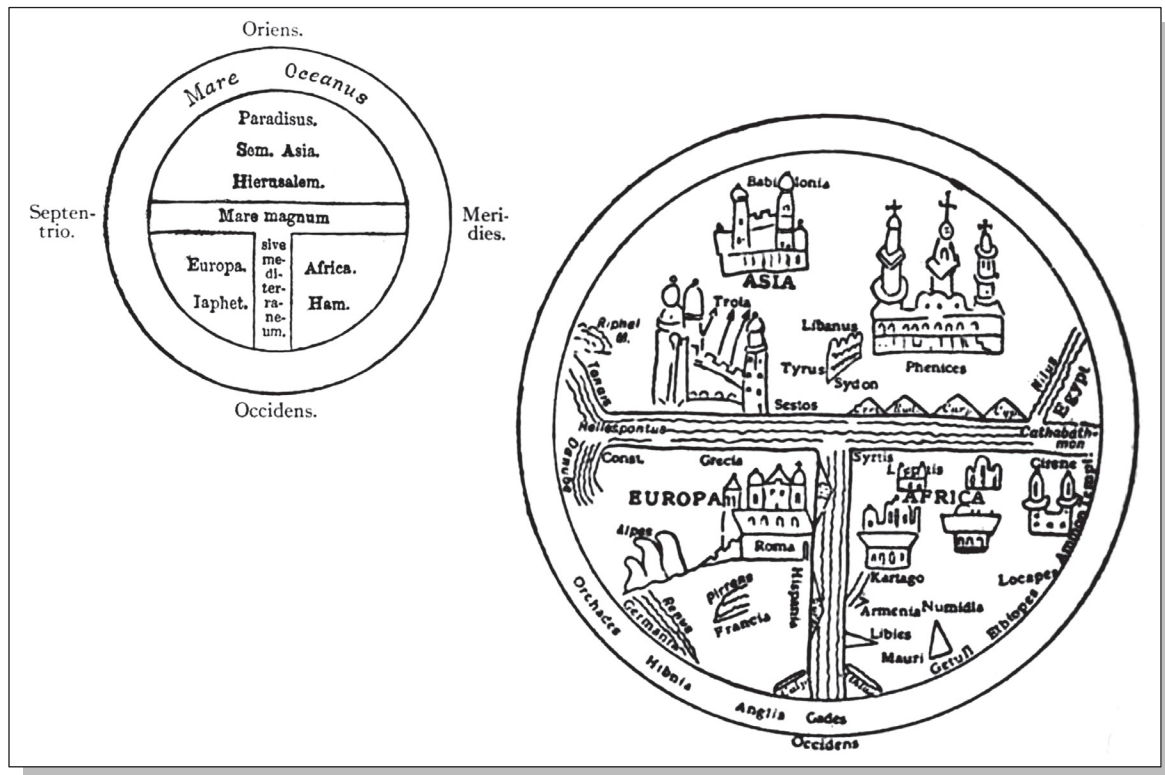
and casting them from bronze or brass instead of forging them from separate pieces of iron. This saved weight, but the guns retained enough strength to throw stone, iron, or lead balls weighing from 5 to 60 pounds. Because of their formidable recoil, these guns could not be perched on ship castles. Therefore, they were moved down to the waist of the ship and fired through round holes cut in the gunwales, their recoil controlled with ropes.

- Europeans who went overseas often had to fight. The Portuguese set up fortified commercial bases protected with cannon. In the Indian Ocean region, trained soldiers transported from Portugal served alongside men who were recruited locally. Auxiliaries from the armies of friendly rulers were also used. In preparing for his third expedition to America, Columbus asked the Spanish government for one hundred muskets and one hundred crossbows for twelve hundred soldiers, sailors, and settlers, whom he hoped to take with him. Cortés took a few light ship-cannons with him when he invaded Mexico. He had thirteen muskets for his several hundred men, and he found swords, dogs, and horses the most effective weapons. He and other conquistadors also relied heavily on native allies.
- In both the Americas and the Indian Ocean, the Iberians had a chronic problem of maintaining sufficient numbers of troops. Their own populations were small: about one million in Portugal and eight times that in Spain. In Asia and America, Iberian forces were almost always overwhelmingly outnumbered. In addition, mortality among Europeans who went overseas was consistently high. During long voyages, they died from hunger, cold, unsanitary conditions, shipwreck, and deficiency diseases like scurvy. On shore they faced fighting and tropical diseases.

How Did Ideas Change about What the World Looked Like?

DOCUMENT A

Early Medieval European World Maps



The T/O pattern.

A common arrangement on medieval world maps, the T within the O of the Ocean Sea divides Asia at the top with the horizontal spread of the rivers Don on the left and Nile on the right from Europe and Africa at the bottom. Europe and Africa are divided from each other by the vertical line representing the Mediterranean Sea. At top left is a 630 CE world map from one of the works of Isidore de Seville, a Spanish archbishop and author of an encyclopedia intended to summarize all knowledge. The sons of Noah, who, according to the Bible, peopled each of the three continents, are named (Sem, Iaphet, and Ham). At the bottom is an eleventh-century German world map illustrating a classical author's book. On both maps, east is at the top.

DOCUMENT B

“The going out of a curious man
to explore the regions of the globe”



World map by Muslim scholar and geographer Abu Abdallah al-Idrisi, 1154.

In the twelfth century, Roger II, the Christian Norman king of Sicily, showed tolerance of people of all faiths and ethnicities, and he attracted scholars of diverse backgrounds to his court. He invited Abu Abdallah al-Idrisi, an Arab Muslim scholar of wide interests, to produce an atlas of the “inhabited earth” that would be based on observation, not just on other maps and books. Al-Idrisi had traveled widely himself, certainly in Asia Minor, North Africa, and Iberia, perhaps as well as in France and England. Al-Idrisi then used travel information, as well as the works of earlier Muslim and classical scholars, to put together his atlas named *The Book of Roger*. His map is purely geographical, with no cultural or religious features, and no pictures of humans, animals, or architecture. The atlas continued to be used and adapted for some 200 years. The version of his world map shown here has been modified to change the Arabic writing on the original into English. The title of the document is a quotation from al-Idrisi’s text. South is at the top of the map.

DOCUMENT C

Noah's Ark, the Tower of Babel, and Paradise



English world map of the thirteenth and fourteenth centuries.

All that is known about the maker of this world map of ca. 1300 from Hereford, England, is that he was a priest. To make the main features of the map more legible, the editors of the source omitted the fanciful pictures of humans and animals, both natural and fabulous that are on the original. As was usual on European medieval maps, Jerusalem is placed at the center in accordance with the Bible statement that it was set “in the midst of the nations.” Projecting outside the map’s borders in four small protruding circles are the letters M O R S, the Latin word for “death.” East is at the top of the map.

DOCUMENT E

“The frivolous tales have been rejected,”
claimed the creator of this 1457 Italian world map



This anonymous map, probably produced in Genoa, has the following text on one of the many inscriptions that stud the original version: “This is the true tradition of the cosmographers, in accordance with that of the sea-charts, from which the frivolous tales have been rejected.” Like sea-charts (portolans), it incorporates ongoing first-hand experience. The representation of Asia shows the influence not only of Marco Polo, but of information from the Venetian traveler Conti, who returned in 1444 from 25 years of journeys in India and Indonesia. The notation that “In this sea they navigate without sight of the northern stars” suggests first-hand reports of this true statement from Arab, Indian, or Malay sources, since Europeans had not at this time sailed into the southern latitudes. The editors of this map’s source have adapted the original by leaving off the many human and animal figures and the inscription-bearing scrolls. North is at the top of the map.

DOCUMENT F

Ancient Innovations



Fifteenth-century world maps backed by a second-century CE authority.

Ptolemy's innovative grid system of latitudes running east-west and longitudes north-south, his instructions on how to project a globe onto a flat surface, and his establishment of the convention of placing north at the top of maps were among the roots of modern cartography. A Hellenized Egyptian scholar, he wrote his eight-volume *Guide to Geography* in the mid-second century CE. Neglected for over a millennium, it came into use by Byzantine and Arab scholars in the early fourteenth century. Translated into Latin in 1410, the *Geography* circulated in hundreds of manuscript copies in Europe, went through over forty printed editions before the end of the sixteenth century, and remained immensely influential for some 200 years. No maps from Ptolemy's original work have survived, but various scholars in the fifteenth century used his text to recreate his world map. Their many versions were alike in major features, such as the land-locked Indian Ocean, but they differed considerably in the shape of landmasses and details of coasts. Also, not all of them show the latitudes and longitudes. The above example, printed in Germany in 1493, does not. For one that does, see http://www.newberry.org/k12maps/module_01/map/core.html.

DOCUMENT G

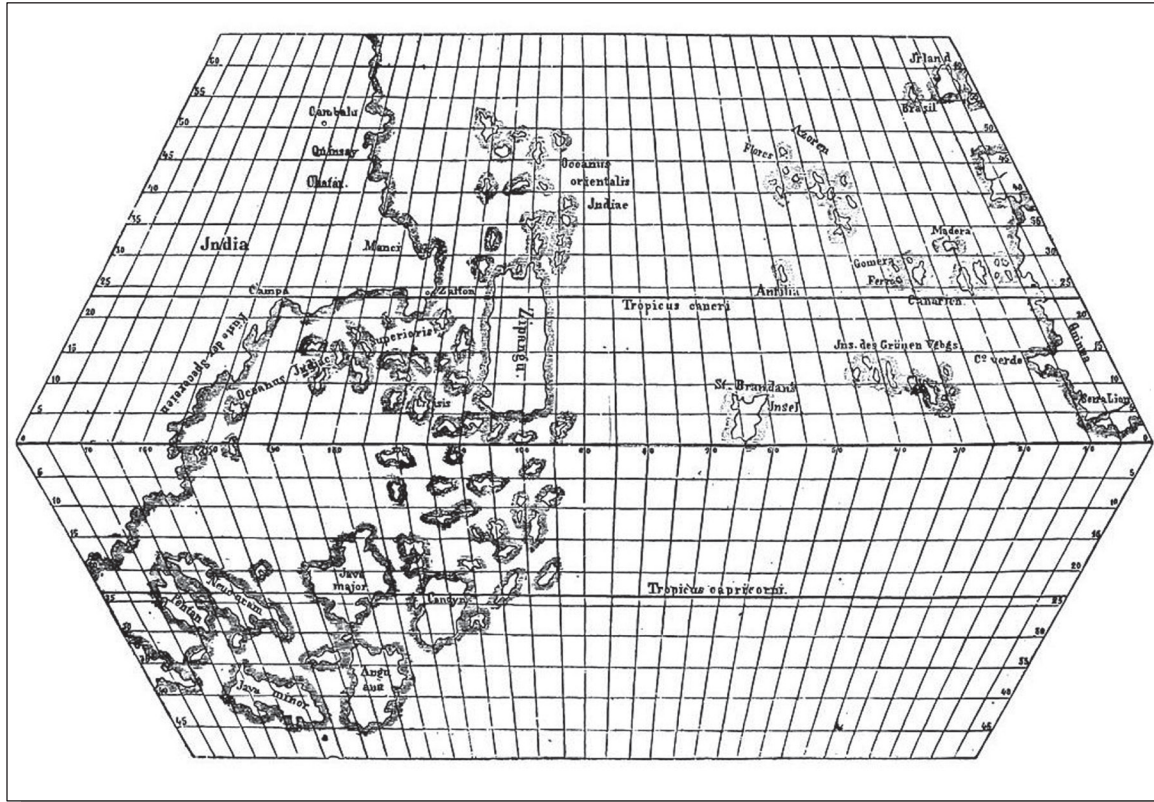
“Our knowledge of the world is now [1457]
so much greater than was Ptolemy’s”



Fra Mauro, a Venetian monk and well-known cartographer, was commissioned by the Portuguese king to draw the world map above. He explicitly discussed his sources: the latest available Portuguese sea-charts from the king, the book of Marco Polo, and the Ptolemaic model, which he chose not to follow fully because new information allowed him to correct Ptolemy. He also seems to have drawn on Arab and Indian sources. His map has south on the top—standard on Muslim maps, but unknown on any other western one. It shows (if somewhat inaccurately spaced) Indian locations significant for regional trade: Diu, Chalecut (Calicut), Goga (Goa), and Guzirai (Gujarat). There is no Biblical history depicted, excepting “Acha Noe,” that is, Noah’s Ark, located at the head of the Tigris river. South is at the top of the map.

DOCUMENT H

The Proposed Western Route to the East Pictured



Reconstruction of Toscanelli's 1474 map showing the Atlantic Ocean.

Florentine physician, mathematician, astronomer, and geographer Paulo Toscanelli (1397–1482) studied the writings of Marco Polo and of Ptolemy. He also collected personal information from merchants, mariners, and travelers such as Conti. He concluded that the East to West stretch of Europe and Asia covered nearly two-thirds of the entire earth. In 1474, Toscanelli proposed a way of reaching the Spice Islands by sailing west, thereby avoiding the long voyage around the tip of Africa. He wrote the Portuguese king a letter giving directions for doing so, and he enclosed a map. Copies of both were sent to Columbus, who took them with him on his first voyage. The map no longer exists, but it has been reconstructed based on the letter and on two other maps of Toscanelli's time that embodied his ideas.

LESSON 2

Conquest of the Oceans: Where, How, and Why?

Activities

Teachers should note that sharing with students the questions they will be asked to answer and the activities they will be asked to do *before* they begin to work with the student handouts may serve their historical knowledge and understanding.

Ask students to respond to the following:

1. Ask students to find answers to the questions below concerning the five documents in Student Handout 1.2.2. Students should record their answers as short notes. For easy comparison, constructing a grid with the five documents along one axis and the eight questions along the other works well.
 - a. Note that:
 - i. Answers may be found in the head notes as well as in the original sources.
 - ii. Some documents deal with more than one voyage.
 - iii. In some documents no answer can be found to one of the questions.
 - b. Who ordered or authorized the voyage? “Who” refers to their position, not their name, for example, “principal,” not “Affonso Gonzales.”
 - c. What reasons were given for making the voyage?
 - d. How was the voyage paid for?
 - e. What human and material resources did the voyagers have? Consider such things as qualifications of leaders, size of crews and ships, number of vessels and guns.
 - f. What were the voyagers’ attitudes toward the people they met? Consider that some voyagers had different attitudes in different places or circumstances.
 - g. What evidence is there of trade with the people they met during landings?
 - h. What human and other problems did they meet? Consider such things as behavior of those they met and of their own associates, and their experiences with their environment.
 - i. Who benefited from the voyage and in what ways?
2. Ask students if they had to choose the two voyages that were most similar, and the two most different, which would they choose? Have them explain on what basis they made their choices. What hypotheses might students come up with about reasons for the differences and similarities they have identified, and what evidence can they give to support them? What questions might students ask that would either further support or cast doubt on their hypotheses?

3. To encourage understanding of change over time, ask students to compare the Portuguese voyages of 1415 to 1460 on the one hand with those of Columbus and da Gama between 1492 and 1502 on the other. What conditions and circumstances changed between these two periods? Consider any differences in motives for the voyages, in authorization, in leadership, in financing, in resources, and in benefits. What reasons might students give for the differences?
4. Ask students whether the thirty-year Chinese long-distance maritime expeditions of the 1400s left any lasting influence in the Indian Ocean region. What kind of influences might the Chinese expeditions have had? If no lasting influence, why not? Students should support their analysis with information from Student Handout 1.2.2, Document A.
5. Ask students what kinds of influence the thirty-year Iberian long-distance maritime expeditions starting in 1492 had on the Indian Ocean region, Africa, and the Americas. What do students consider the two most important influences? Why? How might they decide on the relative importance of various influences? Students should support their analysis with information from Student Handout 1.2.2, Documents C, D, and E.
6. Asks students to construct a conversation between one of the following pairs of individuals as it might have taken place about 1505:
 - a. A Muslim merchant from an East African coastal city planning to join a Portuguese spice-buying fleet going from India to the Moluccas, and his senior wife, who tries to talk him out of going.
 - b. A would-be leader of a seafaring expedition from Europe to India in search of spices, who is looking for royal financing, and the king he is trying to talk into awarding the funding. The king presents doubts and objections. In creating the arguments the merchant and the king make for sponsoring the expedition, students should use information from Student Handouts 1.2.1 and 1.2.2.
7. Ask students to assume that they are serving on a panel charged with choosing a “hero of the long-distance maritime voyages between 1400 and 1550” to be featured in a *Time* magazine cover article. If students’ only choices were the people in the documents of Student Handout 1.2.2, whom would they nominate? Students should justify the nomination to *Time*’s editors by explaining their reasons for their choice with supporting evidence from the documents, and by explaining their definition of “hero.” Alternatively, they might explain why they would not choose anyone from the documents in Student Handout 1.2.2.

8. Ask students to compare and contrast the responses of 1) natives of the West Indies to Columbus and his crew on their first transatlantic voyage, and 2) East African coastal city-dwellers to Vasco da Gama and his crew on their first voyage to the Indian Ocean. Remind students that the responses may vary from one person to another. Give evidence for your arguments by reference to the documents.
 - a. What might help explain different reactions?
 - b. What might cause us to wonder about the reliability of the Europeans' reporting about how the natives reacted?
 - c. In what ways, if any, did native responses influence the voyagers' actions?
9. **This activity might serve as an assessment.** Ask students to consider:
 - a. If all you had to go on were the five primary source documents (without the head notes) in Student Handout 1.2.2, what evidence would you present to defend, and what evidence to oppose, the following statement: "The best answer to the question of why long-distance sea voyages were undertaken in the 1400 to 1550 period is: *for God, gold, and glory.*" Given the evidence you present, how might this statement be revised?
10. **This activity might serve as an assessment.** Ask students to consider:
 - a. Assume you are in charge of putting together a "Handbook of First Contact" for Iberian mariners who led expeditions to parts of the world little known or unknown to them during the period 1490 to 1525. Outline the advice you would give about what should be done and why, and what should be avoided and why, drawing on the experiences described in Student Handout 1.2.2. Explain why you consider that your advice would have positive results and avoid negative consequences.
11. Ask students to consider on what basis they would question, on what basis defend, the reliability of the documents in Student Handout 1.2.2 for making judgments about what motives people really had for making the 1400 to 1550 long-distance oceanic voyages?

Extension Activities

1. Ask students to give examples of the kinds of people thought of as heroes in America today.
 - a. What are the characteristics that make them heroes? Are these the same characteristics that students used in their definition of "hero" for the *Time* magazine article (Activity 9 above)?
 - b. What, if any, are the differences? Is today's definition of a "hero" the same as it would have been in colonial America? What, if any, are the differences? Does the definition of a "hero" change with time and/or place? Ask students to give examples to support their arguments.

2. Ask students to compare the voyages described in Student Handout 1.2.2 with those of Ibn Battuta (fourteenth century) or Marco Polo (thirteenth century). What was there about some of the former that contributed to their greater consequences? Were Ibn Battuta or Marco Polo “explorers” in the sense that Columbus and Vasco da Gama were? This activity involves research.
3. Ask students to compare the twentieth-century U.S. program of getting a person on the moon to that of getting people to sources of spices and gold by sea in the fifteenth and sixteenth centuries. Students should consider comparatively why these projects were undertaken, the ways they were paid for, the problems they encountered, and who benefited. This activity involves research.

The Flow of Maritime Trade and Travel, 1400–1550

- Before America became linked to the rest of the world, Europe held a geographical position on the western edge of a complex maritime shipping network carrying people, goods, information, and ideas throughout Afroeurasia.
- The network connected most sea-bordered parts of Afroeurasia from the Asian rim of the Pacific Ocean to the shores of the Indian Ocean, East Africa, the Red Sea, the Persian Gulf, and then overland to the eastern and southern coasts of the Mediterranean. From there, it took additional travel by sea or by land to reach the various countries of Europe.
- China and India dominated Asian commerce in the fifteenth century and well beyond. They had the biggest populations, generated the most economic wealth, offered the largest markets, and had the largest volume of exchanges.
- Much of the trade in the network was local, carrying everyday bulk commodities like grain, salt, fish, textiles, and timber. Long-distance maritime trade focused on high value and luxury items, such as gold and silver, cowrie shells (used as currency in parts of India and Africa), precious stones, ivory, pearls, porcelain, silk, and spices.
- Chinese ships mostly serviced the routes between Japan, China, and Indonesia. Those between Indonesia, Sri Lanka (Ceylon), and India were mostly in Indian and Malay hands. People of many belief systems took part—Muslims, Buddhists, Hindus, Jews, Christians, animists, and ancestor-worshippers. Muslim traders from Egypt, Turkey, Persia, and East Africa at times joined the annual spice-buying voyages setting out from India. These brought back to India nutmeg and cloves from the Spice Islands (Moluccas), pepper from Sumatra and Thailand, cinnamon from Sri Lanka, and porcelain and silk from China, along with other merchandise.
- From Indian ports to the Red Sea, the Persian Gulf, and East Africa, mostly Indian, Arab, Persian, and East African shippers transported spices and other cargoes that had already arrived in India from elsewhere, along with pepper from Malabar (southwest India), textiles, and other Indian products. In return they picked up horses, pearls, ivory, slaves, and local specialties.
- Muslim Arab, Persian, Jewish, and Armenian traders moved goods overland and by sea across Southwest Asia (Persia and Syria) to distribution ports in Egypt and other areas of the eastern Mediterranean coast.
- From there, Venetian, Genoese, Florentine, Catalan, and other European merchants carried goods on to consumers in western and northern Europe.
- The average sailing time in the fifteenth century from Canton (China) to the Persian Gulf was about three-and-a-half months. With stops for provisioning, waiting for favorable winds, and trading, the actual trip took almost double that time. Added was the time taken for overland caravan trips across Southwest Asia to the Mediterranean,



plus three more months for the trip by sea from there to northern Europe. Merchants typically specialized in one segment, or circuit of the trade, relaying goods from one trading group to another.

- About 1500, sailing time from Portugal to the west coast of India around Africa took an average of 180 days. The return took about 200 days. Including time in ports, the roundtrip took a total of 500 days.
- In comparison, sailing time from Spain to America in the sixteenth century varied between 39 and 175 days, and the return trip from 70 to 298 days.
- Regular crossings of the Pacific did not begin until after 1550, when European mariners better understood the wind patterns.

What Did Mariners Find on Long-Distance Voyages in the Fifteenth and Early Sixteenth Centuries?

DOCUMENT A

Treasure Fleets of the Dragon Throne: The Middle Kingdom Reaches Out

Zheng He, Muslim eunuch and confidant of the Chinese emperor, organized six long-distance naval expeditions to the south and west of China from 1403 to 1433. Each involved thousands of men, including professional negotiators, diplomats, interpreters, scribes, signalers, doctors, soldiers, mechanics, and other specialists. The fleet consisted of over one hundred auxiliary ships, including troop and supply carriers and forty to sixty “treasure ships.” These were estimated to weigh some 1,500 tons and range up to 400 feet in length, with three decks, nine masts, twelve sails, and watertight compartments to keep them afloat even when damaged. Besides ample supplies, they carried Chinese trade goods.

Their destinations, ports in India, Arabia, and East Africa, were not unknown. There is evidence that Chinese in earlier centuries sailed regularly to India and occasionally to the Persian Gulf, and they knew about East Africa at least from hearsay. Zheng He himself had made the pilgrimage to Mecca.

Having generally followed a contemporary’s advice to “treat the barbarian kings like harmless seagulls,” the expeditions traveled over 30,000 miles and returned with “wonderful precious things,” among them a giraffe. With no need for ongoing supplies from abroad, no desire for conquest at a distance, and no cultural tradition of proselytizing, they built no forts and left neither garrisons nor naval patrols.

Some Confucian government officials opposed the long-distance voyages as a waste of money, especially since deforestation at this time raised the costs of shipbuilding. They felt the government would do better to invest in containment of belligerent Mongols and other pastoral peoples who lived along China’s northwestern frontier. In fact, nomad raids were not uncommon, so these officials had good reason for concern. Confucian bureaucrats also feared that the court eunuchs, a powerful political faction, were threatening their power and influence. Consequently, the Ming government banned further large-scale maritime expeditions to the Indian Ocean after 1433, though Chinese trade in the East and South China seas continued.

The following account of Zheng He’s voyages is from an inscription on a stone he ordered erected in the winter of 1431–32. The last paragraph is from a different inscription.

The Imperial Ming Dynasty, in unifying seas and continents, surpasses [earlier] dynasties. The countries beyond the horizon and at the ends of the earth have all become subjects and to the most western of the western, or the most northern of the northern countries, however far they may be, the distances and the routes may [now] be calculated. Thus the barbarians from beyond the seas, though their countries are truly distant . . . have come to audience bearing precious objects and presents.

The Emperor, approving their loyalty and sincerity, has ordered us [Zheng He] and others at the head of several thousands of officers and troops to [board] more than a hundred large ships to go and confer presents on them, in order to [make clear] the transforming power of the imperial virtue, and to treat distant people with kindness. From [1405] until now, we have several times been appointed ambassadors to the Western Ocean. The barbarian countries we have visited are [among others, Java, Siam, Ceylon, Calicut in India, Aden on the Red Sea, and Mogadishu in East Africa], all together more than thirty countries large and small.

We have crossed more than one hundred thousand li of immense water spaces, and have seen in the ocean huge waves like mountains rising sky-high, and we have set eyes on barbarian regions far away hidden in the blue transparency of light vapors, while our sails, loftily unfurled like clouds, day and night continued their course, crossing those savage waves as if we were treading a public thoroughfare.

Those among foreigners who were resisting the transforming influence of Chinese culture and were disrespectful, we captured alive, and brigands who indulged in violence and plunder, we exterminated. Consequently the sea route was purified and tranquillized and the natives were enabled to pursue their vocations.

Source: Qtd. in Joseph R. Levenson, *European Expansion and the Counter-Example of Asia, 1300–1600* (Englewood Cliffs, NJ: Prentice-Hall, 1967), 14–15. Last paragraph qtd. in Michael Pearson, *The Indian Ocean* (New York: Routledge, 2003), 90.

DOCUMENT B

Sailing, Raiding, and Trading on the Guinea Coast: Portugal's Prince Henry Orders Ships to Explore the African Shore

Starting about 1415, Prince Henry, often called The Navigator, consistently sent out two or three ships a year to sail as far south along the western shore of Africa as they could. Captained typically by courtier “gentlemen of his household,” they averaged about fifty tons, and needed crews of only twenty-five sailors. He financed the enterprise from the king’s grant to him of a 20 percent share in all profits from any voyages to West Africa, from the sale of licenses to do so, and from his income from sugar plantations on the island of Madeira. In spite of these resources, he was in debt, owing his bastard half-brother 35,478 crowns of gold, an obligation not paid off until after his death in 1460.

By this time, some fifty ships had passed south of Cape Bojador on the coast of the western Sahara Desert. Twenty years later, a dozen or so Portuguese ships a year made the voyage to West Africa’s Gold Coast, cutting into the profits of the Muslim merchants who had monopolized the traditional trans-Saharan gold routes to the Mediterranean coast. Each ship carried some 700 kilos of gold to Portugal, as well as slaves, ivory, a spice similar to pepper, and other merchandise. For these, the Portuguese traded textiles, iron, brass, glass, and hardware.

The gold was sorely needed in Europe to pay for Asian luxuries in high demand there. By contrast, demand in India and China for European goods was sluggish at best, so payment had mostly to be made in gold.



From about 1460 on, the Portuguese cultivated friendly relations with the powerful rulers of West African kingdoms as a matter of policy. Their lively trade with the locals, which during the second half of the fifteenth century seemed to have been satisfactory to both parties, centered on the forts of Arguin and Elmina that they had built on the coast. To protect the West African trade and its profits, the king decreed in 1481 that any foreign ship visiting the Guinea coast without his license could be sunk or captured, no questions asked, and the crew thrown to the sharks.

The Portuguese historian Azuarara was charged by his king to write a record of the discovery and conquest of Guinea (West Africa). The events he describes all took place before 1450, when he finished the account from which the following excerpts are taken. Note that the Portuguese called all Muslims “Moors.”

After the taking of Ceuta [in Muslim North Africa, 1415] he always kept ships well armed against the Infidel, both for war, and because he had a wish to know the land that lay beyond Cape Bojador, for up to his time [nothing] was known with any certainty about the land beyond that Cape. [Muslim knowledge extended little further, nowhere near Africa’s southern tip.] . . . Since it seemed to him that without knowledge no mariners or merchants would ever . . . sail to a place where there is not a sure . . . hope of profit, he sent out his own ships.

If there chanced . . . to be havens into which it would be possible to sail without peril . . . the products of this realm might be taken there, which traffic would bring great profit to our countrymen.

[Also] he sought to know if there were in those parts any Christian princes, [who] would aid him against the enemies of the faith. [Moreover, it] was his great desire to make increase in the faith of our Lord Jesus Christ and to bring to him all the souls that should be saved.

But over and above these reasons [is] the root from which all others proceeded: . . . the inclination of the heavenly bodies. . . . Because his ascendant was Aries, which is in the house of Mars . . . [which] was in Aquarius . . . and in the mansion of hope, it signified that this Lord should toil at high and mighty conquests.

So the Prince began to make ready his ships and his people . . . but although he sent out many times . . . there was not one who dared to pass that Cape of Bojador and learn about the land beyond it. . . . [They believed] hindrance to the passage into these lands consisted of very strong currents . . . on account of which it was impossible for any ship to navigate those seas; . . . that the lands were all sandy and without any inhabitants . . . [and] that the shores were so shallow that [ships would not] have sufficient depth for their management. . . . Being satisfied of the peril, and seeing no hope of honor or profit, they left off the attempt.

[It was not until 1434 that, having gradually crept south along the West African coast by sending out yearly regular exploring ventures of two or three ships of 20 to 50 feet in length, a Portuguese ship managed to get past Cape Bojador into territory until then unknown to Europeans].

All the land from the Mediterranean Sea as far as the land of the Negroes [is] peopled by shepherd folk. . . . They make war with the Negroes more by thieving than by force, for they have not so great strength as these last. And to their land come some Moors and they

sell them of those Negroes whom they have kidnapped, or else they take them . . . beyond the kingdom of Tunis [in North Africa] to sell to the Christian merchants who go there . . . in exchange for bread and some other things. . . . The men of rank possess abundant gold which they bring from the land where the Negroes live. . . . [Their wives] wear rings of gold in their nostrils and ears, as well as other jewels.

[In 1441, one of Prince Henry's nobles] armed a very fine caravel [to sail past Cape Bojador. The Prince] ordered him to have regard to no other profit, save only to see and know any new thing that he could. And he was not to [make] raids in the land of the Moors, but to take his way straight to the land of the Negroes and thenceforward to lengthen his voyage as much as he could. [Another purpose of the voyage was] to ship a cargo of the skins and oil of sea-wolves [seals]. [When they had loaded this, the captain called together the 21 men on the ship, and said:]

"We have already got our cargo . . . and may well turn back, . . . but O how fair a thing it would be if we, come to this land for a cargo of such petty merchandise, were . . . to bring the first captives before the face of our Prince . . . getting knowledge by that means. And as to our reward, you can estimate what that will be by the great expense and toil he has undertaken in years past, only for this end. [This captain made several voyages to the "land of the Negroes," also known to the Portuguese as "Guinea," and was the first to bring back both captives and gold dust from West Africa to Portugal. Traffic in slaves accelerated from then on.]

[In 1446, having been granted a license by Prince Henry to travel to West Africa, a Portuguese] made him ready two caravels, one decked and the other a fishing-boat, in which were twenty men. "Let us go" [he said] "to the . . . river where I promised the Moors the year before that I would come and traffic." . . . After three days were passed, the Moors began to arrive, and [he] began to speak with them by means of his interpreters, asking them to have some Guineans brought there, in exchange for whom he would give them cloth.

[The same year, pitched battles were fought between the natives and Portuguese seamen. The latter's captains addressed their men before the battle.] "It is for war, and war alone, that we are come to this land; and this being so, we must not be timid, for if we fight our battle by day it will be much more to our honor than if we fight by night, attacking the Moors . . . and expelling them by sheer force of arms rather than by any cunning or stratagem." . . . The Christians, besides the desire they had to get at them, when they saw their behavior, which was that of enemies who despised them, felt doubly eager to fight. . . . The enemy . . . boldly trusting in their multitude, [thought] that victory would hasten to them as it had come the other day when they slew the seven men from the other [Portuguese] caravels. . . . The Christians, in order to gain the land, and the Moors in order to prevent them, began their fight, plying their lances, by which there could well be seen the hatred there was between them. But the fight on the part of the Moors was not so much from enmity as in defense of their women and children, and still more for the salvation of their own lives. Our men wondered greatly at the courage they perceived in their enemies . . . Yet, God being willing to aid His own, they slew out of hand sixteen and the others were routed.

. . . [We] took fifty-seven of them, and with them returned to the caravels.

It remains for me to fix the certain number of souls of infidels who have come from those lands to this, through the virtues and talents of our glorious Prince. And I counted these souls and found they were nine hundred twenty and seven, of whom . . . the greater part were turned into the true path of salvation. . . . After this year [1448] the affairs of these parts [West Africa] were henceforth treated more by trafficking and bargaining of merchants than by bravery and toil in arms.

Source: Charles Raymond Beazley and Edgar Prestage, trans. and eds., *The Chronicle of the Discovery and Conquest of Guinea*, by Gomes Eannes de Azuarara (London: Hakluyt Society, vol. 1, 1896, vol. 2, 1899), 1:27–30, 40–41, 109; 2:163–70, 225, 230–35, 267–68, 288–89.

DOCUMENT C

“This is the first voyage and the routes taken by the Admiral Don Cristóbal Colón when he discovered the Indies”

Before his voyages across the North Atlantic, Columbus had lived in port cities in Italy, Spain, and Portugal. He had sailed with at least one of the Portuguese voyages to Guinea, and he married into a family of cartographers. He spent nearly a decade seeking royal funding for his own plan to access Asia by sailing west. His conviction that he could get there by his novel way was based on a miscalculation of the earth’s circumference and on authorities of the time that assumed a narrow and island-studded Atlantic. He did not figure on stumbling across a whole continent between Europe and Asia.

Spain’s monarchs financed his enterprise with funds freed up by the victorious outcome of their war against Moorish Granada, and with loans from a Genoese banker. In addition, the town of Palos, from where he departed, had to provide him (as a penalty for some crime against the crown) with a crew of ninety, which included two pilots, two physicians, a surgeon, and an interpreter who spoke Arabic and Hebrew. He had three ships, estimated to have been between 50 and 100 tons and 50 to 60 feet long. One of these ships was lost during the first voyage. During his following three voyages, Columbus was to lose eight more ships. His contract with the crown, however, assured him “one-tenth of any merchandise bought, found, or acquired in any mainland and islands he may discover in the sea,” after deducting expenses. Nine-tenths went to the crown.

Crossing the Atlantic, he was out of sight of land for thirty-three days, amazing in a time when mariners were used to navigating largely by observing landmarks.

After the first voyage, Columbus’s mandate from Spain’s rulers changed from seeking converts, alliances, and trade to settlement and exploitation. For instance, from 1495 on, every native Hispaniolan over fourteen years old had to pay tribute money to the Spanish king and owed compulsory labor services in mines or on plantations to individual Spaniards.

The excerpts below from Columbus’ Journal were condensed by its sixteenth-century editor. Those in quotation marks were claimed to be words that Columbus spoke or wrote.

“In the name of our Lord Jesus Christ.

Acting on the information that I had given to your Highnesses [the King and Queen of Spain] touching the lands of India, and respecting Gran Can [Great Khan, title of Mongol rulers in China] . . . your Highnesses as . . . Princes who love the holy Christian faith, and the propagation of it, and who are enemies to the sect of Mahoma . . . resolved to send me, Cristóbal Colón, to . . . India to see the said [ruler], and the cities and lands, and their disposition, with a view that they might be converted to our holy faith . . . and that I should go by way of the west, whither up to this day, we do not know for certain that any one has gone.”

Tuesday, 25th of September [1492]

[Having been under way since August 3rd, this day] the Admiral [Columbus] conversed with . . . the captain of the *Pinta*, [about a map, Document H, which showed islands in that area of the sea they were currently in. Though they not only thought their ships ought to be where islands were shown, but even thought they saw land, it was not so.] That day they made 4 leagues [at the time a league was usually counted as four miles] . . . and 17 during the night. . . . But the people were told that 13 was the distance . . . for it was always feigned to them that the distances were less, so that the voyage might not appear so long.

Wednesday, 3rd of October

They saw no birds. The Admiral therefore thought that they had left the islands behind them which were depicted on the charts.

Sunday, 7th of October

They passed a great number of birds flying from N. to S.W. This gave rise to the belief that the birds were . . . going to sleep on land. . . . The Admiral was aware that most of the islands held by the Portuguese were discovered by the flight of birds.

Wednesday, 10th of October

They made 59 leagues, counted as no more than 44. Here the people could endure no longer. They complained of the length of the voyage. But the Admiral cheered them up . . . giving them good hope of the advantages they might gain from it. He added that however much they might complain, he had to go to the Indies, and that he would go on until he found them, with the help of our Lord.

Thursday, 11th of October

They saw sandpipers, and . . . a bit of cane, a land plant . . . and a small branch covered with berries. . . . At two hours after midnight the land was sighted. . . . Presently they saw naked people. The Admiral went on shore in the armed boat . . . took the royal standard, and the captains . . . and said that they should bear faithful testimony that he . . . now took possession of the said island for the King and for the Queen. . . . Presently many inhabitants of the island assembled. . . . “I,” [said the Admiral] “that we might form great friendship, for I knew that they were a people who would be more easily . . . converted to our holy faith by love than by force, gave to some of them red caps, and glass beads to put around their necks, and many other things of little value, which gave them great pleasure. . . . They should be



good servants and intelligent, for I observed that they quickly took in what was said to them, and I believe that they would easily be made Christians. I . . . will take hence, at the time of our departure, six natives for your Highnesses, that they may learn to speak.”

Saturday, 13th of October

“The people are very docile. . . . They give away all they have got, for whatever may be given to them, down to broken bits of crockery and glass.”

Sunday, 14th of October

“These people are very simple as regards the use of arms, as you Highnesses will see from the seven that I caused to be taken, to bring home and learn our language and return; unless your Highnesses should order them all to be brought to Castile, or to be kept captives on the same island; for with fifty men they can all be subjugated and made to do what is required of them.”

Friday, 19th of October

“There are villages in the interior, where, the Indians I bring with me say, there is a king who has much gold. . . . I do not give much faith to what they say, as well because I do not understand them as because they are so poor in gold that even a little . . . would appear much to them.”

Sunday, 21st of October

“I shall . . . shape a course for another much larger island, which I believe to be Cipango [Japan], judging from the signs made by the Indians I bring with me. . . . According as I obtain tidings of gold or spices. . . . I am still resolved to go to the mainland and . . . deliver the letters of your Highnesses to the Gran Can requesting a reply.”

Wednesday, 24th of October

“I intended to go to the island of Cuba, where I heard of the people who . . . had gold, spices, merchandise, and large ships. . . . I believe that it is so, as all the Indians . . . told me by signs. I cannot understand their language, but . . . on the map of the world [see Toscanelli’s map, Document H], Cipango [Japan] is in this region.”

Monday, 12th of November

“I . . . seized seven women, old and young, and three children. I did this because the men would behave better in Spain if they had women of their own land. . . . For on many occasions the men of Guinea have been brought to learn the language in Portugal, and afterwards, when they returned, and it was expected that they would be useful in their land, owing to . . . the gifts they had received, they never appeared after arriving.”

Tuesday, 25th December

It pleased our Lord that, at twelve o’clock at night, when the Admiral had retired to rest, and when all had fallen asleep, seeing that it was dead calm and the sea like glass, the tiller being in the hands of a boy [though the Admiral had forbidden this], the current carried the ship on one of the sand-banks. . . . Then the timbers opened and the ship was lost.

Wednesday, 26th of December

The Admiral . . . knew our Lord had caused the ship to stop here, that a settlement might be formed. . . . “For it is certain that, if I had not lost the ship. . . . I should not have left people in the country during this voyage, [though] many people had asked me to give them leave to remain. Now I have given orders for a tower and a fort . . . with provision of bread and wine for more than a year, with seeds for sowing, the ship’s boat, a . . . carpenter, gunner and cooper [and forty-four men].” He trusted in God that, when he returned from Spain . . . he would find a ton of gold collected by barter by those he was to leave behind, and that they would have found the mine, and spices in such quantities that the Sovereigns would . . . be able to . . . fit out an expedition to go and conquer the Holy Sepulcher.

Wednesday, 16th of January [1493]

The wind freshened from a quarter which was very favorable for the voyage to Spain. The Admiral had noticed that the crew were downhearted when he deviated from the direct route home, reflecting that both caravels were leaking badly, and that there was no help but in God. He therefore . . . shaped a direct course for Spain.

Friday, 15th of March

At noon, with the tide rising . . . they reached the port [in Spain] which they had left on the 3rd of August of the year before [having been absent 225 days].

Source: Clements R. Markham, trans. and eds, *The Journal of Christopher Columbus, During His First Voyage, 1492–9* (London: Hakluyt Society, 1893), 15, 16, 28–29, 32–8, 40–41, 52–53, 55, 57, 75, 119, 133–34, 137–39, 165, 192.

DOCUMENT D

Breaking into the Eastern Spice Trade: An All-Sea Route to India Becomes Possible

That India was on the other side of Africa and washed by a sea was known. That this sea connected to the Atlantic was in doubt until 1488. That year, the Portuguese mariner Dias, with his two fifty-ton ships, was unknowingly blown past the Cape to the east coast of Africa by a storm. A near-mutiny of his crew caused him to turn back soon after, but he had proved that the eastern end of the Atlantic was not land-locked. Leaving Portugal nearly ten years later, Vasco da Gama dealt with a mutiny near the same place by putting the ringleaders in chains and continued on to sail all the way to India.

Da Gama had learned navigation serving in the navy, and he was an experienced seaman. His voyage was financed in part with the confiscated property of the Jews and Moors expelled by the king in 1495. At first, his mandate from the king was to find direct access to spice suppliers. He had four ships, the largest 300 tons with twenty cannon, and 170 men, Dias among them. Of these, only two ships and fifty-five men returned in 1499.



In 1502, the Portuguese king named da Gama “Admiral of India . . . throughout the territories which shall be placed under [our] rule.” On his voyage that year, two Franciscan friars accompanied him as missionaries. His mandate this time was to “show the flag” in the East with a display of military might, strike against Muslim fleets and centers of trade, and gain a monopoly of Indian Ocean trade. This led him to attack Muslim ships whenever he could and to intimidate rulers around the Indian Ocean with threats and violence. He raided and killed inhabitants of fishing villages, locked pilgrim passengers into the hold before setting their ship on fire, and bombarded the towns of those resisting his demands.

Of his twenty-three ships, ten belonged to the king, and thirteen to wealthy merchant investors. By a royal decree of 1500, the latter owed the crown one-fourth of the value of the cargo they brought back, but they could still more than double their investment. Soon, the spice trade became a royal monopoly. Da Gama’s share of profits on this voyage was ten hundredweights of pepper worth 800 ducats (a ducat was worth about sixty grams of gold) and each sailor’s, half a hundredweight. He left half his fleet in India to protect the coastal trading posts he had set up, and to patrol Indian waters. The intent was to enforce a policy whereby any non-Portuguese ships in the Indian Ocean had to buy a Portuguese license to operate there, or be liable to losing their cargo, ship, and lives.

The following selections are from the journal of a crewmember, who described da Gama’s first Europe-to-India all-sea voyage. It involved sailing about 27,000 miles, some ninety days and 4,000 miles of it out of sight of land.

We left [Portugal] on Saturday, 8th July 1497. May God our Lord permit us to accomplish this voyage in his service. Amen!

On Thursday, 3rd August [1497] we left [the Cape Verde islands. On November 4th] we tacked so as to come close to land, but as we failed to identify it, we again stood out to sea. [Some days later] we landed with the captain-major, and made captive one of the natives, [then] had him well dressed and sent ashore. On the following day fourteen or fifteen natives came to where our ships lay. . . . [We] showed them a variety of merchandise, with a view of finding out whether such things were to be found in their country. This merchandise included cinnamon, cloves, seed-pearls, gold, and many other things, but it was evident that they had no knowledge whatever of such articles. . . . Having careened our ships and taken in wood, we set sail.

At that time we did not know how far we might be [from] the Cape of Good Hope. . . . We therefore stood out towards the south-south-west, and late on Saturday [18th November] we beheld the Cape. [Contrary winds prevented their rounding the Cape until the 22nd November]. . . . By Christmas Day . . . we had discovered seventy leagues of coast [beyond the furthest northeast that Dias had got to in 1488]. . . . Drinking water began to fail us, and our food had to be cooked with salt water. Our daily ration of water was reduced to [a cup-and-a-half].

11th January [1498] . . . we went close to shore, and saw a crowd of negroes. . . . The Captain- major [da Gama] ordered Martin Afonso, who had been a long time in Manicongo [kingdom about 1000 miles by sea south of Guinea] to land. . . . The chief [there] said that we were welcome to anything in his country of which we stood in need: at least, this is how Martin Afonso understood him. . . . Two gentlemen of the country came

to see us. They were very haughty, and valued nothing which we gave them. . . . A young man in their company—so we understood from their signs—came from a distant country, and had already seen ships like ours.

The people of this country [near Mozambique] are Mohammedans. . . . They are merchants, and have transactions with white Moors [Arabs] four of whose vessels were at this time in port, laden with gold, silver, cloves, pepper, ginger [and precious stones]. . . . We understood them to say that . . . where we were going . . . there was no need to purchase them as they could be collected in baskets. All this we learned through a sailor . . . who, having formerly been a prisoner among the Moors, understood their language.

The captain-general [presented the Sultan of Mozambique with] hats, [gowns], corals, and many other articles. He was, however, so proud that he treated all we gave him with contempt, and asked for scarlet cloth, of which we had none. . . . The captain-major . . . begged him for two pilots to go with us. He at once granted this request.

The lord of the place [a close-by port] sent many things to the captain-major. All this happened at the time when he took us for Turks or Moors from some foreign land. . . . But when they learnt that we were Christians they arranged to seize and kill us by treachery. . . . We forthwith armed our boats, placing bombards in their poops, and started for the village. . . . Our bombards soon made it so hot for them that they fled. . . . On 29th March we left.

[On April 7th] . . . we cast anchor off Mombasa. . . . [The pilots from Mozambique had misled the Portuguese, promising them a friendly welcome in Mombasa.] At midnight there approached us a [boat] with about a hundred men, all armed with cutlasses. . . . They attempted to board . . . but this was not permitted. . . . It seemed to us [they just wanted] to find out whether they might not capture one or the other of our vessels. [The two pilots jumped into the water, and were picked up by the native boat.] At night the captain-major ‘questioned’ two Moors whom we had on board, by dropping boiling oil upon their skin, so that they might confess any treachery intended against us. They said that orders had been given to capture us . . . to avenge what we had done at Mozambique. And when this torture was applied the second time, one of the Moors, although his hands were tied, threw himself into the sea whilst the other did so during the morning watch. About midnight two [boats] with many men in them approached. [Some swam to our ships and] began to cut the cable, [and] got hold of the rigging. [Being discovered,] they fled.

[After we left,] we saw two boats . . . in the open sea, and at once gave chase, with the intention of capturing them, for we wanted to secure a pilot who would guide us to where we wanted to go. [They captured seventeen men, gold, silver, provisions, and the young wife of “an old Moor of distinction.” All tried to escape by jumping into the water but were recaptured. Thirty leagues from Mombasa, they anchored in Malindi.]

The Moors whom we had taken in the boat told us that there were at this city . . . four vessels belonging to Christians from India, and if it pleased us to take them there, they would provide us, instead of them, Christian pilots. . . . The captain-major . . . having discussed the matter with his Moorish prisoners, cast anchor off the town. . . . [In return for freeing the Moorish prisoners, the text says that Malindi’s king provided a Christian pilot with whom the Portuguese were “much pleased.” Use by Portuguese mariners of Muslim and later Hindu and Malay pilots is well documented, as is their frequent confusion about others’ religion. They long persisted in mistaking Hindus for a kind of Christian.]



We remained in front of this town during nine days, and all this time we had [feasts], sham fights, and musical performances.

We left Malindi on the 24th [of April], for a city called [Calicut, in India] with the pilot whom the king had given us. . . . After having seen no land for twenty-three days, we sighted lofty mountains . . . and when we were near enough for the pilot to recognize them he told us they were above Calecut, and that this was the country we desired to go to.

The captain-major sent [a messenger] to Calecut, and those with whom he went took him to two Moors from Tunis who could speak Castilian and Genoese. The first greeting that he received was in these words: “May the devil take thee! What brought you hither?” They asked what he sought so far away from home, and he told them he came in search of Christians and of spices.

Source: E. G. Ravenstein, trans. and ed., *A Journal of the First Voyage of Vasco da Gama, 1497–1499* (London: Hakluyt Society, 1898), 1, 3, 5–9, 16–17, 20–21, 23–25, 28, 30–31, 35–37, 39–40, 45–48.

DOCUMENT E

All the Seas Are One Sea: Magellan and the First Voyage around the World

Before his famous voyage, Magellan had studied astronomy and nautical sciences. He took part in several Portuguese sailings to India between 1505 and 1512 and in several battles in the Indian Ocean. From there, he was sent to explore the Spice Islands [Moluccas, off western New Guinea] where a Portuguese mercenary captain serving a local sultan gave him information that badly understated the width of the Pacific.

After returning home, Magellan fought against Muslims in Morocco, but on a false accusation he was dismissed by his king. Hence, he turned to Spain, selling its king on his project to reach the Moluccas by sailing west and finding a sea-borne passage across the southernmost part of South America.

The king covered three-quarters of the cost of this expedition, borrowing from German bankers to do so. A Flemish commercial firm funded the rest. Five ships were outfitted, between 120 and 60 tons each, crewed by 270 men. About a third were Portuguese, Spanish, and Italian. Among the rest were “French, Flemings, Germans, Sicilians, English, Malays, Negroes, Moors,” and others. Only one ship and eighteen men returned after completing the voyage under the command of Elcano, who took over leadership of the expedition after Magellan’s death in the Philippines. The few survivors arrived home in poor shape, with a load of fifty tons of spices.

The Pacific crossing did not contribute to the Spanish Empire until after 1550, when mariners finally figured out how to use the winds that made a return trip from Asia to America possible. Soon after, regular round-trip crossings of the Manila galleons between Mexico and the Philippines made the Pacific a communications highway.

Pigafetta, an Italian gentleman-volunteer, had studied astronomy, geography, and

cartography before becoming a member of Magellan's crew. The excerpt below was taken from the account he wrote of his voyage.

Having heard [in 1519] that a fleet composed of five vessels had been fitted out for the purpose of going to discover the spicery in the islands of Maluco [the Moluccas], I determined to go to see those things for myself. . . . The captain-general having resolved to make so long a voyage through the Ocean Sea, where furious winds and great storms are always reigning, [did] not make known to any of his men the voyage he was about to make, so that they might not be cast down at the thought of doing so great and extraordinary deed.

Many days did we sail along the coast of Ghinea [West Africa] . . . with contrary winds, calms, and . . . sixty days of continual rain. . . . Many furious squalls of wind and currents of water struck us head on. . . . That the ships might not be wrecked, all the sails were struck.

That land of Verzin [Brazil, where we landed,] is wealthier and larger than Spagnia, Fransa, and Italia put together, and belongs to the king of Portugalo. The people of that land . . . go naked. . . . They are as well-proportioned as we. . . . The men gave us one or two of their young daughters as slaves for one hatchet or one large knife, but they would not give us their wives in exchange for anything at all. . . . These people could be converted easily to the faith of Jesus Christ.

[In the port we called St. Julian] we remained about five months. [Here] the captains of the other four ships plotted treason in order that they might kill the captain-general. [Some of the crew supported the mutineers, for their food was being rationed and they wanted to turn back and go home. However, the plot was discovered; one of the plotters was knifed, two were executed and another two left behind, marooned. Forty men were pardoned, because they were needed to work the ships, one of which had deserted and returned to Spain. After this] one of the [remaining] ships was wrecked in an expedition made to explore the coast.

Leaving that place, we found . . . towards the Antarctic Pole, a river of fresh water. There the ships almost perished because of the furious winds. . . . We stayed about two months . . . to supply the ships with water, wood, and fish. . . . Then, going . . . toward the same pole, we found a strait . . . [440 miles long]. . . . It leads to another sea called the Pacific Sea. . . . Had it not been for the captain-general, we would not have found that strait for we all thought and said that it was closed on all sides. But the captain-general . . . knew where to find a well-hidden strait, which he saw depicted on a map in the treasury of the king of Portugal. . . . A great storm struck us that night.

. . . Two ships suffered a headwind . . . [and on] approaching the end of the bay, and thinking that they were lost, they saw a small opening. . . . Like desperate men they hauled into it, and thus they discovered the strait by chance. . . . The captain-general [sent two ships to find out whether the opening had an exit into the Pacific Sea. Returning], they reported that they had seen . . . the open sea. The captain-general wept for joy.

[Eventually we left] that strait, engulfing ourselves in the Pacific Sea. We were three months and twenty days without getting any kind of fresh food. We ate biscuit, which was no longer a biscuit, but powder of biscuit swarming with worms. . . . We drank yellow water that had been putrid for many days. We also ate some ox-hides that covered the top of the mainyard. . . . and which had become exceedingly hard. . . . We left them in the sea for four or five days, and then placed them for a few moments on top of the embers, and so ate them;



and often we ate sawdust from boards. . . . But above all other misfortunes the following was the worst. The gums of both the lower and upper teeth of some of our men swelled, so they could not eat under any circumstances and therefore died. Nineteen men died from that sickness, and . . . twenty-five or thirty men fell sick. . . . We sailed about four thousand leguas [16,000 miles] during those three months and twenty days through an open stretch in the Pacific Sea. . . . We saw no land except two desert isles [with no anchorage]. . . . Had not God and His blessed mother given us good weather we would all have died of hunger in that exceedingly vast sea. Of a verity I believe no such voyage will ever be made [again].

[They made landfall in Guam, stocked up on provisions, and landed on various islands after. On entering the port of Cebu, all the artillery was fired, frightening the inhabitants badly. On being asked what they wanted, the] interpreter replied that his master was a captain of the greatest king in the world, and that he was going to discover Malucho [the Moluccas or Spice Islands]. . . . The king told him he was welcome, but it was their custom for all ships that entered their ports to pay tribute. . . . [The interpreter replied that the] captain did not pay tribute to any . . . and that if the king wished peace he would have peace, but if war instead, war. . . . [After a while, peace was established and Magellan spoke to the king and his followers about Christianity, telling] them that they should not become Christians for fear or to please us, but of their own free will; and that he would not cause any displeasure to those who wished to live according to their own law, but that the Christians would be better regarded and treated than the others.

[The king and his following were baptized. After a while, a chief of an island near Cebu] requested the captain to send him only one boatload of men on the next night, so that they might help him fight against [another chief]. . . . The captain-general decided to go thither with three boatloads. We begged him repeatedly not to go [but he did not listen]. At midnight, sixty men of us set out armed with corselets and helmets, together with the Christian king [and some of his following, who were asked to just watch the fight. When we reached the island of the chief we were to help against, the captain] sent a message to the natives by the [interpreter] to the effect that if they would obey the king of Spagnia, recognize the Christian king as their sovereign, and pay us our tribute, he would be their friend; but that if they wished otherwise, they should wait to see how our lances wounded. [Receiving a challenge as reply, Magellan and forty-eight others went ashore to face] more than one thousand five hundred persons. . . . The musketeers and crossbowmen shot from a distance for about half an hour, but uselessly. . . . the natives would never stand still, but leaped hither and thither. . . . They shot so many arrows at us and hurled so many bamboo spears . . . at the captain-general, besides pointed stakes hardened with fire, stones, and mud, that we could scarcely defend ourselves. . . . They shot the captain through the right leg with a poisoned arrow. On that account, he ordered us to retire slowly, but the men took to flight . . . The natives continued to pursue us. . . . [Magellan was wounded several more times.] That caused the captain to fall face downward, when immediately they rushed upon him with iron and bamboo spears and with their cutlasses, until they killed our mirror, our light, our comfort, and our true guide.

[Those who took over the leadership alienated their ally the baptized king of Cebu; they and over a dozen of their men were murdered. The rest escaped but had to abandon one of their ships, which was in too poor a condition to sail. The remaining two ships, with the crew of the sunken third on board, continued on to the Moluccas, capturing pilots by violence to show them how to get there. On the way, they entered the port of Brunei.]



The king of that island sent a very beautiful prau [boat] to us, whose bow and stern were worked in gold. . . . When we reached the city, we [waited] until the arrival of two elephants with silk trappings, and twelve men each of whom carried a porcelain jar for our presents Accompanied by the governor and other chiefs, [we] entered a large hall full of many nobles [The hall] was all adorned with silk hangings, and . . . brocade curtains. . . . Then a chief told us that we could not speak to the king, and that if we wished anything, we were to tell it to him, so that he could communicate it to one of higher rank. The latter would communicate it to a brother of the governor . . . and this man would communicate it by means of a speaking tube through a hole in the wall to one who was inside with the king. The chief taught us the manner of making three obeisances to the king.

The men in the palace were all attired in cloth of gold and silk . . . and carried daggers with gold hafts adorned with pearls and precious gems, and they had many rings on their hands We supped on the ground upon a palm mat from thirty or thirty-two different kinds of meat besides the fish and other things. . . . We ate with gold spoons. . . . In our sleeping quarters there during those two nights, two torches of white wax were kept constantly alight in two rather tall silver candlesticks. . . . [The third day they returned elephant-back to their ships].

[Finally reaching the Moluccas, they bartered for cloves]. For four brazas [about twenty feet] of ribbon, they gave us one bahar [448 pounds] of cloves; for two brass chains, worth one marcello [a coin of sixty-three grams of silver] they gave us one hundred libras [pounds] of cloves. Finally, when we had no more merchandise, one man gave his cloak, another his doublet, and another his shirt, besides other articles of clothing, in order that they might have their share in the cargo. [Next day] three of the sons of the king . . . came to the ships. We gave each of the three brothers a gilt glass drinking cup. . . . Several days later our king told us that he was . . . disconsolate [that we planned to leave] because now he had become acquainted with us and enjoyed some of the products of Spagnia. Inasmuch as our return would be far in the future, he earnestly entreated us to leave him some of our culverins [heavy cannon] for his defense. . . . We gave our king certain pieces of artillery . . . which we had captured among those India [islands], and some of our culverins, together with four barrels of powder.

[About to leave, they found one of their two ships had sprung a leak they could not fix. They had to unload it, lighten the one ship remaining also of part of its cargo of cloves, and leave it and fifty-four men behind. The one ship leaving for home did so with forty-seven crew and thirteen Indians, avoiding Portuguese-patrolled coasts and sea-lanes in the Indian Ocean.]

In order that we might double the cape of Bonna Speranza [the tip of Africa]. . . . We were nine weeks near that cape with our sails hauled down because of [contrary winds and] a most furious storm. . . . Some of our men wished to go to a Portuguese settlement called Mozanbich, because the ship was leaking badly, because of the severe cold, and especially because we had no other food than rice and water; for as we had no salt, our provisions of meat had putrefied. Some of the others however, more desirous of their honor than their own life, determined to go to Spagnia living or dead. Finally by God's help we doubled that cape. . . . Then we sailed northwest for two months continually without taking on fresh food or water. Twenty-one men died during that short time. [Another thirteen men were detained by the Portuguese when the ship was forced to stop at the Cape Verde Islands for provisions.]



On Saturday, September six, 1522, we entered the bay [near Seville, Spain, where they had left from] with only eighteen men and the majority of them sick, all that were left of the sixty men who left Malucho. Some died of hunger; some deserted at the island of Timor; and some were put to death for crimes. From the time we left that bay until the present day we had sailed fourteen thousand four hundred and sixty leguas [57,840 miles] and furthermore had completed the circumnavigation of the world from east to west.

Source: James Alexander Robertson, trans. and ed., *Magellan's Voyage Around the World*, by Antonio Pigafetta, 2 vols. (Cleveland, Ohio: Arthur H. Clark, 1906), 1:23, 27, 35, 39, 43, 45, 61, 65, 67, 133, 135, 141, 171, 173, 175, 177; 2:27, 29, 31, 97, 99, 103, 183, 185, 189.

LESSON 3

Routes to Empire

Activities

Teachers should note that sharing with students the questions they will be asked to answer and the activities they will be asked to do before they begin to work with the student handouts may serve their historical knowledge and understanding.

Ask students to respond to the following:

1. Ask students to compare what Armstrong said in 1969 when he took his first step on the moon: “That’s one small step for a man, a giant leap for mankind,” with what Balboa said when he took his first step into the Pacific Ocean (see Student Handout 1.3.2, Document R). In what ways does each statement reflect the values of the time when it was spoken and the values of the cultures the speakers came from? Were the values identified for Balboa’s time and culture helpful to the achievement of Iberian aims in the East and West at that time? Why or why not? Have those values died out, or are they still alive and well today?
2. Ask students to consider whether they think guns (cannon, muskets) made the decisive difference allowing Europeans to defeat and dominate peoples they met in the Indies and in the Americas between the 1490s and 1550? Why or why not? Students should support their arguments with reference to Documents G, I, N, S, and T.
3. Pose these questions to students: If there had been a United Nations in 1520, and you had been one of its observers, what would you put into an unbiased report to a concerned security council about the situation in the Indian Ocean, based on the information in Student Handout 1.3.1? If there had been a human rights organization in 1550, and you had been one of its observers, what would you put into an unbiased report to it about favorable and unfavorable aspects of human rights in the Americas since 1500, based on the information in Student Handout 1.3.2?
4. Ask students to compare the measures taken by the Portuguese in their attempt to monopolize the maritime trade of the Indian Ocean area with the measures taken by the Spaniards to benefit from the wealth, labor, and resources they found in the Americas. Have students use information from Student Handouts 1.3.1 and 1.3.2. Which were more successful? Why?
5. Ask students if they agree that both the Portuguese in the East and the Spanish in the West were empire-building from about 1500 on. Why or why not? What question(s) might be asked, the answers to which would help confirm, modify, or contradict student views about whether the Portuguese and the Spanish were empire-building?

6. Pose this question: Does the definition of empire you have come up with in the fourth Introductory Activity need changing in view of what the Portuguese were doing in Africa and Asia and the Spanish in the Americas between 1490 and 1550? Why or why not? If yes, then how?
7. Ask students to compare the reaction of Montezuma's messengers to Cortés and his Spaniards (Document T) with that of Malacca's inhabitants to the Portuguese (Document I). What reasons might be given for the differences? What reasons for the similarities?
8. Ask students to summarize the various ways in which native populations reacted to Portuguese activities in the Indian Ocean and Spanish activities in the Americas between about 1500 and 1550, as shown in Documents N, P, S, and U. What other ways of reacting to attempted foreign domination might students suggest for which there is no evidence in Lesson 3? Would such reactions have been possible for the populations involved at the time?
9. What justifications do students think the Portuguese and the Spanish gave for their actions in the Indian Ocean area and in the Americas? (Information about this can be found in Documents J, O, P, R, V, W, and X.) Might any of their justifications be used in the contemporary world? Why or why not? If any, then which? Under what circumstances?
10. Ask students: What ethical and moral standards should be used to judge the actions of people in past historical periods, and in different cultures—those of their own times and cultures, or those of ours? Why? As a case study, have students debate the proposition that Cortés had a moral duty to make war on the Aztecs, both to convert as many as possible in order to save their souls, and to save from death those they would have killed in their practice of human sacrifice.
11. **This activity may serve as assessment.** Ask students: Taking everything you have learned into consideration, how would you explain the success of the Portuguese and the Spanish in dominating peoples they met as a result of their maritime enterprises in the fifteenth and early sixteenth centuries? Support your reasoning with evidence from this chapter.
12. **This activity may serve as assessment.** Compare and contrast the empires created by Portugal in Africa and Asia and by Spain in the Americas by about 1550. Take into account both the earlier definition of “empire” (in the answer to the fourth of the Introductory Activities) and the political, economic, military, and other aspects of the Iberian impact on the lands and peoples they dominated.

13. Ask students to consider the reliability as historical evidence of the original source parts of Documents I, K, R, and T. Students should take into account whatever information they have about the subject matter and the author, from head notes and from any other part(s) of the lessons in this chapter. Note that it would be possible to have reasons for both questioning and accepting the same text.
 - a. For each, what reasons might you have for questioning its reliability?
 - b. For each, what reasons might you have for accepting its reliability?
14. Ask students to consider what the words “demonizing” and “a,” in the title “Demonizing the enemy: A Chinese view” (Document L), suggest about the quoted source statement that follows. What knowledge about the statement’s author might affect students’ judgment about the statement’s reliability?
15. The original source parts of Documents H, L, M, N, and U are all descriptions of the “Other”—peoples alien to the author. Ask students to rank them according to their judgment of their reliability, and give reasons for the ranking. Students should make use of whatever information they have about the subject matter and the author, from head notes and from any other part(s) of the lessons in this chapter. What evidence, if any, can students think of that could convince them that the description at the bottom of the ranking was, in fact, accurate, reliable reporting?

Extension Activities

1. Ask students to consider which of the following descriptions best fits Vasco da Gama and Cortés:
 - hero
 - diplomat
 - terrorist
 - explorer
 - other

Students should support their arguments with evidence. Does the description chosen fit both men equally well? Why or why not?
2. Pose these questions: As a historian, would you dismiss entirely statements in texts about the reliability of which you had doubts, considering them useless as historical evidence? Or would there be a way to make use of them as reliable historical evidence? “Demonizing the Enemy” might be an example. If so, how, and as evidence of what?

3. **This activity may serve as assessment.** Ask students to prepare a handout to be used by students two or three years younger than themselves to be called “What to Believe: Ways to Tell Whether What You Read Is Reliable.” Teachers might consider allowing students to use their notes in answering this test. Because they had been encouraged to make notes of the answers to questions, and of the results of activities, letting them use their notes could serve as part assessment of their ability and diligence in note taking as well as of their ability to assess the historical reliability of documents.

How, and With What Success, Did Portugal Shift from Finding Sea Routes to Controlling Them, and to Building a Maritime Empire in Asia?

DOCUMENT F

Choking Off the Competition: Venetian Reaction to the Portuguese in the Indian Ocean

Venice had for a long time been the unquestioned maritime leader in the Mediterranean. The wealth and the prestige of the Venetians were seriously threatened by Portuguese activities in Africa and Asia. Venice had a lot at stake: Pepper bought at three ducats a hundredweight in India sold for eighty in the great city. Even allowing for the costs of middlemen's charges, Venetian profits on it could amount to 40 percent. Moreover, the demand for spices both as a preservative and as a flavoring had grown in Europe, following growth of both population and incomes after the fading out of plague epidemics.

The following excerpt from the diary of a Venetian gives an account of the feelings in Venice in 1501.

It is learned that the caravels which were expected, loaded with spices, are in Portugal. Three of the said caravels came from Calicut and one from the gold-mine which had a large quantity of gold . . . This news . . . was considered very bad news for the city of Venice... The spices which should come from Calicut, Cochin, and other places in India to Alexandria or Beyrout, and later come to Venice, and in this place become monopolized, [so that] all the world comes [here] to buy such spicery and . . . gold, silver, and every other merchandise, [which allows us to fund our war against the Turks]; to-day, with this new voyage by the King of Portugal, all the spices which came by way of Cairo will be controlled in Portugal, because of the caravels which will go to India . . . to take them . . . And truly the Venetian merchants are in a bad way, believing that the voyages should make them very poor.

Source: Qtd. in K. N. Chaudhuri, *Trade and Civilization in the Indian Ocean: An Economic History from the Rise of Islam to 1750* (New York: Cambridge University Press, 1985), 64–5.

DOCUMENT G

Becoming Top Dog: Portuguese Victory at the Battle of Diu

The Venetians and the Muslim Mamluk regime in Egypt had between them dominated the flow of spices from India to Europe by way of the Red Sea. The Portuguese in the early sixteenth century became a serious threat to this Egypt/Venice monopoly and its profits. The sultans of Egypt and the rulers of Gujarat and Calicut in western India allied to break Portuguese



power in the Indian Ocean. The Ottoman sultan from Istanbul supplied Egypt with war galleys in the Mediterranean. These were taken apart, carried overland, and reassembled in the Red Sea with Venetian technical help. Together with the contributions of Calicut and Gujarat, the allied fleet consisted of twelve ships of which only four were major vessels, and perhaps as many as eighty small boats. The fleet was weaker than had been planned. A Christian military order from Rhodes, an island in the eastern Mediterranean, had taken or destroyed more than half the ships bringing timber for constructing Egypt's contribution to the allied force. In 1509, near Diu on the western coast of India, the allied fleet met the Portuguese, who won the battle. Afterward, the Portuguese extracted a payment of 300,000 gold coins, built a fortress at Diu, and left a garrison.

The following account comes from a book, finished in 1518, describing the countries bordering the Indian Ocean. Its author was a trader and official in India for fourteen years. He learned the western Indian language Malayalam, and he acted as interpreter between the Portuguese and Indian rulers. Later, he traveled with Magellan, who had become his son-in-law, on the latter's round-the-world voyage.

The King of Cambaya has here [at Diu] a Governor who is an old man, a very good rider, judicious, industrious, and learned. . . . He possesses a very strong artillery. . . . He also has many rowing galleys, well designed and equipped . . . [and] has built a very strong boom across the harbor, furnished with heavy artillery and many gunners always present, with numbers of men- at-arms well trained and equipped, whom he pays right well. [Born a Christian and suspecting Portugal would win, he carefully kept his ships out of the way and fired not a shot.]

To this port came a fleet of the Great Soldam with a fine and powerful force well trained and armed, with many sailing ships and rowing galleys. . . . He came to this port in order to refit with the help of the King of Cambaya and . . . the Governor . . . [and] to go thence to India, to the city of Calecut, where also they were to help in an attack on our people, and to drive them out of India. [The Portuguese] Viceroy . . . prepared his fleet. . . . The Moors sallied forth to encounter him at sea and at the entrance of the bar both fleets fought . . . stoutly. . . . Men were slain and wounded; and at last the dogs were overcome, many being slain and many others taken. [Their captain] fled, leaving his whole fleet to destruction. The Governor of Diu . . . beholding this crushing defeat, sent in haste a message to the Viceroy begging for complete peace and friendship, and in token thereof he sent many presents and supplies.

Source: Mansel Longworth Dames, trans. and ed., *The Book of Duarte Barbosa*, Vol. 1 (London: Hakluyt Society, 1918), 130–4.

DOCUMENT H

Respecting the Enemy: A European View of Muslim Merchants They Met in Gujarat

Gujaratis from northwest India were among the most prominent of the merchants sailing the Indian Ocean. Their ships were variations of the Arab dhow, averaging 300 to 800 tons. According to a Portuguese writing in the 1520s, “These ships are so powerful and well armed and have so many men that they dare to sail this route [Malacca to the Red Sea] without fear of our ships.” A merchant from Florence in 1510 had the following to say about his Gujarati fellow-traders:

We believe ourselves to be the most astute men that one can encounter, and [yet] the people here surpass us in everything. And there are Muslim merchants worth 400,000 to 500,000 ducats. And they mock us, and it seems to me that they are superior to us in countless things, save with sword in hand, which they cannot resist.

Source: Qtd. in Michael Pearson, *The Indian Ocean* (New York: Routledge, 2003), 95.

DOCUMENT I

The Conquest of Malacca: The Malay View

Through the prosperous city of Malacca in the early 1500s flowed the trade from and to China, Indonesia, India, and Southwest Asia. A thousand Gujarati merchants a year visited there. Other Indians came also, as well as Malays from the Spice Islands and Phillipinos, South Chinese, Japanese, and Okinawans. According to the Portuguese author Tome Pires, products from Western Europe, the Mediterranean, East Africa, Inner Eurasia and South, Southeast, and East Asia were traded from Malacca in the early sixteenth century; also, you could hear eighty-four languages spoken.

Afonso de Albuquerque, Malacca’s conqueror, claimed to have taken as part of the loot three-thousand guns. According to him, the gun founders there “were as good as those of Germany.” The account of an Italian author gave no numbers but confirmed that Malaccans did use guns in their defense, probably light, highly decorated bronze cannon imported from both Gujarat and China. Cannon were certainly used by the invaders. Letters from two Italians in Albuquerque’s fleet describe the very heavy bombardment of the city from very close quarters, “day and night,” for twenty days before the final assault. The Portuguese anchored their ships in the river near Malacca’s central bridge to bring their four hundred shipboard cannon to bear, some mounted on a specially fortified junk.

Malacca’s history, including its fall to Portuguese attack, was described in the mid-sixteenth century by an anonymous Malay author, probably a noble courtier. The description below is from his *Malay Annals*. The author spells the name of the city “Malaka.”



Now the city of Malaka at that time [about 1500] flourished exceedingly and many foreigners resorted thither . . . in the city alone there were a hundred and ninety thousand people [modern scholars' estimate is about 50,000, the same as the Portuguese capital of Lisbon].

After a time there came a ship of the Franks from Goa trading to Malaka; and . . . the people of Malaka . . . came crowding to see what the Franks looked like. And they were all astonished and said: "These are white Bengalis!" [Bengal is on the west coast of India]. Around each Frank there would be a crowd of Malays, some of them twisting his beard, some of them fingering his head, some taking off his hat, some grasping his hand.

[When the Frankish] commander went back to Goa, . . . he described to the [Portuguese] Viceroy the greatness of the city of Malaka, the prosperity of the port, and the number of the inhabitants . . . The Viceroy was seized with desire to possess it, and he ordered a fleet to be made ready consisting of seven carracks, ten long galleys and thirteen foists [like galleys but smaller]. When the fleet was ready, he ordered it to attack Malaka . . . with cannon. And the people of Malaka were bewildered and filled with fear at the sound of the cannon, and they said: "What sound is this like thunder?" . . . Presently the cannon balls began to arrive and struck the people of Malaka, so that some had their heads shot away, some their arms, and some their legs. . . . The next day the Franks landed two thousand men armed with matchlocks apart from a vast horde of sailors and sepoys [Indian auxiliary troops]; and the men of Malaka . . . went out to repel them. . . . The line of the Franks was broken and they gave ground. . . . they were routed and fled to the waterside, pursued by the men of Malaka. They then embarked and sailed for Goa.

[The Viceroy] proceeded to Portugal [Portugal] and presenting himself before the Rajah of Portugal asked for an armada. The Rajah of Portugal gave him [nine ships. He then returned to Goa and fitted out thirty more vessels]. With this fleet he sailed for Malaka. . . . And the Franks engaged the men of Malaka in battle, and they fired their cannon from their ships so that the cannon balls came like rain . . . and the noise of their matchlocks was like that of ground-nuts popping in the frying-pan. . . . When day dawned, the Franks landed and attacked. . . . So vehement was their onslaught that the Malaka line was broken, leaving the king on his elephant isolated. . . . And Malaka fell.

Source: Qtd. in Donald F. Lach and Carol Flaumenhaft, eds., *Asia on the Eve of Europe's Expansion* (Englewood Cliffs, NJ: Prentice-Hall, 1965), 90–2.

DOCUMENT J

The Conquest of Malacca: The Portuguese View

A veteran of North African wars against the Moors, Afonso de Albuquerque was appointed viceroy of India by the Portuguese king, who styled himself "Lord of Guinea and of the conquest, navigation, and commerce of Ethiopia, Arabia, Persia, and India." At the height of their power in the mid-sixteenth century, the Portuguese had a total of some three hundred ships spread over a wide area. To encourage and protect Portuguese trade and to control that of others (any ship caught sailing without a paid-up Portuguese license had its cargo confiscated and its

crew executed), Albuquerque conquered and held a series of fortified ports. Goa on the western Indian coast fell to him in 1510, Malaysian Malacca in 1511, Persian Hormuz in 1515, and Chinese Macao in 1557. The Portuguese system of control by violence was justified on the basis that although by common law the seas were open to all, this law applied only in Europe and only to Christians. Albuquerque claimed that an empire could be built with “four good fortresses and a large well-armed fleet manned by 3000 European-born Portuguese.” It took him at least eighteen ships, fourteen hundred enlisted men, several hundred Javanese and Indian allies, and two tries to take Malacca. However, he never managed to take Aden on the Red Sea in spite of determined attempts to do so. Moreover, after Malacca’s conquest, the rising Muslim sultanate of Aceh in Sumatra began to compete successfully with the Portuguese for the area’s spice trade.

Albuquerque was reported to have spoken to the crews of his ships before his second and successful attack on Malacca as follows.

Although there be many reasons . . . in favor of our taking this city and building a fortress therein to maintain possession of it, two only will I mention.

The first is the great service which we shall perform to Our Lord in casting the Moors out of this country and quenching the fire of this sect of Mafamede so that it may never burst out again hereafter; [and I hope doing so] will result in the Moors resigning India altogether to our rule. . . . Our Lord for his service thought right to lead us hither, for when Malacca is taken the places on the Straits [through which the Muslim merchants carried spices to India and on to the Mediterranean] must be shut up, and they will never more be able to introduce their spiceries into those places.

For after we were in possession of the pepper of Malabar [south-west India], never more did any reach Cairo [and from there, western Europe] except that which the Moors carried thither from [Malacca]. And [their] forty or fifty ships, which sail hence every year laden with all sorts of spiceries bound for [north Africa], cannot be stopped [by us] without great expense and large fleets. . . . If we take this trade of Malacca out of their hands, Cairo and Mecca are entirely ruined, and to Venice no spiceries will be conveyed except that which her merchants go and buy in Portugal.

Source: Qtd. in Harry J. Benda and John A. Larkin, *The World of Southeast Asia: Selected Historical Readings* (New York: Harper and Row, 1967), 78–9.

DOCUMENT K

“With ten ships we could take the whole of China”

Tome Pires was apothecary to a prince of Portugal and royal agent for the supply of drugs sent to India yearly. He sailed to India in 1511 and, after nearly a year there, to Malacca where he was accountant of the business office. After some travel in Indonesia as an official, he went with the fleet of seven ships sent by the king of Portugal in 1517 “to discover China.” He was to be the first European ambassador there. Having landed in Canton, he waited more than two years in vain to present his credentials to the emperor. Translators’ errors, Portuguese arrogance,



and complaints from several Indonesian kings to their Chinese overlord about the Portuguese embroiled the latter in marine battles with the Chinese, in which the Portuguese were severely mauled. Pires and the rest of his embassy were imprisoned in chains, several were executed, and Pires eventually died of an illness.

Pires wrote the following account of the established seaborne trade east of the Mediterranean in 1512–15, soon after the Portuguese began building an empire from East Africa to the Spice Islands, trying to monopolize maritime trade throughout that area.

All the trade in Cambay [on the west coast of India] is in the hands of the heathen. Their general designation is Gujaratees. . . . They are men who understand merchandise. . . . They do their accounts with figures like ours. . . . Those of our people who want to be clerks and factors [business agents] ought to go there and learn. . . . Both the Gujaratees and the merchants [from elsewhere] who have settled there sail many ships to all parts [to the Persian Gulf, Red Sea, Goa, Ceylon (Sri Lanka), Bengal, Siam, and Malacca among others] where they take quantities of merchandise, bringing other kinds back, thus making Cambay rich and important.

The [Muslim] merchants from Cairo [Egypt] bring the merchandise which comes from Italy and Greece and Damascus to Aden. . . . [Those from Aden bring those goods and some from Arabia to Cambay, and take back from there products of Malacca, mostly spices] and all kinds of cloth for trading in . . . Kilwa, Malindi, Mogadishu [all three in east Africa] and other places.

The Gujaratees were better seamen and did more navigating than the other people of these parts, and so they have larger ships and more men to man them. They have great pilots and do a great deal of navigation. The heathen of Cambay—and in older times the Gujaratees—held that they must never kill anyone, nor must they have armed men in their company. If any were captured and [their captors] wanted to kill them all, they did not resist. . . . Now [1515] they have many men-at-arms to defend their ships.

As the kingdom of Cambay had this trade with Malacca, merchants of the following nations used to accompany the Gujaratees there in their ships, and some of them used to settle [in Malacca], to wit, people from Cairo, many Arabs . . . Abyssinians, and people from Ormuz [and from East Africa], Persians . . . Turkomans [from Inner Eurasia], Armenians [and others].

According to what the nations here in the East say . . . China [is great in] riches, pomp, and state in both the land and people, and other tales which it would be easier to believe as true of our Portugal than of China.

The people of China are white, as white as we are. . . . It certainly seems that China is an important, good, and very wealthy country, and the [Portuguese] Governor of Malacca would not need as much force as they say in order to bring it under our rule, because the people are weak and easy to overcome. And the principal people who have been there affirm that with ten ships the Governor of India who took Malacca could take the whole of China along the sea-coast.

Source: Armando Cortesao, trans. and ed., *The Suma Oriental of Tome Pires*, Vol. 1 (London: Hakluyt Society, 1944), 41–6.

DOCUMENT L

Demonizing the Enemy: A Chinese View of the Portuguese

Information by Portuguese writers about Portuguese atrocities is not lacking. In 1503, for instance, a Portuguese captain had the hands, ears, and noses of the eight hundred men from captured ships hacked off, then had their still-living bodies piled into a ship that was set on fire. The local ruler was sent the butchered body-parts, with a message that he could make curry with them. Note, however, that others also, from both European and Asian countries, committed comparable atrocities in the fifteenth and sixteenth centuries.

The following description of Portuguese behavior is from a Chinese account in the second half of the sixteenth century.

So they [the Portuguese] secretly sought to purchase children of above ten years old to eat The method [of preparing the child] was to first boil up some soup in a large iron pan and place the child, who was locked up in an iron cage, into the pan. After being steamed to sweat, the child was then taken out and his skin peeled with an iron scrubbing brush. The child, still alive, would now be killed and having been disemboweled, steamed to eat.

Source: Qtd. in Michael Pearson, *The Indian Ocean* (New York: Routledge, 2003), 119.

DOCUMENT M

Denouncing the Enemy: An Arab View of the Portuguese

In his sixteenth-century account of the Portuguese in Malabar (southwest India), Arab historian Zayn al-Din blames them for many anti-Muslim acts. In addition to outright and unprovoked attacks, unwelcome attempts by the Portuguese to convert Muslims to Christianity evidently played a part in local attitudes towards the newcomers. Given that both Muslims and Hindus in the Malabar region had been trading peacefully with local Christians before the Portuguese arrival, ingrained religious enmity toward Christians does not seem to have been universal. In Europe, too, Muslims and Christians had been intermittent trading partners, collaborators in scholarship, and even allies against their own coreligionists.

Religious polarization between Islam and Christianity grew in Southeast Asia after the 1540s. Conversion then became a major goal of the Portuguese there, and the Inquisition was imported. In the 1560s the Catholic Reformation, a response to the Protestant Reformation, further reinforced the Christian emphasis. On the other side, activist Muslim preachers from Southwest Asia became regular visitors in the region, and strict Sunni Islam became the state religion of many countries.

They tyrannized and corrupted the Muslims and committed all kinds of ignoble and infamous acts. Their acts of violence were countless. . . . They hindered the Muslims in their trade. . . . They robbed them, burnt their cities and mosques, seized their ships and dishonored the Sacred Book [Qur'an] . . . and incited the Muslims [to give up their religion].

. . . They tortured the Muslims with fire, sold some and enslaved others, and against others, practiced deeds of cruelty which indicated a lack of all humanitarian sentiment.

Source: Qtd. in Richard de Silva Chandra, “Beyond the Cape: The Portuguese Encounter with the Peoples of South Asia,” in Stuart B. Schwartz, ed., *Implicit Understandings: Observing, Reporting, and Reflecting on the Encounters between Europeans and Other Peoples in the Early Modern Era* (New York: Cambridge University Press, 1994), 303.

DOCUMENT N

Disrespecting the Enemy Earlier Feared: A Portuguese Report of Moluccan Views of the Portuguese

People on two of the main islands of the Moluccas were friendly toward Portugal. These people wanted Portuguese help in their disputes with the other islands with which they were “always waging war.” Enlisting as allies rulers who had conflicts with neighbors was a deliberate Portuguese strategy.

The following account is from a Portuguese historian’s account of the Moluccas in the mid-sixteenth century.

Formerly, upon seeing a man with a helmet, they said, “Here comes an iron head,” and all of them ran away presuming that we were invincible and not subject to death. But at present [1544] they know that under that helmet is a head that can be cut off, and a body that is not immortal. And seeing us fire muskets, they imagined that our mouths breathed out a deadly fire; and at hearing bombards shooting and the Portuguese being mentioned, pregnant women had a miscarriage because among them artillery was unknown nor had they any inkling of it. But for a long time now they make war with us and do not hold us in much esteem. . . . They are men expert at arms.

Source: Qtd. in Anthony Reed, “Southeast Asian Categorizations of Europeans,” in Stuart B. Schwartz, ed., *Implicit Understandings: Observing, Reporting, and Reflecting on the Encounters between Europeans and Other Peoples in the Early Modern Era* (New York: Cambridge University Press, 1994), 278.

How Did Spain Shift from Finding a Continent to Controlling It and to Building a Land Empire in the Americas?

DOCUMENT O

Get Them to Become Civilized

The following is an excerpt from the Spanish king and queen's 1501 "Instructions for the Government of the Indians." This is one of a series of royal decrees to governors and other royal officials in the first decade or so of Spain's claim to dominion over new-found territories in the Americas. From the beginning it was common for Spaniards to cohabit with Indian women, though without marrying them. This resulted in the women becoming "culturebrokers," mediating the exchange of ideas and information in both directions. By the mid-sixteenth century, there were twenty-two bishoprics, a printing press, and two universities in Spanish America.

For the salvation of the souls of the Indians . . . it is necessary [for them] to be divided into towns in which they may live together and not live separated one from another in the forests . . . and in each of the towns. . . . There is to be a church and a chaplain entrusted with indoctrinating and teaching them Our Holy Catholic Faith.

Therefore . . . We order that Our Governor in the Indies arrange immediately . . . for towns to be established where the Indians can live together in the same manner as the people who live in these Kingdoms of Ours . . . [also not to allow] the Christians living in the Indies to take the wives or sons or daughters of the Indians . . . [or] to make [Indians] work for them as they have done until now, unless the Indians agree to do this of their own free will, being paid a just wage.

. . . [And] not to allow the Indians to sell or exchange their possessions . . . with the Christians for beads or other such things of little value, as has happened before . . . and in everything the Indians are to be treated well and looked after, so that they can . . . build their houses, cultivate their fields and raise cattle for their subsistence. . .

Also . . . order the Indians to cease doing the things they have customarily done, such as bathing themselves, painting their bodies, and purging themselves.

Also, We order Our Governor . . . to induce some Christians to marry Indian women, and Christian women with Indian men, so that . . . the Indians will be instructed in the things of Our Holy Catholic Faith . . . so that they become civilized men and women.

Source: Qtd. in John H. Parry and Robert G. Keith, *New Iberian World: A Documentary History of the Discovery and Settlement of Latin America to the Early 17th Century*, Vol. 2: *The Caribbean* (New York: Times Books, 1984), 260–2.



DOCUMENT P

As Free Men and Not as Slaves

The following is from a 1503 decree by Queen Isabella on Indian labor. From the early years of the Spanish West Indian settlement, it was accepted practice soon enshrined in law to allocate a group of Indians as tributary laborers to an individual Spaniard. Slaves were not subject to this system, since they were personal property. As the local population shrank, Indians were brought in from other islands expressly to do forced labor for the Spanish. These were classed as unfree dependents, though not legally slaves.

Laws that made enslaving Indians illegal were passed several times in the next half-century. They were mostly ignored. Large numbers of Indians were taken in various parts of the Americas, enslaved, and carried elsewhere, including to Spain.

In the 1520s, gold mines became exhausted, and the Indian population continued to shrink due to infectious diseases, ill-treatment, and repeated enforced moves to locations with different climates and diets. The large-scale importation of African slaves began, and planting sugar replaced digging for gold as the chief economic activity. Mining revived when in the 1540s the silver mountain of Potosí and other enormous sources of silver were discovered.

I have now been informed that because of the excessive liberty allowed [the Indians of Hispaniola, today's Dominican Republic and Haiti,] they run away from the Christians and . . . refuse to work, preferring to live as vagrants, and even less can they be found to be taught and persuaded to convert to Our Holy Catholic Faith; and because of this, the Christians who live . . . [there] can find no one to work [for them].

[Therefore] I order you, Our Governor . . . to compel the Indians to have dealings with the Christian settlers . . . to work on their buildings, to mine and collect gold and other metals, and to work on their farms . . . ordering each cacique [chief] . . . to come, with the number of Indians you tell him, to the person or persons you name, so that they can do the work he assigns them, being paid the wages you set, which they are to do and carry out as the free men they are and not as slaves; and you are to make sure that the said Indians are well-treated, and that those among them that are Christian are better treated than the others.

Source: Qtd. in John. H. Parry and Robert G. Keith, *New Iberian World: A Documentary History of the Discovery and Settlement of Latin America to the Early 17th Century*, Vol. 2: *The Caribbean* (New York: Times Books, 1984), 263.

DOCUMENT R

A New Sea Is Added to the New Land: Balboa Sights the Pacific Ocean

Of noble descent, Spanish explorer, planter, and governor Vasco Núñez de Balboa first traveled to the New World in 1500. He settled in Hispaniola as a planter and pigfarmer. Unsuccessful, he escaped his creditors by stowing away on a ship sent with supplies to a new settlement in South

America. He helped found another new town, and he set out to conquer surrounding territory. He also made friends with several local chiefs. One of them told him about a sea on the other side of the mountains. He set out to find it with 190 Spaniards (among them Pizarro, who was later to conquer Peru) and about thousand of the local people. When Balboa ceremonially took possession of the Pacific, no Indians were present.

The excerpt below is from a history of the Indies by a Spaniard who followed in Balboa's footsteps, knew him personally, and took charge of his papers after his death.

On Tuesday the twenty-fifth of September of the year 1513, at ten o'clock in the morning, Captain Vasco Núñez [de Balboa], having gone ahead of his company, climbed a hill with a bare summit, and from the top of this hill saw the South Sea [the Pacific Ocean]. . . . Then he fell upon his knees on the ground and gave great thanks to God. . . . And he told all the people with him to kneel also, to give the same thanks to God, and to beg Him fervently to allow them to see and discover the secrets and great riches of that sea and coast, for the greater glory and increase of the Christian faith, for the conversion of the Indians . . . and the fame and prosperity of the royal throne of Castile [Spain].

[Four days later] he marched [with twenty-six of his men] down to the shore of the South Sea . . . and emerged on to the beach. . . . [Then he] held up a banner with a picture of the Blessed Virgin . . . and below, the royal arms of Castile and Leon. . . . With his drawn sword in his hand and his shield on his arm, he waded into the salt sea up to his knees, and paced back and forth, reciting "Long live the most high and most mighty monarchs, in whose name, and for the royal crown of Castile, I now take possession, in fact and in law, of these southern seas, lands, coasts, harbors, and islands, with all territories, kingdoms, and provinces which belong to them or may be acquired, in whatever manner, for whatever reason . . . without let or hindrance. And if any prince, Christian or infidel . . . should claim any right to these lands or seas, I am ready and armed to defy him and defend them in the name of the Kings of Castile, present and future, who hold authority and dominion over these Indies, both islands and mainland, from Arctic to Antarctic, on both sides of the Equinoctial Line . . . now and for all time, so long as the world shall endure, until the last day of judgment." And so he performed the ceremony of taking possession . . . in due form of law. . . . [Then all those present] scooped up the water in their hands and tasted it, to see if it was salt like the water of the North Sea; and finding it was salt, and remembering where they were, they all gave thanks to God.

Source: Qtd. in J. H. Parry, ed., *The European Reconnaissance: Selected Documents* (New York: Walker, 1968), 233–5.

DOCUMENT S

They Fought Most Valiantly: A Spanish View of Indians in Yucatán

Early Spanish seaborne exploration of the mainland, seeking to establish settlements and exploit gold, met with high casualties from hazards of seafaring, problems with supplies, and armed resistance. But in their raiding expeditions from Cuba to round up workers for their mines, Spaniards heard of large towns and riches farther inland. The governor of Cuba sent official

expeditions to investigate. These brought back information about the country and its inhabitants, some gold, and rumors of more.

Cortés commanded the biggest of the fleets sent from Cuba, with instructions to explore and trade. Ordered to return due to officials' jealousies, he defied the governor and sailed for the Yucatán in 1519 with eleven ships, more than five hundred, sixteen horses, thirteen muskets, and a few small cannon. His force there found what seemed to them, according to the account of Cortés' secretary, "a rich land, filled with people who were better dressed, more civilized, reasonable, and intelligent, with better homes and farms" than any others they had so far seen in the "Indies." Many welcomed Cortés as a potential ally in their own wars against rivals, and especially against the Aztecs (more properly called Mexico); others did not receive the newcomers so happily.

Then they began to let fly arrows at us, and made signals with their drums, and like valiant men surrounded us with their canoes, and they all attacked us with such a shower of arrows that they kept us in the water in some parts up to our waists. . . . [We] fell upon the Indians and forced them back, but . . . they turned on us and met us face to face and fought most valiantly, making the greatest efforts.

With our muskets and crossbows and good sword-play we put up a stout fight, and once they came to feel the edge of our swords they gradually fell back, but only to shoot at us [with arrows] from greater safety. Our artilleryman . . . killed many of them with his cannon. For since they came in great bands and did not open out, he could fire at them as he pleased. . . . Most of [them were] killed by sword-thrusts, the rest by cannon, muskets, or crossbows.

We compelled them to retreat, but like brave warriors they kept on shooting arrows . . . and never turned their backs on us [until we had driven them into the town]. . . . There and then Cortés took possession of that land for His Majesty.

Sources: First and last paragraphs from Bernal Díaz del Castillo, *The True History of the Conquest of New Spain*, A. P. Maudslay, trans., vol. 1 (London: Hakluyt Society, 1908), 111–2.

Second paragraph, describing a different battle, from Díaz, qtd. in M. J. Seymour, *The Transformation of the North Atlantic World, 1492–1763* (Westport, CT: Praeger, 2004), 73–4.

DOCUMENT T

Marveling at the “god” and his followers: An Aztec View of the Spanish

When Cortés landed near Vera Cruz in 1519, the Aztec ruler Montezuma's interpretation of myth and portents led him to think Cortés was the god Quetzalcóatl. This was a light-skinned, bearded deity who condemned human sacrifice, had vanished over the sea eastward near Vera Cruz, and vowed to return—according to astrologers in the year 1 Reed, which came around only once every fifty-two years and coincided with 1519. So Montezuma, a former priest, sent

messengers to Cortés's flagship with divine regalia and rich gifts, a list of which would take up over two pages.

According to the *History of New Spain* written forty years later by the Franciscan missionary and historian Sahagún, based on accounts by native informants, Cortés, on receiving the gifts, asked the messengers if that was all they had brought. He had them bound with chains and then fired a cannon, at which they fainted. Having revived them with food and wine, he asked them if they had more gold, saying, "My men suffer from a disease of the heart which can only be assuaged by gold." He then gave them iron swords and lances and challenged them to combat with the Spaniards: "To test you—how strong you are, how powerful you are." The messengers refused, saying this was not within their mandate from Montezuma. On Cortés's continued insistence on combat, they fled.

According to Bernal Díaz's alternative account of this meeting, Cortés received the gifts "with gracious smiles" and gave in return glass beads, a crimson cap with a gold badge of Saint George, and an armchair. When one of the messengers asked to see an old parade helmet that resembled their war-god's, he was told he could take it but to bring it back filled with gold.

The following description by the messengers of their meeting with Cortés is an excerpt from Sahagún's *History*:

[When the messengers reported back to Montezuma, marveling,] he was exceeding fearful and terror-struck . . . when he heard how [the shot] discharged, at command, from the gun; how it resounded like thunder when it went off. . . . And when it discharged . . . fire went scattered forth; sparks showered forth. And its smoke smelled very foul; it had a fetid odor which, verily, wounded the head. And when [the shot] struck a mountain, it was as if it fell apart and crumbled. And when it struck a tree, it splintered, seeming to vanish as if someone blew it away.

All iron was their war array. They clothed themselves in iron. They covered their heads with iron. Iron were their swords. Iron were their crossbows. Iron were their shields. Iron were their lances.

And their deer, which bore them upon their backs, were as high as roof-tops. Their faces [were] very white; they had yellow hair, although the hair of some was black. . . . [The Negroes' hair] was kinky and curly.

And their dogs were very large. They had ears doubled over; great, hanging jowls; blazing eyes—flaming yellow . . . and gaunt stomachs. [They were] very tall and fierce. They were nervous; they went about panting, with tongues hanging.

[After he had listened to the messengers, Montezuma commanded two captives to be slain.] They slashed open their breasts; they sprinkled the messengers with their blood. For this reason did they do so: that they had traveled into very perilous places; that they had gone to see—had looked into the faces and at the heads of, and had verily spoken to—the gods.

Source: Bernardino de Sahagún, *Florentine Codex: General History of the Things of New Spain*, A. J. O. Anderson and C. E. Dibble, trans. and eds., *Book 12: The Conquest of Mexico* (Santa Fe, NM: School of American Research and the University of Utah, 1955), 18–20.



DOCUMENT U

Marveling at the “Barbarians”: A Spanish View of the Aztecs

Cortés held talks that promised alliance with a local kingdom whose leaders saw a chance to be rid of Aztec rule. He put down a revolt by some of his own followers who wanted to go home. To make this impossible, he sank all his ships, claiming they were unseaworthy. Now it was a matter of “do or die.” He set out to conquer an Aztec Empire vulnerable to defections, since it depended on the food levies, tributes, and prisoners for sacrifice contributed by those the Aztecs had conquered. Aztecs fought their wars by accepted codes, preferably by one-on-one duels and with the aim of capturing prisoners rather than killing enemy warriors. Captives were highly honored before having their still-beating hearts torn out, and a fragment of their flesh ritually eaten. Cortés’s estimate that the “most horrid and abominable custom” of sacrifice claimed “three or four thousand souls” a year is not out of line with modern scholars’ conclusions.

On his march inland, Cortés deliberately used terror to intimidate potential attackers. Such was the unprovoked “demonstration” massacre of reportedly thousands of Cholulans assembled by a trick. He burned and impaled on stakes more than one hundred of their chiefs. He also used diplomacy to attract allies, convincing them that he was anti-Aztec while keeping up cordial relations with Montezuma. In this, he had the very substantial and, according to some, indispensable help of Malintzin (La Malinche), his high-born Indian mistress and interpreter. She spoke Mayan and Náhuatl, the Aztec language, and learned Spanish after being baptized.

Received with friendship in the Aztec capital, his initial attack there led to his disastrous defeat and retreat. However, he returned, conquered the city’s defenders weakened by epidemic disease, and razed the city, leaving only ruins. The rest of the empire eventually fell to him.

The selection below is part of Cortés’s 1520 letter to the king of Spain.

These things [gifts to Cortés from Montezuma], apart from their intrinsic value, are so marvelous in point of novelty and strangeness as to be beyond price. . . . Of all the things created on land, as well as in the sea, of which Montezuma had ever heard, he had very exact likenesses made of gold, silver, jewels, and featherwork, so perfectly that they seemed almost real. He gave me a large number of these for Your Highness.

Besides these things, Montezuma presented me with a large quantity of articles of cloth, which, though fashioned of cotton and not of silk, could not be equaled by anything else in the world for texture, richness of colors, and workmanship.

The great city of Tenochtitlán is as large as Seville or Córdoba. . . . One of [its] squares is twice as large as that of Salamanca . . . where there are daily more than sixty thousand souls buying and selling. . . . There is . . . a very large building, like a Court of Justice, where there are always ten or twelve persons sitting as judges, and delivering their decisions upon all cases which arise in the markets.

This great city contains many mosques, or houses for idols. . . . The chief of them all is so large that within its enclosure, which is surrounded by a high wall, a town of five hundred houses could easily be built. . . . There are as many as forty towers very tall and well-built, the largest with fifty steps leading to the top; the tallest one is higher than the tower of the cathedral of Seville.

The markets and public places of this city are daily filled with laborers and masters of all trades, waiting to be hired.

Though I would fain continue, I shall only say that the mode of life of its people was almost the same as in Spain, with just as much harmony and order; and considering that these people were barbarians, so cut off from the knowledge of God, and of other civilized peoples, it is wonderful what they have attained in every respect.

Source: Cortés' Second Letter to the Emperor Charles V in 1520, qtd. in Alonso de Zorita, *Life and Labor in Ancient Mexico: The Brief and Summary Relation of the Lords of New Spain*, Benjamin Keen, trans. (New Brunswick, NJ: Rutgers University Press, 1963), 155–61.

DOCUMENT V

Spanish Warrant for Legal Aggression, and for Blaming Its Victims

The document below was known as the Requirement. It was a response to Spanish clerics' claim that it was legitimate to attack or enslave only those who knew of but rejected Christ. This covered Muslims, but not Indians. Refusal to answer affirmatively to the Requirement was taken to be rejection of Christianity. This opened the door to considering it morally and legally justified to make war on and exploit the property and labor of those doing so. Having the Requirement translated into the language of those to whom it was addressed was encouraged but not necessary. Having it read in Spanish, on shipboard when land was first sighted, on an empty beach, or in a village all of whose inhabitants had fled did not invalidate it.

Pizarro had sailed with Balboa. He became mayor of the Spanish-built town of Panama, and having heard rumors of much gold in a land farther south, he set out on a conquering expedition. Several earlier sailing explorations along the South American coast were failures. In 1528, however, Pizarro found the northernmost port of the Inca Empire. There an Inca noble on official business came on board to inspect the foreigners. In preparation for the conquest he planned, it was to him that Pizarro read the Requirement. Whether it had been translated is unclear. In any case, the noble gave no reply, though there was an exchange of gifts. Having sailed to Spain and returned with a royal license to conquer Peru, Pizarro did so with about two hundred men, after the unprovoked massacre of thousands of the Inca elite. He also killed the ruler in spite of payment of the ransom of gold and silver demanded for his life. More than a decade followed of widespread resistance by Incas and civil war between Spanish factions.

I, Francisco Pizarro, servant of the high and mighty kings of Castile and León, conquerors of barbarian peoples, and being their messenger and Captain, hereby notify and inform you . . . that God Our Lord, One and Eternal, created Heaven and earth and a man and a woman from whom you and I and all the people of the world are descended. . . . Because of the great multitude begotten from these over the past five thousand and some years since the world was made, . . . God placed one called Saint Peter in charge over all these peoples.

And so I request and require you . . . to recognize the Church as your Mistress and as Governess of the World and the Universe, and the High Priest, called the Pope, in Her name, and His Majesty [king of Spain] in Her place, as Ruler and Lord King.

And if you do not do this . . . with the help of God I shall come mightily against you, and I shall make war on you everywhere and in every way that I can, and I shall subject you to the yoke and obedience of the Church and His Majesty, and I shall seize your women and children, and I shall make them slaves . . . and I shall do all the evil and damage to you that I am able. And I insist that the deaths and destruction that result from this will be your fault.

Source: Qtd. in Roland Wright, *Stolen Continents: The Americas through Indian Eyes since 1492* (Boston: Houghton Mifflin, 1992), 65–6.

DOCUMENT W

“Is it just for Spaniards to make war on Indians, impose regime changes on them, and take away their possessions? No.”

The Spanish Dominican legal scholar Vitoria was interested in the rights and wrongs of war and conquest. In a series of university lectures in 1539, he outlined how these ideas applied to the justice or injustice of Spanish behavior in the Americas. He had much academic prestige, and although his arguments embarrassed the government and got him a scolding from the emperor, they did influence public opinion to some extent and contributed to the foundations of international law.

Even if the Emperor were the lord of the whole world [which he is not], that would not entitle him to seize the provinces of the Indian aborigines and to [name new lords for them] and put down the former lords or to levy taxes.

Although the Christian faith may have been announced to the Indians with adequate demonstration and they have refused to receive it, yet this is not a reason which justifies making war on them and depriving them of their property.

On the arrival of the Spaniards we find them declaring to the aborigines how the King of Spain has sent them for their good, and admonishing them to ...accept him as lord and king; and [they] replied they were content to do so. [This would give Spain possession and make them subjects were it a true and voluntary choice. But fear and ignorance invalidate a choice, and it was armed Spaniards before a timid crowd that posed an unexplained choice which the Indians may not have understood. Therefore, it would not serve as justification for the Spaniards.]

The Indians may not be deprived of their goods or power on account of their social backwardness, nor on account of their cultural inferiority or political disorganization.

A non-Christian cacique or king does not lose his dominion or his jurisdiction due to his idolatrous practices, and even Christian subjects are obligated to obey him.

Spaniards may justly defend themselves against belligerent Indians ...but may not use victory as an excuse for seizing Indians' towns or for enslaving their inhabitants.

Source: First three paragraphs from Vitoria's writings qtd. in John. H. Parry and Robert G. Keith, *New Iberian World: A Documentary History of the Discovery and Settlement of Latin America to the Early 17th Century*, vol. 1: *The Conquerors and the Conquered* (New York: Times Books, 1984), 300, 313.

The rest is a summary of what Vitoria said, from Robert Royal, *1492 And All That* (Washington, DC: Ethics and Public Policy Center, 1992), passim.

DOCUMENT X

“Is it just to make war on the Indians and subject them to Spanish rule, in order to convert and civilize them? Yes.”

In 1547 the humanist and Aristotelian scholar Sepúlveda, who had never been to the Americas, wrote a defense of the Spanish conquests there. He argued that the natives should provide free labor to the Spanish colonists in return for the latter training them in “virtuous and humane customs.”

These Indians are so cowardly and timid that . . . many times thousands upon thousands of them scattered, fleeing like women before a very few Spaniards. . . . These barbarous, uncultivated, and inhumane little men . . . worship the Devil as God, to whom they thought of offering no better tribute than human hearts. . . . They sacrificed human victims by removing the hearts from the chests. . . . They also ate the flesh of the sacrificed men.

War against these barbarians can be justified not only on the basis of their paganism but even more so because of their abominable licentiousness, their prodigious sacrifice of human victims, the extreme harm they inflicted on innocent persons, their horrible banquets of human flesh, and the impious cult of their idols. . . . What is more appropriate and beneficial for these barbarians than to become subject to the rule of those whose wisdom, virtue, and religion have converted them from barbarians into civilized men (insofar as they are capable of becoming so) . . . from being impious servants of the Devil to becoming believers in the true God?

And if they refuse our rule, they may be compelled by force of arms to accept it. Such a war will be just according to natural law.

Source: Qtd. in Marvin Lunenfeld, ed., *1492: Discovery, Invasion, Encounter: Sources and Interpretations* (Lexington, MA: D. C. Heath, 1991), 219–21.

Appendix 1

MAP OF THE ATLANTIC OCEAN

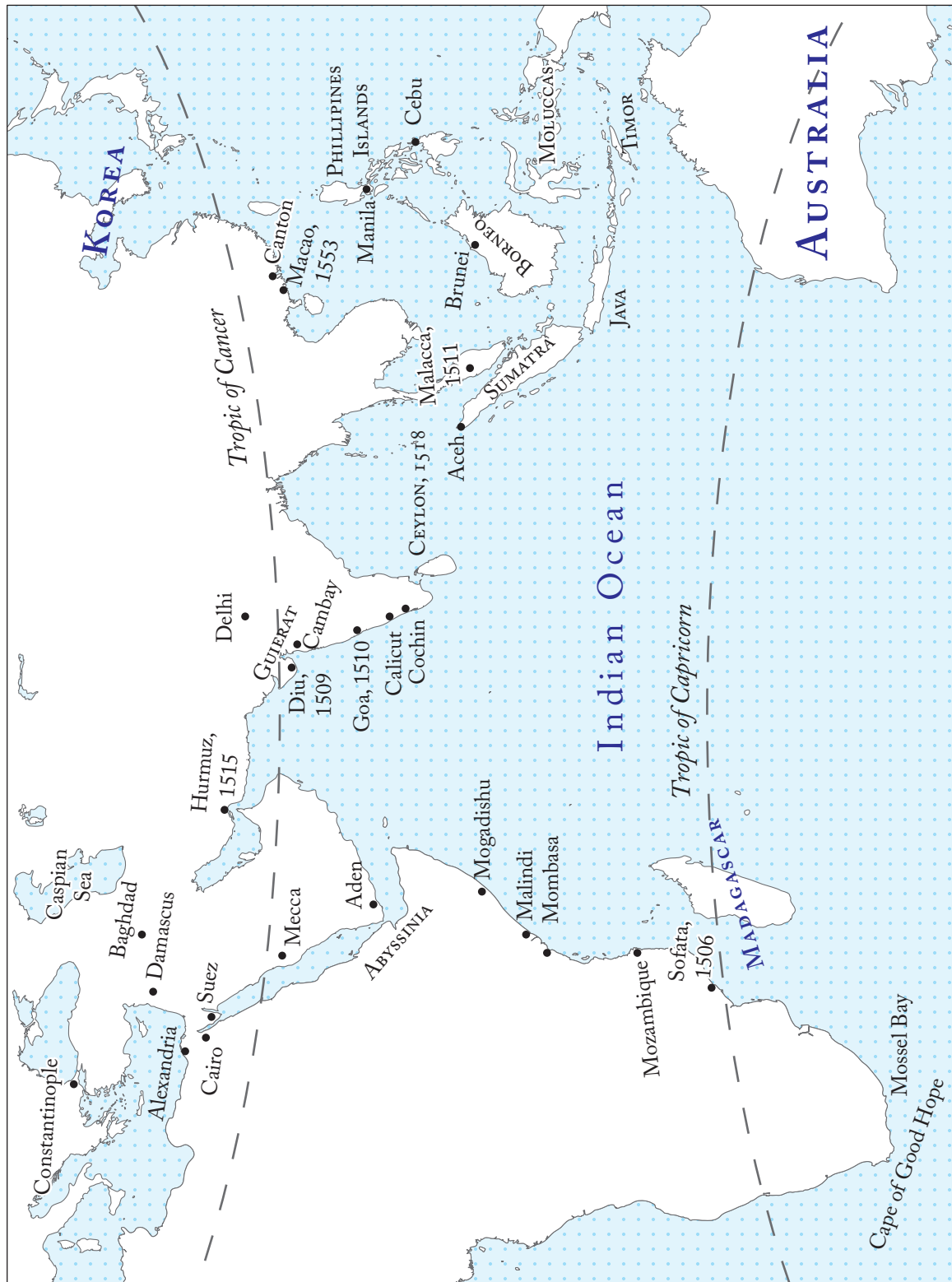
This map shows places mentioned in this chapter. Dates indicate when Portugal or Spain claimed, conquered, or settled the named location.



Appendix 2

MAP OF THE INDIAN OCEAN

This map shows places mentioned in this chapter. Dates indicate when Portugal or Spain claimed, conquered, or settled the named location.



The Columbian Exchange and Its Consequences



WHY STUDY THE COLUMBIAN EXCHANGE?

During the period 1492–1650, America was the site of developments that would later have great importance not only for that continent but also for Afroeurasia and indeed the whole planet.

The Columbian exchange was linked to demographic, economic, and power-distribution changes. At this time and place emerged the seeds of American wealth, European imperialism and economic domination, and what we call globalization. However, these did not flower, let alone bear fruit, until hundreds of years later.

The linking of America with Afroeurasia by way of both the Atlantic and the Pacific treated in Chapter 1, and the resulting crossings to and fro of plants, animals, germs, people, and goods that are the focus of this chapter, had the following effects and long-term implications:

- They initiated the largest demographic catastrophe in the known history of the world. This happened because of the introduction of Afroeurasian diseases to immunity-lacking Amerindian populations. The consequent high mortality rates of American Indians, to which was added European mistreatment, made possible the rapid European conquests in the New World.

- They promoted the circulation of goods along a web of trade routes linking Africa, Europe, Asia, and America in every direction, eased by the flood of silver emerging from American mines.
- They made possible the exchange of food plants between America and Afroeurasia. This, in turn, made possible growing nutritious or useful crops in previously non-productive parts of ecosystems. This resulted in an increase, by the mid-seventeenth century, in the health and numbers of the population in various areas of the world.
- They began the process of increasing reliance on slave labor in America, which would eventually result in millions of Africans being carried off to the New World, where they and their children would work and die as slaves to the benefit of their captors, sellers, and owners. In the process, some African states would become richer and more powerful, while others would decline.
- They shifted the commerce of both Europe and West Africa significantly toward the Atlantic, though for Europe the Mediterranean and the Baltic, and for East Africa the Indian Ocean, maritime routes remained important. Also, a lively commerce between China and the Americas became established.
- They provided the extraordinary income from silver that financed the maintenance of the Spanish Empire in Europe, which declined in sync with the decline in the production and premium value of silver.
- They helped China to a huge expansion of its already wide commercial activity by supplying much of the silver its growing population needed for ordinary domestic buying and selling and that merchants needed for multiplying international transactions. The growth of trade stimulated Chinese production of items in demand abroad. Chinese population growth owing to the establishment there of high-calorie American plants, such as the sweet potato, led to increased domestic demand, which stimulated production for home consumption.
- When the Chinese satisfied their demand for silver, they no longer paid for it twice the price it fetched in Europe. Silver lost about two-thirds of its buying power, causing significant ripple effects in the incomes of the Spanish, Ottoman, and Chinese governments that had mandated their taxes to be paid in silver.

OBJECTIVES

Upon completing this chapter, students will be able to:

1. Analyze the causes and severity of Native American mortality rates from 1500 to 1650.
2. Describe the contributions of Afroeurasia and the Americas to the biological exchanges of plants, animals, humans, and germs initiated by the permanent linking of these two regions.

3. Explain the consequences for global trade of linking America and Afroeurasia with each other.
4. Evaluate the moral significance of a) the massive die-off of American Indian populations in the period 1500–1650 and b) the transatlantic trade in enslaved Africans.
5. Assess documentary and numerical evidence for reliability and explain reasons for serious disagreements among historians about the size of Native American populations before and after contact with newcomers from Afroeurasia.

TIME AND MATERIALS

This chapter is versatile. The variety and number of student readings, discussion questions, and activities provided are meant to give teachers the choice to use those most suited to their students, interests, and circumstances.

Time taken will vary depending on teachers' selections of the materials provided, on how long is spent on them, and on whether the student handouts and some of the activities can be assigned as homework.

Each of the two Lessons, and even parts of each, could be used alone. The basics could be covered with Student Handouts 2.1.1, 2.2.1, and 2.2.3, and a choice from among their associated questions and activities, in two to three forty-five-minute class periods. Using Student Handouts 2.1.2 and 2.1.3 and their questions and activities could be tailored to an additional class period, as could Student Handout 2.2.4 with its questions and activities.

No materials are needed other than pencil and paper.

HISTORICAL CONTEXT

The year 1402 has been called by some “the birth year of European imperialism.” That was the year when a French expedition, backed by Spain, invaded one of the seven Canary Islands just off the North African coast. The Europeans conquered it, in spite of resistance by some three hundred native people, named the Guanches by the invaders. The intruders then went on to gradually take over other islands in the group and continued to hold on to them in the name of the Spanish Crown.

This was the first attempt to plant a permanent European population on extracontinental territory since the Christian crusading states were founded on the eastern shores of the Mediterranean in the eleventh–thirteenth centuries. Those colonies foundered owing to their inability to reproduce in sufficient numbers, to attract enough replacement population, and to generate enough supplies from home to maintain the European presence in Southwest Asia. They suffered attrition from having to defend their settlements from the surrounding Muslim population, who were self-confident, militant, and much more numerous. Culturally and biologically, the crusaders were poorly adapted to their environment. They were unwilling to marry the local Christian women, because they were Nestorian, Greek, or Syrian Christians, not Roman Catholics. They were generally reluctant to adopt local clothing and customs better suited

to the climate than their European ones. And they suffered more than the natives from malaria and other local parasitic or infectious diseases.

Several nations in the fifteenth century had their eye on the Canaries, known to Europe for several centuries. The Portuguese seriously tried to seize the islands several times. One of their invading forces numbered 2,500 infantry and 120 horses. Their attempt, as well as numerous others, failed. But the Spanish continued to hammer away at the Canaries, where the total number of Guanches had, at best, been about 100,000. For nearly a century, Guanches defenders repeatedly pushed amphibious invaders, despite their horses and cannons, back to sea.

Nevertheless, one by one, the islands were gradually transformed into European possessions. The obstinacy of the invaders and their ability to keep calling up new forces from their home country resulted in the final surrender of surviving Guanches in 1496. The conquest of the Canaries foreshadowed in some ways subsequent Spanish experience in the Americas.

Long as the process of conquering them took, it would have been much longer still if the Guanches had not succumbed to diseases they caught from the invaders and to which they had no immunity. Those taken in the wars and on raids were enslaved and often sold abroad. After the conquest, Europeans settled the Canaries and proceeded to transform the islands' ecology by introducing new plants and animals from home.

The Madeiras, also off the North African coast, had been uninhabited when, in the 1420s, the first Portuguese settlers made themselves at home there. They started making a living by importing European plants and animals, raising pigs and cattle, as well as wheat and grapes for export. Income from these, however, would not make them rich. For substantial wealth, the Portuguese in Madeira needed to find something highly valued and with a ready market abroad. They settled on producing sugar, hotly in demand in Europe and valued in China and Africa as well. They decided to go in for a monoculture of this addictive substance for export, and to work it with slave labor. A kind of rehearsal for the later plantation systems in the Americas, it was a runaway success. Production went from 6,000 *arrobas* of sugar in 1455 to 140,000 *arrobas* in 1510. (Parallel to this development, Muslim entrepreneurs in Morocco also developed a thriving sugar industry.)

Europeans learned several things from their experiences on Atlantic islands. They learned that they, and their plants and animals, could live well and permanently in places where they never had been known before. They learned that peoples living on lands the invaders wanted to take over could be defeated, but that they could also sicken easily and therefore turn out to be useless as a labor force. They learned that slaves, especially African slaves, made good substitute workers. They also learned that having the right product to exchange could lead to riches.

When Columbus set out to reach the East by sailing west, he had an exchange of sorts in mind. He hoped to take home spices, gold, and perhaps an alliance with China or other Asian powers. What he offered were the benefits of Christianity and assurances of friendship from the Spanish Crown for the Great Khan in India.

However, instead of reaching the East, Columbus stumbled across one of the outliers of America, the island of Guanahani (San Salvador) in the Bahamas. The Columbian exchange in commodities was initiated when Columbus gave the local inhabitants red caps, strings of beads, and "other trifles of small value," receiving in return parrots, American cotton thread,

and javelins. The exchange soon tilted toward far greater advantage for the Europeans, who could get gold in return for pieces of pottery or shoelace tips. Soon, exchange between Europeans and Native Americans began to give place to extortion by the former.

In the long run, some suffered exceedingly as a result of the Columbian exchange, notably Native Americans who succumbed to inadvertently imported Afroeurasian diseases, often accompanied by deliberate European mistreatment and encroachment on local habitat. For many of them, their labor became a commodity, for the value of which they received little or nothing in exchange. Africans became items of exchange themselves, sold, bought, and brought in as slaves to produce much of what America's contribution would be to the global exchange of goods: silver, tobacco, hides, indigo, and sugar, among others.

Numerous Afroeurasian animals, especially domestic species, arrived in the Americas within a generation of Columbus's touching down in the Caribbean. The unrestrained roaming and feeding habits of horses, cattle, sheep, and pigs transformed wide swathes of the American landscape and damaged Native American crops. Some Indian groups transformed their own ways of life by adopting horses, cattle, or sheep. Hides became a major commodity of exchange in the foreign trade of the Americas. Of the very few American domesticated animals, the only one to successfully migrate to the Old World, was the turkey. But, while accepted in Europe, turkeys had no large-scale impact there.

The exchange of plants began early and continued for a long time. The Spanish, Portuguese, English, and others in the New World experimented with finding, and finally settling on, favorable places for growing their accustomed food crops, most of which were flourishing in America by the end of the sixteenth century and some, such as sugar, in quantities allowing significant export. But Native Americans did not have much of a taste for the Old World foods.

By the seventeenth century, American food crops were making a major impact on population growth on the other side of the Atlantic. These included cassava and maize in Africa and sweet potatoes and maize in China. Less-heavy hitters but important nevertheless for taste and vitamins, including tomatoes and chili peppers, became accepted more gradually, some earlier in India and Indonesia than in Europe. The trends toward increasing reliance on food crops from opposite sides of the oceans, established by 1650, grew in the eighteenth century and beyond. Over one-third of all crops grown in China today originated in America.

Exchanges flourished across the Pacific as well. The Manila galleons carried silver to the Philippines, most of which ended up in China. In return, silk arrived in America in such quantities that it lowered prices there. In Lima and Mexico City, women wore Chinese silk in preference to cloth imported from Spain. The inhabitants of the Muslim world were tied into the new global network as both consumers of silver arriving by way of Europe from America and as middlemen speeding its transfer across the Indian Ocean to China.

Africa, already firmly linked in various ways to Europe and Asia, became conjoined to America also, mostly through the slave trade, although this did not reach its full spate until well after 1650. Initially, the Portuguese paid for slaves in goods like copper, brass, luxury cloths, and cowrie shells from the Indian Ocean. Sometime in the seventeenth century, payment shifted to European manufactured goods, such as cheap cloth and metal hardware, gradually including guns, which promoted warfare and increased the supply of slaves.

Great wealth, including the profits of the slave trade, poured from the wider Atlantic basin into Europe. Merchants flying Portuguese or Spanish flags at first dominated the Atlantic trade, but then the French, Dutch, and English entered on a large scale. By the seventeenth century, a connection was established between having overseas possessions and having European Great Power status. Simultaneously, the arena of European state rivalries expanded to global dimensions.

Spain's Protestant foes in England and the Netherlands seized gleefully on accounts of Spanish atrocities in the New World. These were used systematically as anti-Spanish propaganda, giving birth to the "Black Legend" that dogged Spain's reputation for centuries. Spanish defense was mostly centered on the benefits conferred on "heathen peoples" by Christianity and civilization and the need to take strong action against what was perceived as evil in the customs and "nature" of Native Americans.

European states, especially France, England, and the Netherlands, were increasingly impatient with Spain's claim that it was entitled to a monopoly over New World trade and lands, a claim based on the pope's 1493 division of the overseas world between Spain and Portugal. (America, except Brazil, was on Spain's side of the dividing line; Asia and Brazil on Portugal's.) The dispute over legal justification for "owning" America and its maritime trade contributed to the hammering out of ideas about a "law of nations" that should govern international relations. It was first formalized by Grotius in the mid-seventeenth century, who urged in his code the "freedom of the seas."

From the fifteenth century on, the importance of maritime communications and trade increased explosively. By 1650 there was also increasing need for European states to spend money to protect their colonies against one another's attacks, especially since income and power of states were increasingly tied to the success of their maritime commerce. Unsurprisingly, there was a related rise in the importance to European nations of sea power, in terms of both numbers and armament of ships.

It became increasingly clear by the mid-seventeenth century that there were large chunks of America that Spain had become unable to either colonize or defend. The reasons were various. An important one was their loss of strength on the world exchange stage. The silver available from American mines declined as costs increased, and the profits delivered earlier by the hefty premium paid by silver-hungry China for that metal stopped when, finally, China's appetite for silver was glutted, at least for a time. The price of silver fell, and this metal lost much of its buying power worldwide. This put serious strain on governments, including Spain's, which collected their taxes in silver. The Spanish merchant community lost confidence in the financial policies of the government, reducing their willingness to invest in the Indies trade. Wealth available to fuel exchanges shrank. Dutch and English attacks on Spanish treasure fleets and possessions in the New World intensified, and the northern European navies inflicted resounding defeats on Spanish fleets in the English Channel and off Brazil. Spain lost its earlier command of the sea to the Dutch, French, and English.

One result of Spain's loss was the increasing acceptance among European nations with overseas interests of the idea that possession was nine-tenths of the law, and "effective occupation" was sufficient title to overseas possessions. This idea was to play a major part in European imperialism in the nineteenth century.

Native Americans did not cross to Europe and Africa in significant numbers, but tens of thousands of them were transported as slaves from one part of America to another. Crossings of Europeans (who came from at least nine different countries) and of Africans (also from a number of different states and ethnic regions) to the New World could each be counted in the hundred thousands rather than in millions during this early period. The flood of migrants, forced or voluntary, came later. There was, however, complex and large-scale mixing of genetic material among inhabitants of the Americas. People of mixed parentage, European and Native American, Native American and African, European and African, multiplied fast. Their number in 1650 was just under that of the imported African slaves'. America as a melting pot had begun to bubble.

By 1650, America had become well integrated into the global economy. Its existence and what it had to offer stimulated trade and production worldwide and gave rise to growing populations across Afroeurasia. It came to serve as a link in, rather than barrier to, communications between Europe, which began shifting from the margins of long-distance trade to a more central position. From Europe, trade now went both east and west.

It was peculiarly fitting that Garcilaso de la Vega, offspring of a Spanish conquistador and an Inca princess, should have made the comment, in 1609, summing up the results of the oceanic voyages discussed and the Columbian exchange: "There is only one world."

THREE ESSENTIAL QUESTIONS

Humans and the Environment

Research and report to your class major effects on the physical and natural environments of the Americas of the introduction of cattle, sheep, pigs, or horses in the sixteenth century.

Humans and Other Humans

Compare and contrast the demographic, economic, and social consequences of disease mortality in the Americas in the sixteenth century with the global influenza pandemic in 1918–19.

Humans and Ideas

In what ways did beliefs about, and attitudes toward Native Americans influence Europeans' behavior toward them between 1492 and 1650? Why do you think the possibility that Native Americans were not descendants of Adam and Eve caused intellectual and religious controversy in sixteenth century Europe?

KEY THEMES

This chapter addresses the following historical themes:

Key Theme 1: Patterns of Population

Key Theme 2: Economic Networks and Exchange

Key Theme 6: Science, Technology, and the Environment

CORRELATIONS TO NATIONAL HISTORY STANDARDS

National Standards for World History

Era 6: The Emergence of the First Global Age, 1450–1770. Standard 1. The student should understand how the transoceanic interlinking of all major regions of the world from 1450 to 1600 led to global transformations. 1C: The student understands the consequences of the worldwide exchange of flora, fauna, and pathogens. Standard 4. The student should understand economic, political, and cultural interrelations among peoples of Africa, Europe, and the Americas, 1500–1750. 4A: The student understands how European powers asserted dominance in the Americas between the sixteenth and eighteenth centuries. 4B: The student understands the origins and consequences of the trans-Atlantic African slave trade.

INSTRUCTIONAL RESOURCES

Axtell, James. *Beyond 1492: Encounters in Colonial North America*. New York: Oxford University Press, 1992.

Cook, Noble David. *Born to Die: Disease and New World Conquest, 1492–1650*. Cambridge University Press, 1998.

Crosby, Alfred W. *The Columbian Exchange: Biological and Cultural Consequences of 1492*. Westport, CT: Praeger, 2003. The seminal, classic work on the topic.

———. *Ecological Imperialism: The Biological Expansion of Europe, 900–1900*. 2nd ed. New York: Cambridge University Press, 2004.

Elliott, J. H. *Empires of the Atlantic World: Britain and Spain in America, 1492–1830*. New Haven, CT: Yale University Press, 2006. An excellent comparative analysis of the two states and their colonial empires.

McAlister, Lyle N. *Spain and Portugal in the New World, 1492–1700*. Minneapolis: University of Minnesota Press, 1984. Subheadings in both text and table of contents helpfully identify very specific topics, each discussed concisely and clearly.

Mann, Charles C. *1493: Uncovering the New World Columbus Created*. New York: Alfred A. Knopf, 2011.

Seymour, M. J. *The Transformation of the North Atlantic World, 1402–1763*. Westport, CT: Praeger, 2004. Stresses change and its possible explanations. Combines chronological and topical approaches and offers new ways of looking at familiar information. Readable, but needs concentration.

LESSON 1

The Great Dying

Introduction

- Students can work on most activities and questions as a whole class, as individuals, or in groups. Results of individual and group work usually need to be shared with the whole class.
- Give students the questions they are going to be asked to answer, and the activities they will be asked to do, before they read the documents on which the questions and the activities are based. This will help their concentration, comprehension, and performance.
- Questions and activities typically start with the relatively simple and go on to probes of increasing complexity.
- More questions and activities are provided than need be used in order to allow choices to be made based on teacher and student interests and circumstances. Besides those identified as possible assessments, some of the other questions and activities could so serve as well.
- Encourage students to keep notes of answers to discussion questions and results of activities.
- Keeping notes will help to organize and make sense of extensive and unfamiliar information. Reviewing notes will help toward success on assessments.

Introductory Activities

Ask students to respond to the following questions. If time is limited, each question (or parts of a question) could be assigned to a different group, which would then report its conclusions to the rest of the class.

1. Imagine you are a journalist and your editor wants you to write an article about the new pope's Easter sermon. An important part of the article should be the number of people who turned out to listen to him. The last pope had attracted many thousands. Your editor wants her staff to rely on personal observation, not hearsay or official handouts. What ways can you think of that would give you a reasonably reliable head count of attendees? How would you justify your number to your editor?
2. Suppose that over the next fifty years or so, fast-acting epidemics wiped out half the U.S. population. What do you think would be the results in economic, political, social, religious, and other terms?

3. Faced with unfamiliar foods, people are often unwilling even to try them. What examples can you think of, from your own or others' experience, of foods you refused to try? Which of the foods Europeans first met with in America do you think they had the most trouble accepting? Why? Which Afroeurasian foods do you think Native Americans had most trouble accepting? Why?
4. What products can you think of that today are bought and sold worldwide, and that, wherever they are bought, sold, or used, influence many peoples' lives in some considerable way?

Discussion Questions and Activities

1. List the reasons given by contemporaries for large-scale deaths and a steep decline in Native American populations after the arrival of Europeans. See Student Handout 2.1.1. About which reason(s) is there general agreement?
2. Can the evidence in Student Handout 2.1.1 about reasons for Native American population decline be accepted as reliable? Why or why not? Are the reasons on which there is agreement more likely to be correct than those only one observer mentions? Why or why not?
3. What can you tell about European attitudes toward Native Americans in the sixteenth and seventeenth centuries from contemporaries' comments as shown in Student Handout 2.1.1? Explain how you arrived at your conclusions.
4. What effects do you think the large number of deaths had on Native American societies before 1650? Consider possible effects on such areas as family life, producing and distributing food, relations between rulers and ruled, fighting ability, religious and other beliefs, and outlook on life. How do your answers here compare to your answers to the Introductory Activity, question 2?
5. Compare the description of disease-caused mortality in Student Handout 2.1.2, Document 4 with that in Student Handout 2.1.2, Document 5. How would the differences affect the consequences of the heavy mortality?
6. **This activity may serve as an assessment.** Imagine that you are a government official in the mid-sixteenth century, sent out to travel over Spanish possessions in the New World and report to the king on the conditions of Native Americans there and their relations with the Spanish. You may take into account, and refer to, information from earlier in the century, unless you have reason to believe that the situation changed—in which case you will probably want to explain that. Based on the information in Lesson 1, what points would you definitely want to cover in your report? Why those? How might your being a government official reporting to the king influence what you say?

7. Consider the reliability as historical evidence of Student Handout 2.1.1, Documents 2, 4, 8, 9, and 11. Take into account whatever information you have about the subject matter and the author from any part of Student Handout 2.1.1. (This activity lends itself well to group work.) For each Document:
 - a. What reasons might you have for questioning its reliability?
 - b. What reasons might you have for accepting its reliability?
 - c. Rank order the five documents above from the most to the least believable, and explain the reasons for your ranking. What questions would you ask that might help you decide on the believability or otherwise of the documents?
8. Using the table information in Student Handout 2.1.2, Document 1, construct a large-format graph that shows for each date in the sequence 1300 to 1700 both sets of complete population estimates.
 - a. for the Americas
 - b. for Africa
 - c. for Europe
 - d. for India
 - e. for China
9. Find a way to distinguish the lines on your graph that give information about the five different regions, and to distinguish the two estimates for the same region from each other. You might use a thin line, a thick line, a line made up of dots, one made up of dashes, and one of small circles. A double line could distinguish one estimate from the other. Having studied your graph, answer the following questions:
 - a. On what information about the populations in the five regions do the estimates agree?
 - b. For which regions does the graph show a decline in population size at some point?
 - c. What explanations could you give for the decline in each case?
 - d. What information in this table would you consider most reliable? Why?
 - e. What questions would you ask that might raise or lower your confidence in the reliability of the information?
10. Taking into account all information in Student Handout 2.1.2, which information about the American Indian population would you say that twentieth-century scholars generally agree on?
11. Is there any evidence in Lesson 1 suggesting that the population estimate for central Mexico of 51.6 million just before the arrival of the Europeans should not be accepted? See Student Handout 2.1.2, Document 6. If so, what? Is there any evidence in favor of its acceptance? If so, what?

12. For which of the causes of population decline cited by Robert McCaa in 1995 (Student Handout 2.1.2, Document 8) is there confirmation in the contemporary reports included in Student Handout 2.1.1? Give examples. Which are most thoroughly confirmed? Explain.
13. In determining which of several different population estimates to accept as the most reliable one, which of the following factors would influence your thinking?
- The recentness of the estimate
 - Its position in the range of estimates from highest to lowest
 - How many scholars cited it
 - Whether it was by someone considered an authority (such as, for instance, a professor who has published much in the field)
 - Whether it was by a specialist (such as a demographer rather than a geographer or a historian)
 - How it was supported by evidence (remember that the amount and kind of evidence available has not changed significantly since 1924 and is known to be spotty and inconsistent)

If more than one of the above would influence you, would any carry greater weight than any other? Why or why not? If any would do so, which one?

14. Why does the estimated size of Native American populations at any time between 1490 and 1650 matter? Why do you think there is so much disagreement and controversy about population figures at the time of, and after, the European conquests in America? What choices do historians have in dealing with this situation? What ought they to do? Why?
15. If you were asked to recommend, based on information in Student Handout 2.1.2, what estimate of the total number of people living in the Americas in about 1490 to include in an editorial in the *New York Times*, what number would you give? Defend your choice to the editors. To do so, draw on relevant information from Lesson 1.
16. What reasons might have led some Europeans in the sixteenth and seventeenth centuries not to see “the decline of the . . . native population . . . as a tragedy?” (This quote is from Student Handout 2.1.2, Document 9.) Use information from Lesson 1 to help with your answer. Might any of those reasons still be offered today? Why or why not? If any are, then which? If not, what changed between then and now that might make a difference?
17. What questions would you ask that might help you better understand the reasons for European attitudes and behavior toward Native Americans during the period 1500–1650? Native Americans’ attitudes and behavior toward Europeans during the same period?

18. Create a conversation between one of the following two pairs:
- Someone who feels that arguing either in favor of or against calling European behavior toward Native Americans “genocide” is pointless because it makes no difference today what you call it, and someone who believes that such an argument is important because whether this behavior is called “genocide” has significant political, social, or cultural consequences today.
 - A supporter of David Stannard’s position on “genocide” (Student Handout 2.1.3, Document 1), and a supporter of James Axtell’s position (Student Handout 2.1.3, Document 2).

In both cases, take into account the current definition of “genocide” given in Student Handout 2.1.3, Document 1, as well as any other relevant information from Lesson 1.

19. What moral standards can be used in assessing blame or guilt for things done long ago and far away by people different from us? Should they be judged by their own values, or by ours? Why? Should historians try to avoid any moral judgment of actions taken by people in the past? Why or why not?
20. Using European-Native American relations from 1492 to 1650 as a case study, create a conversation among three people:
- One who believes that historians should judge people in the past by their own values.
 - One who believes that historians should judge people in the past by our values.
 - One who believes that historians should try to avoid any moral judgment of people in the past.
21. Should we assume or not that all people in a past society shared the same values? What if the values of some people in the society (e.g., the ruling class) conflicted with the values of others (e.g., rural peasants)? What difference does it make whether, and how, historians judge people in the past?
22. Based on Lesson 1, list the most important information about the Native American population between 1500 and 1650 that you think should be included in a world history textbook. Explain how you arrived at the choices you made, including how you decided on what was “most important.” What information about this topic, in addition to what is presented in Lesson 1, would you like to see included, if it could be found? Why? What might lead someone else to make different choices from yours?

Extension Activities

1. Research the most recent estimates available of the number of Iraqi civilians killed between the U.S. invasion of March 2003, and the end of 2009. How were the estimates arrived at? How much agreement is there on the numbers? What hypotheses can you come up with to account for differences or unanimity regarding the estimates? Compare your findings with the information in Lesson 1 about Native American deaths and the controversies surrounding this subject.
2. Compare the epidemics in the Americas in the sixteenth and seventeenth centuries with the Black Death in Afroeurasia in the fourteenth century.

Native American Population Decline: Why and by How Much?

When they first arrived in the Americas, the Spanish had just won a generations-long, ruthlessly fought war against Muslim states in Iberia. Afterward, they expelled from Spain both those Muslims remaining and the approximately 200,000 resident Jews. Legal theory held that fighting to expand Christianity justified enslavement of infidels at will, taking over their lands, and disposing of them as the conquerors wished.

During increasing contact with Native Americans in the 1500s, there were heated discussions among Spanish political and religious leaders about whether the inhabitants of “the Indies” were even human and about how they should be treated. Opinion was divided on whether they were capable of becoming converted. To some, they were innocent, trusting lambs, with souls that would be receptive to the Christian message. To others, they were vicious beasts who practiced cannibalism, human sacrifice, and worship of Satan. To all, they were clearly inferior to the Spanish who had conquered them.

From the beginning, the Spanish Crown was concerned for the welfare of Native Americans. It ruled that they were to be paid fair wages for work they freely undertook, be secure in their possessions and persons, and be treated well. Anyone who beat Native Americans or called them “dogs” was fined five gold pesos. However, if they refused to become Christians and submit to Spain’s rule, the requirement (a document read to them, in Spanish, by the early explorers and conquistadors) told them the consequences: They could be attacked, enslaved, or put to death. And it would all be their own fault, no response being taken as refusal.

In 1542 the New Laws of Spain stated that it was illegal to enslave Native Americans under any circumstances whatsoever. Yet they were unfree in Spanish America under the *encomienda* system, an institution traditional in Spain and similar to serfdom. It assigned a group of natives in a neighborhood to a Spaniard, to whom they owed tribute and labor services in return for protection and instruction in Christianity. Senior royal and Church officials were appointed “Protectors of the Indians” to supervise and inspect *encomiendas* so that Indians would enjoy justice and good government. The system, however, was open to widespread abuse, which officials mostly ignored. The New Laws were only spottily enforced.

In North America, the English were eager to convert and “civilize” the natives, whom they considered at best inferior, at worst barbaric, and little better than beasts. Nevertheless, they often allied with Native Americans against other Native Americans and against other European colonial powers. English settlers continually encroached on the lands of Native Americans, who resisted. In some places at some times, massacres occurred on both sides.



In Their Own Words

Documents reporting and explaining large-scale Native American deaths, 1512–1666.

DOCUMENT 1

The Spaniard Peter Martyr, official government chronicler of events in the New World, gave an account of Vasco Núñez de Balboa's expedition to the Pacific. He wrote about the behavior of expedition members toward Native Americans in 1516.

The Spaniards cut off the arm of one, the leg or hip of another, and from some their heads at one stroke, like butchers cutting up beef and mutton for market. Six hundred, including the cacique [chief], were thus slain like brute beasts. ...Vasco [Balboa] ordered forty of them to be torn to pieces by dogs.

Source: Qtd. in Tzvetan Todorov, *The Conquest of America: The Question of the Other* (New York: Harper and Row, 1984), 141.

DOCUMENT 2

Soon after 1520, Bernardino Vázquez de Tapia, one of the Spaniards with Cortés in Mexico, gave his eyewitness testimony. Note that a mosque is a Muslim place of worship. Vázquez de Tapia refers to the Aztec temple as the “Main Mosque,” even though the indigenous peoples of Mexico were not Muslims and had no knowledge of Islam at that time.

This witness saw Pedro de Alvarado [Cortés' second in command] go to the Main Mosque [the Temple of Huitzilopochtli in Tenochtitlán, the Aztec capital] with a certain number of Spaniards where they found the Indians getting ready for their dances. . . . Alvarado had [four of] them seized and . . . tortured to find out if they were to take arms against [the Spaniards]. . . . [They] confessed to anything . . . under torture. . . . Later Alvarado decided to go to the Main Mosque to kill them. ...[He] called all his people to arms and . . . went with his men fully armed to the Main Mosque where three or four hundred Indians were dancing, holding each other's hands . . . and another two or three thousand sitting down watching them. . . . [N]one of them moved; they remained still, and Alvarado began to surround them . . . as soon as they were surrounded, he began to hit them and cry “die” and all those with him did the same. . . . [T]hey killed four hundred noblemen and chiefs. . . . Alvarado must take the blame for it in the opinion of this witness.

Source: Qtd. in John H. Parry and Robert G. Keith, eds., *New Iberian World: A Documentary History of the Discovery and Settlement of Latin America to the Early 17th Century*, Vol. III: *Central America and Mexico* (New York: Times Books, 1984), 290–1.

DOCUMENT 3

In the late 1520s, Juan de Zumárraga, the first bishop of Mexico, wrote to the Spanish king in concern about the drop in Native Americans' birthrate. In 1542, Dominican friar Bartolomé de Las Casas gave different reasons for the same problem.

They no longer approach their wives, in order not to beget slaves. (Zumárraga)

[Because of enforced labor services], husbands and wives were together [only] every eight or ten months, and when they met they were so exhausted and depressed on both sides that they had . . . ceased to procreate. (Las Casas)

Source: Qtd. in Tzvetan Todorov, *The Conquest of America: The Question of the Other* (New York: Harper and Row), 134.

DOCUMENT 4

In 1533 the Spanish official Castañeda wrote to the king about his concern for the Native Americans in his territory.

The Indians of this province [Nicaragua] are becoming extinct, and if something is not done quickly, there will be none left in four years. . . . [T]hey are made to work in the mines, which labor by itself would be enough to destroy and extinguish them all, because the nearest of the mines are forty leagues [160 miles] away, and though the Indians who work in this province are well fed by their masters with bread, meat, and fish, as well as the other local food crops . . . this is not enough to keep them from dying from the work. . . . [T]he land where the mines are is very cold and rainy. . . . The Indians who go to the mines work at extracting gold in the cold and rain and in great exhaustion, and since they come from the hot land of these plains, where they are accustomed to plenty of fruit, fish, and other delicacies they have among them, when they are taken ill there with the coldness of the land and the absence of the [foods] they have been raised on, even though their masters . . . take good care of them, this is not enough to keep them from dying, since [they also] have a very weak constitution. . . . The Indians who . . . transport maize to the labor gangs have to set to work as soon they arrive after traveling forty leagues; thus, if they are taken sick, the illness catches them when they are worn out and exhausted, and in order not to die there, such people leave for their homes, where they never arrive, since they die on the way.

Source: Qtd. in John H. Parry and Robert G. Keith, eds., *New Iberian World: A Documentary History of the Discovery and Settlement of Latin America to the Early 17th Century*, Vol. III: *Central America and Mexico* (New York: Times Books, 1984), 118.



DOCUMENT 5

The sixteenth-century Spanish newcomers in the Americas were used to fencing their fields and leaving their livestock free to range at will. Native American farmers, having no livestock, did not fence their fields. Unsurprisingly, Spanish livestock ranged into and through their unprotected fields, eating and trampling their crops. Antonio de Mendoza, the first viceroy of New Spain, wrote to the Spanish king in the 1530s.

May your Lordship realize that if cattle are allowed, the Indians will be destroyed.

Source: Qtd. in Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, CT: Praeger, 2003), 99.

DOCUMENT 6

Spanish explorer and conquistador Pascual de Andagoya heard about the rich land to the south called “Biru” or “Piru” when he was governor in the area that is now Colombia. Having unsuccessfully tried conquest in Inca territory, he wrote in 1539 as follows.

The Indians [there] are being totally destroyed and lost. ...[The soldiers are] killing all the llamas they want for no greater need than to make tallow candles. ...The Indians are [also] left with nothing to plant, and since they have no cattle and can never obtain any, they cannot fail to die of hunger.

Source: Qtd. in David E. Stannard, *American Holocaust: Columbus and the Conquest of the New World* (New York: Oxford University Press, 1992), 88.

DOCUMENT 7

Toribio de Motolinía, one of first Franciscan missionaries to Mexico, wrote around 1540 in his *History of the Indians of New Spain* about a smallpox epidemic.

[In most provinces of Mexico], more than one half of the population died; in others the proportion was little less. ...They died in heaps, like bedbugs. ...Many others died of starvation, because since they were all taken sick at once, they could not care for each other.

Source: Qtd. in Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, CT: Praeger, 2003), 52–3.



DOCUMENT 8

Father Bartolomé de Las Casas was an energetic activist on behalf of the native peoples of the Americas among whom he worked. He realized his aim of inspiring legislation to protect Indians by his frequent reports detailing Spanish atrocities and abuses. He did not, however, succeed in getting these laws consistently enforced. The following are from his 1542 book *Very Brief Account of the Destruction of the Indies*.

a) [In Cuba in 1512, a hundred or more Spaniards, eager to compare the sharpness of their swords], began to rip open the bellies . . . [of] men, women, children, and old folk, all of whom were seated, off guard and frightened, watching the mares and the Spaniards. . . . not a man of all of them there remains alive. . . . [I]n the same way, with cuts and stabs, [they killed all in a house nearby. The massacre then spread to other villages. Well over 20,000 were killed during this rampage].

b) [T]he Spaniards determined on a massacre [in the Mexican town of Cholula, in 1519] or, as they say, a chastisement [punishment] to sow terror and the fame of their valor throughout that country. . . . [T]hey first sent to summon all the lords and nobles of the town . . . and when they came . . . they were promptly captured. . . . They had asked for five or six thousand Indians to carry their baggage all of whom immediately came. . . . Being all collected and assembled in the courtyard . . . some armed Spaniards were stationed at the gates . . . [and] all others seized their swords and lances, and butchered all [the Indians], not even one escaping. . . . More than one hundred of the lords whom they had bound, the [Spanish] captain commanded to be burned, and impaled alive on stakes stuck in the ground. . . .

c) On Hispaniola . . . in the mines [where the islanders enticed there from the Bahamas] were forced to work . . . life was short for them. Full of despair at finding themselves duped [into mining for the Spaniards] they poisoned themselves with yucca juice; or died of hunger and overwork, delicate as they were.

Sources: Bartolomé de Las Casas, *Very Brief Account of the Destruction of the Indies*, qtd. in (a) David E. Stannard, *American Holocaust: Columbus and the Conquest of the New World* (New York: Oxford University Press, 1992), 71. (b) Marvin Lunenfeld, ed., *1492: Discovery, Invasion, Encounter* (Lexington, MA: D. C. Heath, 1991), 208–9. (c) Thomas Christensen and Carol Christensen, eds., *The Discovery of America and Other Myths: A New World Reader* (San Francisco: Chronicle Books, 1992), 183–4.



DOCUMENT 9

The Franciscan friar Toribio de Motolinía, between whose order and that of the Dominicans (to which Las Casas belonged) there was traditional rivalry and enmity, wrote to the Spanish king in 1555 about the latter's campaign against Spanish behavior in the Indies, as follows.

Las Casas . . . thinks that all err and he alone is right, [making statements such as] "All the conquerors have been robbers and ravishers, the most qualified in evil and cruelty that there ever have been, as is manifest to the whole world." All the conquerors, he says, without making a single exception. Your majesty already knows the instructions and orders that those who go to new conquests carry . . . and how they work to observe them, and are of as good a life and conscience as Las Casas . . . [who seeks] to exaggerate and make worse the evils and sins that have occurred. . . .

During the last ten years the natives of this land have diminished greatly in number. The reason for it has not been bad treatment, because for many years now the Indians have been well treated, looked after, and defended; rather the cause has been the great diseases and plagues that New Spain has had. . . .

Source: Qtd. in Marvin Lunenfeld, ed., *1492: Discovery, Invasion, Encounter* (Lexington, MA: D. C. Heath, 1991), 212–4.

DOCUMENT 10

Domingo de Santo Tomás, a Spanish Dominican friar who spent time in Peru in the mid-sixteenth century and learned the Quechua language, wrote about Spanish explorations to the Amazon in search of gold.

Some two or three hundred Spaniards go on these expeditions, [but] they take two or three thousand Indians to serve them and carry their food and fodder. . . . Few or no Indians survive, because of lack of food, the immense hardships of the long journeys through wastelands, and from the loads themselves.

Source: Qtd. in David E. Stannard, *American Holocaust: Columbus and the Conquest of the New World* (New York: Oxford University Press, 1992), 88.

DOCUMENT 11

Andrés Chacón, an *encomendero* of Peru, wrote in 1570 in a letter to his brother in Spain as follows:

The Indians give me nothing, that is, I take little from them and have expenses for priests and other things for them and . . . since they are on the main highway and have been mistreated and destroyed, few of them remain. Once there were more than 2,000 Indians, and now there are about 200. I consider them as if they were my children; they have helped me earn a living. . . . I have given them 220 pesos in income [and] I will leave them free of

tributes when I die, so that whoever enjoys the tributes will not mistreat the Indians to get his revenue. Probably you there will say that it would be better to give this to my relatives than to the Indians. But I owe it to these children who have served me for thirty-odd years; it is a debt of life, and if I did not repay it I would go to hell. I am obliged to do what I can for my relatives, but if I don't, I won't go to hell for it. . . . I have sheep, goats, and pigs here, and I did have cows, but recently I sold them because they damaged the Indians' crops.

Source: Qtd. in James Lockhart and Enrique Otte, trans. and eds., *Letters and People of the Spanish Indies: Sixteenth Century* (New York: Cambridge University Press, 1976), 67–8.

DOCUMENT 12

A member of Francis Drake's expedition to Florida in 1585 reported.

The wilde people . . . died verie fast and said amongst themselves, it was the Inglisshe God that made them die so fast.

Source: Qtd. in Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, CT: Praeger, 2003), 40.

DOCUMENT 13

Thomas Hariot, hired by Raleigh for his astronomical and cartographic expertise, traveled to Virginia where he learned the Algonquin language. He wrote in 1588.

[Within a few days of our departure from their towns] the people began to die very fast, and many in a short space; in some towns about twenty, in some forty, and in one six score [120], which in truth was very many in respect to their numbers. . . . The disease . . . by report of the oldest men in the country never happened before. . . . All the space of their sickness, there was no man of ours known to die, or that was especially sick. [Also], some of our company towards the end of the year, showed themselves too fierce, in slaying some of the people, in some towns, upon causes that on our part, might easily enough have been borne.

Sources: Qtd. in Russell Thornton, *American Indian Holocaust and Survival: A Population History since 1492* (Norman: University of Oklahoma Press, 1987), 66–7. Language modernized by Anne Chapman.



DOCUMENT 14

José de Acosta, a Spanish Jesuit missionary writing before 1600, claimed that by the 1580s, most of the peoples of the Antilles and the lowlands of New Spain, Peru, and the Caribbean shores had been killed or driven off, due to disease and Spanish brutality.

Of thirty parts of the people that inhabit it, there wants twenty-nine; and it is likely the rest of the Indians will in short time decay.

Source: Qtd. in Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, CT: Praeger, 2003), 38.

DOCUMENT 15

Hernández Arana, descendant of the last ruler of the Guatemalan Maya Cakchiquels, wrote this in his *Annals of the Cakchiquels* in the second half of the sixteenth century.

[During 1519] the plague began, oh my sons! . . . It was truly terrible, the number of dead there were in that period. . . . [In 1521] the plague began to spread. . . . The people could not in any way control the sickness. . . . Great was the stench of the dead. . . . The dogs and the vultures devoured the bodies. The mortality was terrible. Your grandfathers died, and with them died the son of the king and his brothers and kinsmen. . . . [In 1560] the plague which had lashed the people long ago began [again] here. . . . [A] fearful death fell on our heads . . . Now the people were overcome by intense cold and fever . . . then came a cough growing worse and worse . . . and small and large sores broke out on them. The disease attacked everyone here. . . . Truly it was impossible to count the number of men, women, and children who died this year. My mother, my father, my younger brother, and my sister, all died. . . .

Source: *The Annals of the Cakchiquels*, qtd. in Marvin Lunenfeld, ed., *1492: Discovery, Invasion, Encounter* (Lexington, MA: D. C. Heath, 1991), 312–3.

DOCUMENT 16

After the Spanish conquest, an anonymous Mayan of Mexico wrote, probably in the sixteenth or early seventeenth century, about his people before the coming of the Spaniards in *The Book of Chilam Balam of Chumayel*.

There was then no sickness; they had no aching bones; they had then no high fever; they had then no smallpox; they had then no burning chest . . . they had then no consumption; they had then no headache . . . The foreigners made it otherwise when they arrived here.

Source: *The Book of Chilam Balam of Chumayel*, qtd. in Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, CT: Praeger, 2003), 36.

DOCUMENT 17

In 1622–23, authorities of the Virginia colony had the following to say about the local Native American tribes.

[We recommend that, children being spared, soldiers should pursue the adults], surprisinge them in their habitations, intercepting them in their hunting, burninge their Townes, demolishing theire Temples, destroyinge their canoes . . . carrying away their Corne, and depriving them of whatsoever may yield them succor or relief . . . rooting them out for being longer a people upon the face of the Earth. [Virginia Company of London, 1622]

[Against] these barberous and perfidious enemys, wee hold nothing injuste, that may tend to their ruine. [Virginia Council of State, 1623]

Source: Qtd. in Alden T. Vaughan, “Expulsion of the Savages’: English Policy and the Virginia Massacre of 1622,” *William and Mary Quarterly* 35, 1 (January 1978), 77–8.

DOCUMENT 18

Increase Mather, a New England colonist, clergyman, and first president of Harvard College, saw Indian disease as divine intervention. He wrote this in 1631. Elsewhere, he observed that entire towns of New England Indians were destroyed by smallpox, with not even a single survivor.

About this time [1631] the Indians began to be quarrelsome touching the Bounds of the Land which they had sold to the English, but God ended the Controversy by sending the Smallpox amongst the Indians . . . who were before that time exceedingly numerous.

Source: Russell Thornton, *American Indian Holocaust and Survival: A Population History since 1492* (Norman: University of Oklahoma Press, 1987), 75.

DOCUMENT 19

Two English colonial governors in North America during the seventeenth century wrote:

- a) For the natives, they are neere all dead of small Poxe, so as the Lord hathe cleared our title to what we possess. (John Winthrop, first governor of the Massachusetts Bay Colony)
- b) [Thank God for sending] smallpox &c. to lessen their numbers: so that the English, in Comparison with the Spaniard, have but little Indian blood to answer for. (A governor of South Carolina)

Sources: Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (New York: Cambridge University Press, 1986), 208.

Alfred W. Crosby, “The Columbian Voyages and Their Historians,” in *Islamic and European Expansion*, ed. Michael Adas (Philadelphia: Temple University Press, 1993), 158.



DOCUMENT 20

In 1641, Miantonomo, a Narragansett chief from Long Island, tried to talk the Montauks into a coordinated attack upon the English, as follows.

[Y]ou know our fathers had plenty of deer and skins, our plains were full of deer, as also our woods, and of turkies, and our coves full of fish and fowl. But these English having gotten our land, they with scythes cut down the grass, and with axes fell the trees; their cows and horses eat the grass, and their hogs spoil our clam banks, and we shall all be starved. [Therefore, let us] fall on and kill men, women, and children, but no cows, for they will serve to eat till our deer be increased again.

Sources: Qtd. in James Axtell, *Beyond 1492: Encounters in Colonial North America* (New York: Oxford University Press, 1992), 119–20.

Russell Thornton, *American Indian Holocaust and Survival* (Norman: University of Oklahoma Press, 1987), 60, epigraph.

What Numbers to Believe?

Twentieth-century scholars were creative in their use of a wide range of sources to get at population figures for the Americas from 1492 onward. Their results varied widely, and hot disputes about the size of Native American populations continue. Note that there are also large differences in estimates of pre-eighteenth century populations for other regions of the world.

The following have been used most widely to arrive at estimates for America:

1. **Europeans' reports** produced by explorers, conquistadors, missionaries, and others.
Problems: Information is lacking on how the numbers reported were arrived at. Very few are known to have been personal counts. Bias and unintentional inaccuracy may be present. Reports were not systematically made for every populated part of the continent.
2. **Early Church records** of numbers converted, baptized, and paying tribute. *Problems:* No way to tell what proportion of the total population at the time these represented. Possible temptation to inflate numbers of converted and underreported tribute.
3. **Later Church, government, and other censuses** of Native American populations.
Problems: Both their accuracy and the proportion of the total population they included have been questioned. Censuses did not include every populated area, nor were they uniform in what they counted. People counted could have been male heads of household, payers of tribute, those baptized, recorded births, and so on.
4. **Mortality rates** used to calculate backward from much later and more reliable population figures. The assumed average yearly mortality would be deducted to arrive at an earlier population size. *Problems:* Using estimates from contemporary descriptions, same as in number 1 above. Using the known mortality rates in modern times of the diseases responsible for high death rates assumes an overwhelming role for disease. Does not allow for several diseases, not all of which can be identified with certainty. Not being able to allow for the differences in death rates owing to age, general health, treatment of the sick, and other factors, all unknown.
5. **Ecological estimates** based on how many people could be fed with a known crop, produced by known methods (e.g., were fields left unplanted every other year, or every third?) in the size area where the crop was known to be grown or could have been grown. *Problems:* Just because a certain number could be fed, that many did not necessarily actually live there. Finding out what size fields were actually planted with what, and how, poses many difficulties. Both crops and methods of production could unpredictably change over time.



DOCUMENT 1

Which Populations Did Well? Which Poorly? When?

Estimates of Changes in Population in Selected Regions, 1300–1700 (population in millions)

	1300	1400	1500	1600	1700
Americas	32 (28)	39 (30)	42 (41)	13 (15)	12 (10)
Comparison					
Africa	68 (67)	68 (74)	87 (82)	113 (90)	107 (90)
Europe	70 (73)	52 (45)	67 (69)	89 (89)	95 (115)
China	83 (99)	70 (112)	84 (125) [155]	110 (140) [231]	150 (205)
India	100 (50)	74 (46)	95 (54)	145 (68)	175 (100)

Note: Figures on the left are 1979 estimates (source 1); figures in parentheses are 1954 estimates (source 2); figures in brackets for China, 1500 and 1600, are from 1999 (source 3).

Sources: Based on J. R. Biraben, “Essai sur l’évolution du nombre des hommes,” *Population* 34 (1979), 16, qtd. in *Maps of Time: An Introduction to Big History*, David Christian (Berkeley: University of California Press, 2004), 345.

M. K. Bennett, *The World’s Food: A Study of the Interrelations of World Populations, National Diets, and Food Potentials* (New York: Harper, 1954), table 1, reproduced in André Gunder Frank, *ReOrient: Global Economy in the Asian Age* (Berkeley: University of California Press, 1998), 168.

Dennis O’Flynn and Arturo Giráldez, “Cycles of Silver: Global Economic Unity through the Mid-Eighteenth Century,” *Journal of World History* 13, 2 (2002): 400.



DOCUMENT 2

Just How Many Inhabitants of America Were There Before European Arrival Touched Off a Large-Scale Die-Off?

Some Twentieth-Century Estimates of America's Total Native Population in the 1490s (add 000)

Estimate	Date of Estimate
40–50,000	1924
50–75,000	1928
13,101	1931
8,400	1939
13,170	1945
15,500	1952
100,000	1964
90,043–112,554	1966
33,300	1967
43,000–72,000	1976

Source: Based on Russell Thornton, *American Indian Holocaust and Survival* (Norman: University of Oklahoma Press, 1987), 23, table 2.1.



DOCUMENT 3

Estimated Population of the European Countries That Had Early Contact with the Americas

Country	Approximately 1500
France	15,000,000
Italy	10,000,000
Spain	6.5–10,000,000
British Isles	5,000,000
Portugal	1,250,000
Netherlands	less than 1,000,000
Total Europe (except Russia)	60–70,000,000

Source: Based on Russell Thornton, *American Indian Holocaust and Survival: A Population History since 1492* (Norman: University of Oklahoma Press, 1987), 36–7.

DOCUMENT 4

Historian John H. Elliott in 2006 assumed agreement on a 90 percent population decline, despite wide disagreement on total population figures

Estimates of the total population of the Americas on the eve of the arrival of the first Europeans have varied wildly, from under 20 million to 80 million or more. . . . While the totals will always be a matter of debate, there is no dispute that the arrival of the Europeans brought demographic catastrophe in its train, with losses of around 90 percent in the century or so following the first contact. . . . Forms of sickness that in Europe were not necessarily lethal brought devastating mortality rates to populations that had not built up the immunity that would enable them to resist.

In Mesoamerica the smallpox which ravaged the Mexica . . . in 1520–21 . . . was followed . . . by waves of epidemics . . . 1531–4, measles; 1545, typhus and pulmonary plague; . . . 1550, mumps; 1559–63, measles, influenza, mumps, and diphtheria; 1576–80, typhus, smallpox, measles, mumps; 1595, measles. Comparable waves struck the people of the Andes. [Population decline] appears to have been of the order of 90 percent, although there were significant regional and local variations.

Source: John H. Elliott, *Empires of the Atlantic World: Britain and Spain in America, 1492–1830* (New Haven, CT: Yale University Press, 2006), 64–5.

DOCUMENT 5

For comparison: Examples of European mortality rates from epidemics, 1346–1651

a) Die-offs [during the Black Death, a disease apparently new in Europe at least since about 500 CE] in Europe varied widely. Some small communities experienced total extinction. Others . . . seem to have escaped entirely. . . . The plague . . . was propagated not solely by fleabites, but also [by] coughing or sneezing of an infected individual. [Such infections] were 100 percent lethal. . . . In recent times, mortality rates for [flea-transmitted bubonic plague] varied between 30 and 90 percent. [However, in the fourteenth century not] everyone was exposed. Overall, the best estimate of plague-provoked mortality, 1346–50, in Europe as a whole is that about one-third of the total population died. . . . Mortality clearly varied sharply from community to community. . . . Moreover . . . recurrent plagues followed at irregular intervals [about every 10 years]. A loss of 30 to 40 percent is [confirmed] by local studies in [Italy], France, Spain, England, and Germany.

b) In Uelzen [Germany] the plague of 1597 carried off 33 percent of the population . . . Santander in Spain was virtually wiped off the map in 1599, losing 83 percent of its 3000 inhabitants. . . . Mantua [Italy] in 1630 lost nearly 70 percent of its population, Naples and Genoa in 1656 nearly half theirs. . . . [In a European population in the Americas] over the seventeenth century . . . [among] the English emigrants . . . in Barbados, it took approximately 150,000 immigrants to produce a population of 20,000 . . .

Sources: William H. McNeill, *Plagues and Peoples* (Garden City, NY: Anchor Books, 1976), 147–8. Massimo Livi Bacci, *A Concise History of World Population*, trans. Carl Ipsen (Malden, MA: Blackwell, 1997), 49.

M. J. Seymour, *The Transformation of the North Atlantic World, 1492–1763: An Introduction* (Westport, CT: Praeger, 2004), 156.

DOCUMENT 6

Historian and historiographer David P. Henige in 1998 cast doubt on population estimates for pre-European contact with Native Americans.

In the 1930s the population of the western hemisphere at the time of the arrival of the Europeans was estimated at 8 million. Some fifty years later it was asserted that . . . no fewer than 51.6 million American Indians were living in central Mexico alone, and up to 70 million were living elsewhere. . . . [T]his change was not grounded in an increase in the amount of direct evidence available. In fact, during this fifty-year period there was no change in the evidence at all.

Source: David P. Henige, *Numbers from Nowhere: The American Indian Contact Population Debate* (Norman: University of Oklahoma Press, 1998), 23.



DOCUMENT 7

Demographer Massimo Livi Bacci in 1997 gave reasons for questioning a high population estimate for pre-conquest Central Mexico.

It is difficult to accept the [estimate for central Mexico's pre-conquest population, originally published in 1963 and regularly quoted since] of 25 million: given the restricted area in which the population must have been concentrated, its density would have been about 50 persons per square kilometer, considerably higher than that of the most densely populated country area of Europe at the time (Italy, with about 35 persons per square kilometer). Considering the fairly rudimentary technology of the indigenous population, the harshness of the terrain, and the moderate productivity of their agriculture, one is inclined to [accept the more careful estimate] of well below 10 million.

Source: Massimo Livi Bacci, *A Concise History of World Population*, trans. Carl Ipsen (Malden, MA: Blackwell, 1997), 58.

DOCUMENT 8

Historian Robert McCaa in 1995 cited agreement that the rate of Mexican population decline fell between 55 and 96 percent, and argued for multiple causes.

There is agreement that a demographic disaster occurred and that epidemic disease was a dominant factor. . . . But the role of disease cannot be understood without taking into account massive harsh treatment (forced migration, enslavement, abusive labor demand, and exorbitant tribute payments) and ecological devastation accompanying Spanish colonization. Killing associated with war and conquest was clearly a secondary factor, except in isolated cases. . . . [He added that] whatever the estimate of the size of population of central Mexico before the conquest, nine scholars out of ten estimate the population decline . . . [1519–95 was] somewhere between 55 and 96 percent.

Source: Robert McCaa, "Smallpox and Demographic Catastrophe in Mexico: What Can Spanish and Náhuatl Narratives Tell Us that Numbers Cannot?" Unpublished manuscript, 1995, qtd. in Massimo Livi Bacci, *A Concise History of World Population*, trans. Carl Ipsen (Malden, MA: Blackwell, 1997), 58, n. 56.



DOCUMENT 9

Historical demographer Ryan Johansson warned in 1982 of bias in population estimates.

The most important thing to remember in evaluating competing [population] estimates is that, with few exceptions, most are overtly or covertly influenced by . . . political . . . biases. Generally, the first estimates of the total number of inhabitants of the New World at the time of contact were contributed by “pro-Europeans.” . . . Europeans were regarded as colonizing a vast land with [few] people, and the subsequent demise or decline of the sparse native population was not seen as a tragedy . . . [High] population estimates by “pro-nativists” . . . created in and of itself the problem of explaining how so many people could seemingly disappear so fast.

Source: Qtd. in Russell Thornton, *American Indian Holocaust and Survival: A Population History since 1492* (Norman: University of Oklahoma Press, 1987), 35.

Does the Label Matter? The Question of Genocide

DOCUMENT 1

American studies scholar David E. Stannard argued in 1992 that what happened to Native Americans at the hands of Europeans was genocide.

The term “genocide” was coined by Raphael Lemkin in his book *Axis Rule in Occupied Europe*, published in 1944. . . . Under [his] definition, “genocide was the coordinated and planned annihilation of a national, religious, or racial group. . . .” Finally, in 1948, the Genocide Convention of the United Nations was adopted. . . . [It gave a definition as follows:] [G]enocide means . . . acts committed with intent to destroy, in whole or in part, a national, ethnical, racial, or religious group, as such: killing . . . [or] causing serious bodily or mental harm to members of the group; deliberately inflicting on the group conditions of life calculated to bring about its physical destruction; . . . imposing measures intended to prevent births within the group; forcibly transferring children of the group to another group.” . . . In light of the U.N. language . . . it is impossible to know what [happened] in the Americas during the sixteenth, seventeenth, eighteenth, and nineteenth centuries and not conclude it was genocide.

Note: This definition of genocide is still the official one, adopted in 2002. A total of 104 nations now support the International Criminal Court’s right to try cases of genocide according to it.

Source: David E. Stannard, *American Holocaust: Columbus and the Conquest of the New World* (New York: Oxford University Press, 1992), 279–81.

DOCUMENT 2

American historian James Axtell in 1992 urged caution about using “genocide” to describe what happened to Native Americans at the hands of Europeans.

The latest and most inclusive definition of *genocide* [from *Genocide: A Critical Bibliographic Review*, 1988] is simply “a form of one-sided *mass* killing in which a state or other authority *intends* to destroy a group, as that group and membership in it are defined by the *perpetrator*.” . . . “Genocide” . . . is historically inaccurate as a description of the vast majority of encounters between Europeans and Indians. Certainly no colonial government ever tried to exterminate all of the Indians as Indians, as a race, and you can count on one hand the authorized colonial attempts to annihilate even single tribes. . . . The vast majority of settlers had no interest in killing Indians—[they] were much too valuable for trade and labor. . . . [T]he vast majority of Indians succumbed, not to colonial oppression or conquistador cruelty—as real and pervasive as those *were*—but to new and lethal epidemic diseases imported *inadvertently* by the settlers. . . . Genocide, as distinguished from *other* forms of cruelty, oppression, and death, played a very small role in the European conquest of the New World.

Source: James Axtell, *Beyond 1492: Encounters in Colonial North America* (New York: Oxford University Press, 1992), 261–3.

LESSON 2

Animals, Plants, People, and Goods on the Move

Introduction

Teachers may wish to select among the twenty activities offered here to use in their classrooms.

Activities

Plants and Animals

1. What differences would you expect the introduction of new kinds of plants and animals to make in the places where they became newly established? What advantages did they bring to the lives of the peoples to which they were introduced? Referring to Student Handouts 2.1.1 and 2.2.1, what evidence is there for any differences they made?
2. What reasons can you give why European domestic animals in America multiplied far faster than they did in their native habitats? Consider food supply, competition, and predation.
3. Plan a menu for two meals, one using only ingredients native to the Americas, the other only native Afroeurasian ones. If you were a European in America during the first decades of the sixteenth century and had to rely entirely on native foods, which of the latter would seem least familiar? Which might appeal to you most? What of your accustomed diet would you miss most? If you were an Amerindian, which of the imported European foods would be most unfamiliar? Which of them might appeal to you most? Why?
4. Compare Student Handout 2.2.2, Documents 1 and 2. Consider the reasons why transplanting the crops mentioned here was undertaken. Who did it, how, and with what results? Who benefited and how? Are there other ways that you can think of that plants and animals could have been introduced to one side or other of the Atlantic? What?
5. Using as a pattern Student Handout 2.2.2, Document 1, Document 2, or a combination of them, create a believable story about “How the European Earthworm Came to North America.” For information on how this happened, see Charles C. Mann, “America Found and Lost” *National Geographic*, 211, 5 (May, 2007): 34, 37.
6. If you were the adviser to the ruler of a country in Afroeurasia, and you wanted to convince her or him to require that farmers grow certain crops native to the Americas, which crop or crops would you choose and what information about the advantages of this crop would you present?

7. What questions would you ask that might help you better understand the consequences of the presence of Afroeurasian plants and animals in America and the presence of American plants in Afroeurasia from about 1550 on?

People

8. Compare the information about Native Americans in Student Handout 2.2.3, Document 2, with your recommended population figure in answer to question 14 in Lesson 1.
 - a. How might you use the former to support or to modify your recommendation? Explain.
 - b. Lesson 1, question 14 is, Why does the estimated size of Native American populations at any time between 1490 and 1650 matter? Why do you think there is so much disagreement and controversy about population figures at the time of, and after, the European conquests in America? What choices do historians have in dealing with this situation? What ought they to do? Why?
9. Compare the movement of peoples from Europe to the Americas, from the Americas to Afroeurasia, and from Africa to the Americas during the period of about 1500 to 1650. How did these movements differ? In what way(s) were they similar? Consider who initiated the transatlantic crossings, the reasons for the crossing in each of the three cases, the numbers involved, the kinds of people making the crossing, and whether the crossing was one way only or not. What reasons can you give for the differences and the similarities? (This activity could serve as assessment.)
10. Compare European attitudes toward Native Americans on the one hand and Africans brought to the Americas on the other. In what ways were they different? In what ways were they similar? What reasons for the differences could you suggest?
11. What was there in the recent experiences or cultural traditions of the Spanish and English regarding peoples different from themselves on the eve of the crossings to the Americas that might have influenced their attitudes toward Native Americans or to Africans? What is there in the relatively recent experiences of Americans today with peoples different from themselves that might have influenced their attitudes toward people of Iraq from 2003 to the present?
12. Explain what you think the consequences might have been of few women among Europeans relative to men moving to the Americas in the sixteenth century.
13. List as many reasons as you can for the increasing demand for imported African slaves in America before 1650. Why was there increasing demand for workers of any kind? What were the problems in European eyes with available workers other than African slaves? What did they see as the advantages of using African slaves?
14. What changes in African slaves' numbers and experience in America from 1492 to 1650 can you identify?

15. What impact would leaving home and crossing to a new continent have had on the people involved in each of the cases in question 9? How, if at all, would moving to a new continent have differed from moving elsewhere within their home country?

Products

16. In what ways did Spanish America's imports and exports change from 1493 to 1650? In what ways did they remain the same? How would you explain the changes and continuities?
17. Compare the trade of Spanish America with the trade of Portuguese America to 1650. What were the similarities and differences? Which would you say had the bigger worldwide impact? Support your argument with evidence.
18. What reasons can you give for the important part played by silver in the economies of Spain on the one hand and China on the other?
19. Would you agree with the statement that "during the century or so between the 1540s and the 1640s, silver was bought and sold worldwide, and wherever it was bought, sold, or used, it influenced most peoples' lives in some way?" Why or why not?
20. Evaluate the statement that "between 1550 and 1650, the whole world economy was entangled in a global silver web." What evidence in this lesson could you use to support the statement? What evidence would lead you to question or modify it? This activity could serve as assessment.

Extension Activity

Research modern slavery. Where does it still occur? What forms does it take? How do these forms compare to types of unfreedom imposed by Spaniards on Native Americans, by Africans on each other, and by Europeans on Africans in the Americas? Have definitions of slavery changed? If so, how? What, if anything, do all things referred to as "slavery" have in common? The Internet may be a good source of information on slavery in today's world.

Animals and Plants Crossed the Atlantic Both Ways

Some of the movements in the Columbian exchange of this period were heavily one-directional, for example, the movements of domestic animals, weeds, and disease microorganisms. Others were two-directional, as was the case with cultivated plants. The passage of some plants was deliberately engineered by humans. For instance, ships sailing to America were required by the Spanish Crown to carry seeds, cuttings, roots, and breeding stock. Europeans, for example, deliberately introduced olive trees. But many plants and some animals arrived uninvited. Seeds of European weeds such as thistles, dandelions, and many others survived on sailors' clothes and in the earth often used as ships' ballast. Old World rats invaded the New World as stowaways. All these thrived in their new habitat, unlike the American ragweed, goldenrod, and others that never got a foothold in Afroeurasia. Turkeys were widely raised for food in Europe. But while cattle, pigs, horses, goats and, more rarely, sheep in America multiplied explosively on their own in the wild, turkeys never did so in Europe.

Afroeurasian people, animals, and plants transformed the ecology in large areas of the Americas. The hordes of Old World feral livestock contributed to erosion in the Americas. Huge herds of cattle and horses roamed the grasslands. Overgrazing in a number of places led to the replacement of pasture with scrub growth. European weeds and grasses took over large areas. They were more adapted than many native plants to being trampled on or chewed to ground level by grazing. After various experiments with European crops that failed in the Americas because climate or soil conditions were wrong, successful natural niches were often found. Forests also fell as immigrant settlers cut down trees to make room for fields. Crops such as sugarcane, tobacco, and wheat began to be grown on a large scale not only for home consumption but also for export, requiring increasing clearing of land. Increasing transoceanic trade required more ships, which took large amounts of timber to build. Smelting metal and shoring up mine shafts for silver production, and boiling down the sap from sugarcane on huge plantations, took wood from forests in enormous quantities. English earthworms established themselves in New England's forests, destroying the understory litter needed for the survival of tree seedlings there.

In the case of people, some crossed the Atlantic of their own free will, either because of what they hoped to gain in work and wealth or because they were driven away by conditions at home. Others were forced to cross against their will.

The exchange of goods before 1650 overwhelmingly favored American gold and silver, which, in turn, lubricated the trade of many other commodities around the world.

DOCUMENT 1

Valuable Plants Confined to One Side of the Atlantic before 1492 That Crossed to the Other Side and Flourished There

Cultivated plants of American origin established in Afroeurasia by about 1650	Nourishment value: millions of calories per hectare that the crop may produce	Cultivated plants of Afroeurasian origin established in the Americas by about 1650	Nourishment value: millions of calories per hectare that the crop may produce
Maize (corn) *+ #	7.3	Wheat	4.2
Potatoes * +	7.5	Barley	5.1
Sweet potatoes +	7.1	Rice	7.3
Cassava (manioc) #	9.9	Oats	5.5
Vanilla		Sugarcane	
Peanuts		Olives	
Tobacco		Peaches	
Beans (several types)		Okra	
Squash		Cabbage	
Tomatoes		Spinach	
Chili peppers		Turnips	
Cocoa		Mustard	
Pineapple		Coffee	

* In Europe, maize and potatoes became significant only after 1650.

+ In China, sweet potatoes were grown by the 1560s. They grew on earlier unproductive land, and were unattractive to locusts. Along with maize and potatoes, sweet potatoes became staple food crops in China in the seventeenth century. The introduction of new crops resulted in large-scale Chinese migrations to previously thinly populated and unproductive areas.

In Africa, cassava (which keeps well in the ground for long periods, is not eaten by locusts and, unlike surface-growing crops, is not trampled by animals or soldiers) inspired “a veritable agricultural revolution in the seventeenth century, enabling the population to grow to previously unattainable levels . . . Maize had similar consequences a little later.”

Sources: André Gunder Frank, *ReOrient: Global Economy in the Asian Age* (Berkeley: University of California Press, 1998), 60.

Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (New York: Cambridge University Press, 1986), 154 (spinach), 157 (peach).

Luis Martin, *Daughters of the Conquistadores: Women of the Viceroyalty of Peru* (Albuquerque: University of New Mexico Press, 1983), (olives) 42.

Paula de Vos, "The Science of Spices: Empiricism and Economic Botany in the Early Spanish Empire," *Journal of World History* 17, 4 (2006): 422 (ginger).

U. P. Hedrick, ed., *Sturtevant's Edible Plants of the World* (New York: Dover, 1972), 48, 59, 136, 212, 303, 314, 343, 353, 384, 422, 545, 568, 591.

* William H. McNeill, *Plagues and Peoples* (Garden City, NY: Anchor Books, 1976), 317, n. 58.

+ André Gunder Frank, *ReOrient: Global Economy in the Asian Age* (Berkeley: University of California Press, 1998), 60.

Hugh Thomas, *The Slave Trade* (New York: Simon & Schuster, 1997), 133.

DOCUMENT 2

Valuable Animals Confined to One Side of the Atlantic before 1492 That Crossed to the Other Side and Flourished There

Domestic animals of American origin established in Afroeurasia by about 1650	Domestic animals of Afroeurasian origin established in the Americas by about 1650
Turkeys	Cattle
	Pigs
	Sheep
	Horses
	Goats
	Chickens
	Honeybees
	Dogs (bigger and fiercer than American ones)

The only other domestic animals in the Americas were high-altitude adapted llamas and alpaca, guinea pigs, muscovy ducks, and small dogs. None of these became established in Afroeurasia.

Sources: Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, CT: Praeger, 2003), 74–5, 92.

Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (New York: Cambridge University Press, 1986), 188.

Unofficial and Official Introductions of Afroeurasian Plants to the Americas

DOCUMENT 1

How Wheat and Olive Trees Came to Peru: A Twentieth-Century Historian's Account

A few months after the foundation of Lima [in 1535], Inés [Muñoz, sister-in-law to Pizarro and one of the dozen or so women among the founders of that city] received from Spain a barrel filled with rice. . . . One day Inés sat to pick and clean some of the rice. . . . [While doing so, she] noticed a few grains of wheat mixed in with the rice which she picked out carefully with the intention of planting them to see if wheat would grow in Peru. She planted a few grains of wheat in a flowerpot “with the same care and attention she would give carnations or sweet basil.” Inés took unusual care of her flowerpot, and was delighted when a bundle of large, healthy spikes of wheat grew from the few grains she had planted. . . . [T]he first spikes of wheat were threshed by hand and Inés replanted her first tiny crop. . . . [W]ith the intense care and interest of Inés Muñoz, the wheat multiplied so much that within three or four years the production of bread began in Lima. . . .

[Her second husband in 1560] returning from a trip to Spain and well aware of what would please Inés most . . . brought to Lima the first olive trees to arrive in Peru. . . . Only two or three survived the long journey. . . . [These] were protected like a rare treasure and were planted with the utmost care in [Inés'] vegetable garden. . . . Day and night a group of slaves accompanied by Castilian watchdogs kept a vigil . . . [but] one of the olive trees was stolen one night from the garden to reappear months later on the frontier of Chile. In Chile, the stolen tree multiplied with ease, and in a few years groves of olive trees overlooked the Pacific Ocean.

Source: Luis Martin, *Daughters of the Conquistadores: Women of the Viceroyalty of Peru* (Albuquerque: University of New Mexico Press, 1983), 39–40, 42.

DOCUMENT 2

How the Government Worked to Get Ginger Grown in Mexico: A Twenty-First Century Historian's Account

The transplantations [of spices from the East Indies to the Americas] took place through a combination of efforts on the part of the state in coordination with colonial leaders and local [businessmen]. . . . The earliest evidence of long-distance transplantation of spice in the Spanish Empire took place sometime in the 1550s and involved the transport of spice seeds from the East Indies to New Spain [Mexico]. . . . It seems they were smuggled out of Portuguese India and came [into] the possession of Antonio de Mendoza, the first Viceroy of New Spain, who was granted a monopoly to plant [and cultivate] them. . . . The cultivation of ginger, . . . a highly prized spice . . . was clearly successful on the island of Hispaniola. . . . By the end of the sixteenth century . . . ginger constituted the island's main export. . . . In the 1580s, it received higher prices in Europe than sugar did



. . . [and] two million pounds of ginger reached Seville annually. . . . In 1606 . . . of 9,648 slaves in Hispaniola, 6,742 worked producing ginger while only eight hundred served in the sugar mills. [However, plans for the cultivation in Spanish America of pepper, cloves, and cinnamon never got off the ground.]

Source: Paula de Vos, “The Science of Spices: Empiricism and Economic Botany in the Early Spanish Empire,” *Journal of World History* 17, 4 (2006), 415, 417, 422–3.

Humans Crossing the Atlantic, Free and Forced

Why did ever-increasing numbers of people cross the Atlantic? Those earliest to cross, overwhelmingly from Spain, were attracted by new horizons. They looked to find heathen whom they could convert for the glory of God; adventure, whereby to gain glory for themselves and their ruler; and gold, to get rich quickly. Others came from Europe for a life that promised them more opportunities for improving their economic and social circumstances. Some Europeans left for America to escape poor conditions at home: war or famine, economic hardship, isolation, suspicion, or discrimination because of their religion.

Increasing numbers of men and women were carried from sub-Saharan Africa to America, usually in chains and almost always because they had no choice. In 1603, King al-Mansur of Morocco in North Africa suggested to Queen Elizabeth I of England that they jointly colonize America, with Moroccans undertaking the actual settlement. Nothing came of this idea.

Smaller but not insignificant numbers went from America to Afroeurasia, mostly as unwilling slaves, but some also voluntarily.

DOCUMENT 1

Numbers of Europeans and Africans that Left for the Americas, by National Origin and Status

	Before 1580	1580–1640
Spain	139,000	188,000
Portugal	58,000	110,000
Britain	0	87,000
France	0	4,000
Netherlands	0	2,000
Included among those above:		
Indentured servants	0	49,000
Convicts and prisoners	3,000	8,000
African slaves	68,000	607,000

Note: These numbers are scholars' estimates.

Source: Based on David Eltis, ed., *Coerced and Free Migration: Global Perspectives* (Stanford, CA: Stanford University Press, 2002), 62, 67.



DOCUMENT 2

Results of the Crossings: What Main Groups Made Up Inhabitants of Spanish and Portuguese America?

	1570		1650	
	Spanish America	Brazil	Spanish America	Brazil
Native American	8,907,150	800,000	8,405,000	700,000
African	230,000	30,000	715,000	100,000
Mestizo	Included with African		348,000	50,000
Mulatto	Included with African		236,000	30,000
European	118,000	20,000	655,000	70,000

Note: The scholar citing the above states that, while these figures can only be tentative, “the weight of existing evidence suggests that [the] totals for all main groups should be revised downward, and those for [Native Americans] substantially.”

Source: Based on Angel Rosenblat, *La población indígena y el mestizaje en América, 1492–1959*, Vol. 1 (Buenos Aires: Editorial Nova, 1954), 59, qtd. in Lyle N. McAlister, *Spain and Portugal in the New World, 1492–1700* (Minneapolis: University of Minnesota Press, 1984), 344–5.

DOCUMENT 3

Europeans: Mostly Free, Crossing East to West—and Sometimes Back Again

Europeans did not in the beginning flock eagerly to the Americas. By 1570 there were still only some 140,000 of them in Spanish and Portuguese America. Home governments worked hard to get their people to move and settle there, because permanent European presence in the Americas depended on continuous immigration. There were two reasons for this.

First, death rates among the early settlers were very high. Scarce, unreliable, and unfamiliar food supply; heavy work under often brutal conditions; and sickness took by far the most lives. European casualties in battles with Native Americans were typically low. During the first decade in Hispaniola, probably two-thirds of the Spaniards there died, and nearly half of the English immigrants perished of disease and exposure during their first winter in New England.

Second, women were a much lower proportion of the immigrants from both Iberia and England than men. They were only 5 percent of immigrants in the first two decades after 1492, 16 percent in the two decades up to 1560, and 28 percent in those up to 1580. During the sixteenth century, Portugal sent orphan girls and even “women of bad repute” to provide wives for male settlers in Brazil. Spain’s rulers promoted the marriage of Spaniards to Native Ameri-

cans (though not Africans). A white population could not keep up, let alone add to, its numbers by natural increase alone. However, the numbers of children born to variously mixed parentage of Amerindian, European, and African unions in Spanish, Portuguese, and French (though not English) territories created large populations with various names, among others, *mestizos*, *mulattoes*, and *metis* (see Student Handout 2.2.3, Document 2). Many, but not all of these, were slaves.

Both the Spanish and the Portuguese were familiar with slavery in their home countries. At the start of the sixteenth century, both had substantial populations of slaves from North Africa and West Africa. Some were captured in raids, but most were bought. In 1550 there were about 9,000 African slaves in Lisbon, doing a variety of jobs in government offices, hospitals, noble households, craft shops, and on farms. There were also a few white slaves from the Caucasus, as well as Slavs and Turks.

Some Europeans who arrived in the Americas were convicts, their passage forced. Many British and French immigrants arrived as indentured servants. That is, they were bound by a legal contract to serve their employer without pay for a number of years, typically four to ten, in return for having their passage paid and their housing and food provided during their indenture. Their experience could be a poor one in the New World, just as in their home countries. They had little protection from being badly fed and worked to excess, or from dying of neglect when they were sick. But in America they could sometimes run away, a disadvantage for their employers.

Spanish law forbade foreigners from settling in Spain's American territories. But in North America, between 1600 and 1650, Finns, Swedes, German Protestants, Jews, and Danes, as well as the British, French, and Dutch established settlements. Some Europeans went to the New World but did not stay. These included would-be settlers and explorers who found opportunities in the New World less splendid than they had thought; those who had gone only to get rich, and were glad to leave having done so; officials returning home at the end of their tour of duty; churchmen recalled by their superiors; and merchants who came temporarily to seek trade prospects.

Sources: John H. Elliott, *Empires of the Atlantic World: Britain and Spain in America, 1492–1830* (New Haven, CT: Yale University Press, 2006), 49, 51, 99.

Jack D. Forbes, *Africans and Native Americans: The Language of Race and the Evolution of Red-Black Peoples* (Urbana: University of Illinois Press, 1993), 125–7, 185–6, 246–7.

Lyle N. McAlister, *Spain and Portugal in the New World: 1492–1700* (Minneapolis: University of Minnesota Press, 1984), 115, 276, 283.

M. J. Seymour, *The Transformation of the North Atlantic World, 1492–1763* (Westport, CT: Praeger, 2004), 198.

Thomas Bender, *A Nation among Nations: America's Place in World History* (New York: Hill and Wang, 2006), 47.



DOCUMENT 4

Native Americans: Mostly Forced Crossings, West to East— and Rarely Back Again

A number of preconquest Native American societies were familiar with slavery, among others the Aztecs, Maya, Caribs, and the Brazilian Tupi. Slaves were often prisoners of war or people enslaved as punishment for crimes. Others were orphans, debtors, or those who sold themselves or their children because of economic hardship. Among the Aztecs, slaves, though liable to be sacrificed, could own property, including slaves of their own. They could also buy their own freedom. In pre-1492 Mexico, it has been estimated that slaves made up about 10 percent of the population.

Starting only a few years after Columbus's first voyage, many Native Americans were sold in Spain and Portugal as slaves. Their numbers cannot be known with any certainty. When enslaving Native Americans became illegal, slavers kept no records. In records that exist, many slaves were classified, albeit inconsistently, only by their color, being referred to as white, black, brown, dark, stewed quince color, or tawny. Persons specified as "Indians" were variously described, using all the different color labels. Some of those with only a color label, whichever color it was, were likely to have been Native Americans. Their numbers, however, cannot even be guessed. Those in the list below were identified in ways that makes it certain they were Native Americans. Some high-status Native Americans and part-Native Americans traveled to Europe freely. Pocahontas did so as a visitor. The son of La Malinche (Doña Marina), who served Cortés, died fighting pirates with Cortés in the Mediterranean.

1495	One of Columbus's associates took 400 Native Americans from the Caribbean to Spain for sale as slaves. Half died on arrival, the cause given as "the unaccustomed cold."
1499	Amerigo Vespucci "took by force" 232 inhabitants of the Bahamas, 200 of whom lived to be sold as slaves in Spain.
1500	236 enslaved Native Americans were landed in Spain.
1502	The Portuguese king licensed a company of merchants to send six ships a year to Brazil "to trade in brazilwood and slaves." From then on, Native Americans were fairly regularly shipped to Portugal.
1503	A Spanish explorer seized 600 Americans, the majority of whom were sent to Spain.
1509	From this time on, significant numbers of Native Americans from Brazil journeyed to and settled in France.
1511	A Portuguese ship carried some 35 American slaves to Portugal from Brazil.
1500–1525	41 slaves were registered in the Spanish city of Seville as being from the Americas.
1503–1550	Large numbers of slaves from the Americas were taken to Spain, in spite of a law introduced in 1542 forbidding the enslavement of Native Americans.



1530s–1549	A royal decision allowed 216 American slaves a year to be sent to Portugal for sale. It was not only as slaves, however, that Native Americans went to Spain. Many were sent as interpreters, entertainers, and curiosities or to be baptized and educated.
1550	A sizeable group of Native Americans from Brazil lived in the French city of Rouen. Some of them put on a spectacle there for King Henry II that year.
1560s	So many Native Americans traveled to France and Switzerland that Portuguese Jesuits expressed serious concern over Protestant heretics taking Brazilians to Europe for training in heresy.
1576	A Native American chief complained to the Spanish that the Portuguese were carrying his people's children off "to Portugal to be sold as slaves."
Late 1500s	The congregation in one of Lisbon's churches had within it a fraternity with membership limited to "Indians."
From 1590s	Dutch warships often captured Spanish and Portuguese ships laden with slaves, some of whom were from the Caribbean, others from North America. A contemporary wrote of Brazilians taken to the Netherlands, taught Dutch as well as reading and writing, and then "went about in the world of the university and business."
1603	The English began to carry off kidnapped Native Americans from New England and Virginia to England. Some of them gave a demonstration of canoe handling on the River Thames in London. In the next few years, "taking captured Indians to England had become routine. Would-be colonizers . . . hoped to impress the captives . . . to learn as much as they could about the way of the land, and to acquire mediators with the local Indians." Others were sold as slaves.
1605	From this date on to the end of the century, a number of Inuit people were taken to Denmark and the Netherlands.
1607	Some new slaves from the Americas were recorded as introducing the smoking of tobacco to Seville in Spain.
1600s	Many Native Americans from Brazil went to Angola in Southwest Africa as soldiers, peddlers, businessmen, prostitutes, and exiles. They were also used as military auxiliaries to Portuguese soldiers in Africa. Large numbers of Brazilians went to France as free visitors. Native Americans from New England were recruited to serve as sailors on English ships.
1631–1654	Numbers of Brazilian natives of the Tupi and Tapuya groups were sent to the Netherlands for education, as entertainers, and for diplomatic alliances.
1636	Native Americans from Brazil were numerous enough in Amsterdam in the Netherlands to have their own church.
1637	The Dutch expedition to conquer Portuguese forts on Africa's Gold Coast included many Tapuya soldiers.
1641	240 Americans of the Tupi group were part of the Dutch expedition that seized Portuguese forts in Angola. That year, the Tupi complained that their numbers were declining because so many of them were taken off to fight in foreign lands.
1642	Some 300 Brazilian natives fought alongside the Dutch military in São Tomé, an island off the West African coast, and helped conquer Axim in West Africa.

Sources: Based on Hugh Thomas, *The Slave Trade: The Story of the Atlantic Slave Trade, 1440–1870* (New York: Simon and Schuster, 1997), 89–90.

Jack D. Forbes, *Africans and Native Americans: The Language of Race and the Evolution of Red-Black Peoples* (Urbana: University of Illinois Press, 1993), 31–2, 34–5, 37–42, 46–7, 49–50, 53, 55, 57.

DOCUMENT 5

Africans: Forced Crossings, East to West—and Not Back Again

During the early period of the transatlantic slave trade, those who financed and ran it were mostly Portuguese and Spanish, but the English, French, Dutch, and other Europeans also soon took part. At least as important as the buyers were the sellers, African merchants and rulers familiar with slavery and the slave trade as long-established institutions.

The slaves carried to the Americas were taken from many different sub-Saharan societies. Most of them were prisoners of war (fought for reasons having nothing directly to do with the slave trade), or they were caught in raids made expressly to acquire slaves for sale. Some had been enslaved for debt or a criminal offense; some were “pawned” by parents to improve the family’s economic condition; some were kidnapped. Some sold themselves because of dire conditions, such as famine.

In Spanish America, Africans carried there remained slaves. This was not necessarily so in Portuguese Brazil. There, a master quite often stipulated that after his death his favorite mistress of African origin and his children by her (or them), as well as his loyal male slaves, would be set free. Some slaves in Portuguese Brazil could also buy their freedom by saving up modest wages. Masters paid wages, however low, as an incentive for high-quality work to those with skills in demand. In Portuguese territories these former slaves joined the slowly growing pool of free people of African and part-African origin. The dividing lines in the New World between those of European, Native American, and African descent were strictly drawn, but least so in Portuguese Brazil.

Whether enslavement of Africans was legal, and, if so, how it could be justified, was not asked before 1650, though these same questions were lengthily debated about Native Americans. In the Spanish Empire, Native Americans came to be thought of as subjects of the Crown, and therefore they had some rights. This did not apply to uprooted Africans.

Scattered and incomplete information suggests that women numbered about one-third of the African slaves imported before 1650. The working life of slaves was short, estimated at seven to ten years. Infant mortality was high. Therefore, natural increase among slaves was not enough even to maintain, let alone to increase, the slave population and to keep up with the increasing demand for labor. Plantation and mine owners found that continuous and increasing importation was necessary.

Until 1650 the transatlantic slave trade was small relative to its later dimensions. Probably it did not even reach the numbers of black slaves sold in the trade across the Sahara Desert during the same period. The total number of African slaves shipped to the Americas between 1492 and 1640 has been estimated at more than 600,000.

1501–1520

A trickle of Africans, already slaves in Spain, began to arrive in the Americas. Some were sent by merchants to sell goods on their behalf. Africans accompanied the conquistadors Balboa, Cortés, and others, mostly as personal slaves but some as comrades-in-arms. One of them was the first to plant wheat in Mexico. Another one, probably unknowingly, carried the smallpox infection there.

1510

Royal permission was given to export African slaves already in Spain to the Americas, and perhaps 50 African slaves were sent to the Americas yearly. During this time there were several changes of policy about the importation of African slaves to Spanish America. A point in favor of the trade from Spain's point of view was that Africans were stronger and more disease-resistant than Native Americans, and they were accustomed to working with domestic animals. Moreover, the steep drop in Native American populations caused a labor shortage not solved by interior raids for Native American slaves. And, probably most decisively, the Crown gained income from the licenses and taxes it imposed on the slave trade, though slave traders widely evaded them. Opponents argued that imported African slaves were dangerous. They often fled and then joined Native American populations, whom they sometimes urged to revolt against their European masters.

1520–1530

Eight thousand or more African slaves were imported during this decade, and the numbers grew fast thereafter. Their earliest work was as herdsman and miners.

1530

After this date, slaves to Spanish America were usually imported directly from Africa. They were considered easier to control because they were less likely to run away than those who had already spent some time in Spain before being carried off to the New World.

1542

The New Laws passed by the Spanish king in response to widespread criticism of Native American enslavement, especially by churchmen such as Las Casas, stated that an Indian could not be enslaved for any reason. While poorly enforced, the New Laws were expected to make the import of African workers into Spanish America a necessity.

From 1550s

Expansion of sugar plantations in Spanish and Portuguese America, and the eager demand in Europe for American silver and gold, increased the need for slave labor, while the supply of Native American labor continued to shrink.

1570

At this time, Brazil's African population was only about 2,000–3,000. But during 1576–1591, 40,000–50,000 African slaves arrived in Brazil. That Africans in Brazil in 1600 numbered only 15,000 shows the high death rates among this population.

1595–1600

Slaves totaling 80,500 were transported from Africa to Spanish America.

1600

Up to this date, some 150,000 Africans may have been shipped to Spanish American possessions, and another 50,000 to Brazil.

1600–1625

About 200,000 African slaves were brought to America, about half to Brazil and over 75,000 to Spanish possessions. African slaves fought on the side of the Spanish and Portuguese against both Native American rebels and new European rivals.



1612	Caribs in the West Indian islands attacked Spanish settlements and made off with their African slaves. At this time, an estimated 2,000 slaves were in Carib hands.
1616	A new monopoly contract was issued for shipping 3,500 to 5,000 slaves a year to Spanish American colonies and a similar one to supply Brazil.
1625	The Dutch began to carry African slaves to North America, averaging about 1,500 a year during the 1630s.
1626–1640	About 30,000 African slaves were taken to Spanish America.
1640	After 1595, Portuguese merchants shipped between 250,000 and 300,000 Africans to America for the Spanish. Slave traders from elsewhere also supplied Spanish America with slaves during this period.

Sources: Hugh Thomas, *The Slave Trade: The Story of the Atlantic Slave Trade, 1440–1870* (New York: Simon & Schuster, 1997), 91–2, 95, 97, 102–3, 105, 117, 123, 139, 143–4, 164–6, 170, 180.

John Thornton, *Africa and the Africans in the Making of the Atlantic World, 1400–1800* (New York: Cambridge University Press, 1998), 131, 141.

John H. Elliott, *Empires of the Atlantic World: Britain and Spain in America, 1492–1830* (New Haven, CT: Yale University Press, 2006), 100.

David Eltis, ed., *Coerced and Free Migration: Global Perspectives* (Stanford, CA: Stanford University Press, 2002), 62.

Lyle N. McAlister, *Spain and Portugal in the New World: 1492–1700* (Minneapolis: University of Minnesota Press, 1984), 172, 338.

M. J. Seymour, *The Transformation of the North Atlantic World, 1492–1763* (Westport, CT: Praeger, 2004), 171.

Silver: The Engine Driving Trade around the World

At first, American trade was restricted to sailing across the Atlantic to and from Seville in Spain and Lisbon in Portugal. A contraband trade to northern Europe, carried often in English, French, Dutch, and other ships, soon developed. So did the Portuguese sailing directly to their African trading posts.

Although Magellan reached Asia across the Pacific Ocean in 1521, it was not until after 1550 that mariners finally figured out how to use the winds that made a return trip from Asia to America possible. In 1565, a Spanish fleet sailing from America claimed the Philippines for Spain. In 1571, Manila was founded there as a Spanish trading center, giving Spain direct access to the Asian markets. A profitable transpacific trade developed.

China's huge demand, and the premium prices it paid, swallowed up much of the world's silver production (mostly American silver but also Japanese) from the 1540s to the early 1600s. American silver crossed the Atlantic directly to Spain and crossed the Pacific to the Philippines. From there, directly or indirectly through intermediary merchants, it flowed into and through northern Europe, the Mediterranean lands, Southwest Asia, India, and Southeast Asia. Silver moved by various routes: overland, by the silk roads; by way of the Baltic Sea (which carried as much traffic in silver as did the galleons sailing to Manila), through the Mediterranean and the Ottoman Empire; and by sea around the Cape of Good Hope, into the Indian Ocean.

DOCUMENT 1

What Part Did Silver Play in Spanish America's Trade?

Transatlantic Trade

1504	The Spanish Crown ruled that all trade with America should be centralized, supervised, registered, and licensed, and should go through the port at Seville.
1493–1520	Imports to Spain: mainly arms, gunpowder, horses and other livestock, flour, oil, wine. Exports: overwhelmingly gold from the West Indies.
1521–1530	Imports: consumer goods. Exports: mostly gold, also dyes and pearls.
1530s–1550s	Imports: mainly mercury (used in processing silver), fine foods and wines, damascene swords, quality textiles, spices, books, and paper. Exports: from South America almost all silver and some gold, as well as hides, tobacco, and medicinal plants; from New Spain farther north, about 65 percent silver and some gold, cochineal (a dye), hides, indigo (a dye), sugar, and medicinal plants.
1540–1550	The volume of trade doubled; about 40,000 tons of shipping went to America from Spain yearly, in an average of 150 ships of 300 tons each.
1550–1610	Both inbound and outbound sailings from Seville to Mexico increased about threefold.

1609	At this time, the value of silver exported to Spain from America made up 84 percent of the total value of exports from there. The rest was made up of dyes, hides, and small amounts of lesser-value items.
1590–1600	Some 7,000,000 ounces of silver a year left America for Spain. For comparison, production of the silver-producing region of central Europe in the 1630s was some 500,000 ounces.
About 1610	Spain's transatlantic trade peaked at some 160,000 tons and then declined. Around 1650, it was about half of what it had been in the peak years. Precious metals, mostly silver, made up some 95 percent of American exports.
1620s	Both the amount and value of silver exports to Spain began to slump. So did Spain's overall trade with America. About this time, Spain found it increasingly difficult to keep up with the growing demand for manufactured goods by colonial America. Spain's merchant marine, though greatly expanded, could not handle the ever-increasing demand for transatlantic shipping. Therefore, smuggling of silver out, and goods from places other than Spain in, flourished. And foreigners developed large-scale illegal trade directly between Spanish America and northern European states, bypassing Seville.
1500–1650	During this century-and-a-half, 16,000 tons of silver and 181 tons of gold went to Europe from America. In addition, much stayed in the Western Hemisphere, used to build churches and missions; an unknown amount was smuggled out; and a great deal went across the Pacific to Manila from Acapulco (see below). One estimate of the amount smuggled suggests it ranged between 10 and 50 percent of the officially registered amounts.

Transpacific Trade

1570s	Transpacific Acapulco (Mexico) to Manila (Philippines) trade opened. Exports: overwhelmingly silver. Imports: Chinese silk, porcelains, spices, wax. The Spanish Crown limited this trade to what could be carried in two galleons yearly.
1597	According to one estimate, the value of silver sent illegally to Manila from Mexico was greater than the total value of all goods, including silver, carried by Spain's official transatlantic fleet.
1600–1610	Imports continued as before. Almost 95 percent of transpacific exports consisted of silver.
1600s:	Throughout the seventeenth century, over fifty tons of silver a year went from Acapulco to Manila.

Sources: Lyle N. McAlister, *Spain and Portugal in the New World: 1492–1700* (Minneapolis: University of Minnesota Press, 1984), 370–1, 374–5, 381, 463–4.

Ralph Davis, *The Rise of the Atlantic Economies* (London: Weidenfeld and Nicolson, 1973), 63, 96.

Dennis O. Flynn and Arturo Giráldez, “Cycles of Silver: Global Economic Unity through the Mid-Eighteenth Century,” *Journal of World History* 13, 2 (2002): 398.

John H. Elliott, *The Old World and the New: 1492 to 1650* (New York: Cambridge University Press, 1970), 60.

S. M. H. Bozorgnia, *The Role of Precious Metals in European Economic Development* (Westport, CT: Greenwood Press, 1998), 166.

DOCUMENT 2

Who in the World Wanted Silver between 1550 and 1650, and Why?

The Chinese, Ottoman, and Spanish governments in the sixteenth century changed from collecting taxes based on a percentage of sales to collecting them based on a fixed quantity of silver. Additionally, laws in China from the 1570s on insisted that most Chinese, including peasants, had to pay taxes in silver. Silver was also the main currency, used to pay for everyday needs by all except the very poorest, in the most populous country in the world. According to one estimate, China's population in 1650 was one-third of the world's total.

Several European states during the sixteenth century debased their currency by mixing the silver in coins with copper because there were not enough coins available to fill the needs of greatly increased populations, and not enough silver to mint additional coins of silver only. In 1599, Spain introduced copper currency for lack of enough silver.

The kings of Spain and Portugal were owed a share of all shipments of silver in their domains before 1640, ranging between 28 and 40 percent.

Merchants in Europe, India, Mexico, and elsewhere needed silver to pay for China's products, such as silk, porcelain, and gold, which were much in demand. Because China was largely self-sufficient, it had little or no interest in buying goods from Europe. This put a premium value on silver as a commodity that Europeans could offer the Chinese by way of Manila.

Merchants who had the contacts and know-how to get silver to Chinese markets could make big profits. Because of the high demand in China, the price of silver there was double that in Spain. In the 1590s, one ounce of gold traded for fourteen ounces of silver in Europe, nine in India, and seven in China. According to a Spanish merchant with long experience in the Asian trade, exchanging silver for gold in China in 1609 could gain a profit of 75 percent.

Silver was the favored medium of exchange accepted in all major markets, and in most, though certainly not all, places where there was any trade. Cowrie shells, gold, and copper were the most popular alternatives.

Sources: Dennis O. Flynn and Arturo Giráldez, "Cycles of Silver: Global Economic Unity through the Mid-Eighteenth Century," *Journal of World History* 13, 2 (2002), 393–4, 400, 405, 417.

Kenneth Pomeranz, *The Great Divergence: Europe, China, and the Making of the Modern World Economy* (Princeton, NJ: Princeton University Press, 2000), 190, 269.

Lyle N. McAlister, *Spain and Portugal in the New World: 1492–1700* (Minneapolis: University of Minnesota Press, 1984), 464.

Ralph Davis, *The Rise of the Atlantic Economies* (London: Weidenfeld and Nicolson, 1973), 70.



DOCUMENT 3

What Happened to American Silver Once It Arrived in Spain?

According to the 1594 official Spanish estimate, the average annual amount of silver received from the New World was worth some ten million ducats. At the time this represented about a quarter of the total income of the Spanish Crown, up from about 11 percent forty years before. Of the ten million total,

- Three million went to pay for the foreign expenses of the Crown, mostly for the troops, provisions, and equipment used in its many and lengthy wars abroad. These included campaigns against Muslims in North Africa; fighting against the Protestant Dutch, who had revolted in order to gain independence from Catholic Spain; defense against French and English privateers, then outright war against both; and resisting the Ottoman Empire's expansion into Europe.
- Three million went to accounts of foreign individuals abroad, mostly to pay interest on the imperial debt to German, Genoese, and other bankers. At the end of the sixteenth century, interest payments on the debt ate up some two-thirds of the Crown's income.
- Four million ducats' worth of silver was available in Spain. Of this,
 - Some of it stayed there and was turned into coinage, jewelry, and religious objects, like crosses and chalices. The increase in the money supply in Spain and in much of Europe fed a rise in prices. With the inflation, goods in general cost two-and-a-half to three times as much in 1600 as they had in 1500.
 - Some of it paid for foreign imports, mostly from Asia. Exports of Spanish silver coin to East Asia were so large that these reales became the preferred coins there to use in international exchanges.
 - Some of it made its way to China in return for gold, because in China silver was more highly valued (doubly so as in Spain) and high profits on it could be made.
- Owing to American silver making its way there through Spanish payouts and smuggling, there was a fast increase over much of Europe in the available money supply. This encouraged investment there in expensive, long-range, and profit-producing projects such as opening new mines, building mills, ships, and manufacturing plants, improving irrigation and field drainage, and paying wages to larger workforces. These investments resulted in a significant increase in European production of goods and services. It also produced high inflation.
- In contrast to much of the rest of Western Europe, the flood of American silver into Spain did not lead to large-scale investment in projects producing sustained profits.

Sources: John H. Elliott, *The Old World and the New: 1492 to 1650* (New York: Cambridge University Press, 1970), 65, 87.

Lyle N. McAlister, *Spain and Portugal in the New World: 1492–1700* (Minneapolis: University of Minnesota Press, 1984), 464.

S. M. H. Bozorgnia, *The Role of Precious Metals in European Economic Development* (Westport, CT: Greenwood Press, 1998), 168, 172–3, 180.

Ralph Davis, *The Rise of the Atlantic Economies* (London: Weidenfeld and Nicolson, 1973), 68.

DOCUMENT 4

Why Did a Slump Occur in American Silver Exports in the Early Seventeenth Century, and What Were the Consequences?

The main reason for the slump was that silver production in Spanish America became more difficult and less profitable.

- The silver content of American mines gradually declined. Exploring for and opening new mines was expensive.
- The continued decline in Native American populations shrank the available labor force. Replacing Indian workers with imported African slaves was expensive and ate into profits.
- The Spanish colonies in America became less dependent on imports from “home.” As they began to grow in number and to make the products they wanted for themselves, colonists became less willing to pay high prices, mostly demanded in silver, for imports.
- More silver was held back in America. More was needed as administrative and military needs grew with the increasing size and diversity of the population and with increasing competition from other European nations.
- An increasing proportion of American-produced silver went to Manila instead of to Spain, as American demand for Asian luxuries grew.
- In the sixteenth century, as much as one-third to one-half of silver mined in the Americas ended up in China, with additional amounts absorbed by India, Southeast Asia, and Southwest Asia. China’s appetite for silver, however, was finally slaked after a century or so of surging production in America. China also absorbed most of the output of the rich silver mines discovered in Japan in the 1540s, which then began to supply a significant part of the world’s silver. Ten thousand tons of silver went from Japan to China during the late sixteenth to early seventeenth centuries.
- Supply finally outran the demand. By 1640, the price of silver had flattened, becoming much the same all over the world. Silver lost about two-thirds of its buying power from its highest value. Business people could no longer count on big profits by trading in silver.



Sources: John H. Elliott, *The Old World and the New: 1492 to 1650* (New York: Cambridge University Press, 1970), 70.

Lyle N. McAlister, *Spain and Portugal in the New World: 1492–1700* (Minneapolis: University of Minnesota Press, 1984), 371.

Dennis O. Flynn and Arturo Giráldez, “Cycles of Silver: Global Economic Unity through the Mid-Eighteenth Century,” *Journal of World History* 13, 2 (2002): 392, 395, 398, 405, 414.

Kenneth Pomeranz, *The Great Divergence: Europe, China, and the Making of the Modern World Economy* (Princeton, NJ: Princeton University Press, 2000), 190.

DOCUMENT 5

What Was the Character of Portuguese America’s Trade?

Unlike Spain, which worked hard to keep foreigners out, Portugal welcomed foreign traders doing business in Portuguese and Brazilian ports as long as they paid the import/export duties. But because foreign merchants felt those duties were set too high, there was a lot of secret, illegal trading and smuggling going on.

No precious metals were discovered in Brazil before 1650. It had a more or less uniform climate, so it could not produce a wide range of crops. And its population, both Native American and European, was much smaller than that of Spanish America. It did, however, have a virtual monopoly of the slave trade up to the mid-seventeenth century, as Portugal controlled all African slaving stations until the 1640s. Its conquest of Angola in Southwest Africa in the later sixteenth century provided it with its own ready supply of slaves, which it sold for Spanish silver. Silver, in turn, bought European-manufactured goods and Asian luxuries.

Other than slaves, Brazil’s main trade was in sugar produced in Brazil. Before 1500, only a few wealthy Europeans were even acquainted with sugar. But demand for sugar grew, and its production was stimulated by a sixfold rise in its price during the sixteenth century. In 1680, European consumption of sugar hovered around a pound per person per year. In England, it was four pounds. In China, sugar had important ritual and medicinal uses, and European visitors commented on how much more extensively sugar was used among well-to-do Chinese than among Europeans in the sixteenth and seventeenth centuries. Brazilian sugar production boomed, with an output that grew from 2,500 tons in 1576 to 20,000 tons in 1637.



Place of Origin	Destination	Principal Items Shipped
Portugal	Brazil	European manufactures (hardware, machinery); foods (wheat, olive oil); wine; re-exports of goods from China, India, Southeast Asia
Portugal	Angola	European manufactures (hardware, textiles)
Angola	Portugal	Ivory, slaves (for re-export to Spanish America)
Angola	Brazil	Enslaved men and women
Brazil	Portugal	Sugar (some for re-export to Northern Europe), tobacco, dyes, hides, cotton
Brazil	Angola	Tobacco, cheap spirits
Portugal	Spanish Caribbean	Enslaved men and women
Spanish Caribbean	Portugal	Silver (some for re-export to various parts of Asia)
Portugal	Northern Europe	Wine, fruit, cork, salt, Brazilian sugar, Spanish American silver
Northern Europe	Portugal	Manufactured goods
Portugal	China, India	Silver
China, India	Portugal	Silk, porcelain, textiles, spices, gold

Sources: Lyle N. McAlister, *Spain and Portugal in the New World: 1492–1700* (Minneapolis: University of Minnesota Press, 1984), 381–6, passim.

Kenneth Pomeranz, *The Great Divergence: Europe, China, and the Making of the Modern World Economy* (Princeton, NJ: Princeton UP, 2000), 118–9, 191.

Assessment

Write an editorial intended to appear in the October 12, 1642, issue of your local newspaper, with the title “The First 150 Years: Local and Global Consequences of European Settlement in the Americas.”

Rulers with Guns

The Rise of Powerful States



WHY STUDY THE RISE OF POWERFUL STATES?

The invention and spread of gunpowder technology is a case study in technological diffusion, and one that had profound effects on human society. For some historians, the appearance of firearms marks the beginning of the modern era because it had a huge impact on the direction of human history. Students need to understand the nature of this innovation, its military and civilian applications, and the profound changes that its use by political leaders brought about. From a world historical perspective, it is important to widen the lens from a traditionally narrow focus on events in Europe related to this new technology to take in the consequences for peoples and societies around the world.

OBJECTIVES

Upon completing this chapter, students will be able to:

1. Describe the origins, transfer, and uses of gunpowder technology in warfare.
2. Analyze the effects of firearms on the development of powerful, centralized states.
3. Compare societies that made use of, or were affected by, gunpowder weapons in various parts of the world from 1400 to 1800.
4. Analyze the material and cultural impact of powerful monarchies based on gunpowder military expansion through visual analysis of royal portraits.

TIME AND MATERIALS

These lessons will take 3–4 class periods to complete. Materials needed are 8½ x 11-inch paper, butcher paper, pencils, and colored markers.

HISTORICAL CONTEXT

Historians generally view the period from 1400 to 1800 as four centuries of immense global change in numerous historical realms. Communication and exchange networks became more dense and complex, and after 1500 they circled the globe owing to advances in maritime ship-building and navigation. Permanent contact with the Americas brought ecological consequences, such as the Great Dying—that took place as a result of the exchange of microorganisms—and the Columbian exchange of food crops and domestic animals. A global economy emerged, with a market system supported by trade in silver and also in textiles, spices, tea, coffee, and numerous other products. The military and economic power of states with access to gunpowder weapons grew enormously in several parts of Afroeurasia from northwestern Europe to China and from West Africa to Indonesia. The need that states had to pay for expensive firearms also propelled the expansion of governments, bureaucratic administrations, and systems for gathering taxes from ordinary people. This chapter offers an in-depth look at the development and impact of gunpowder weapons around the world. Certain European states gained power owing to possession of gunpowder armies and navies, but so did states in other parts of Afroeurasia. Only near the end of the period between 1400 and 1800 did European states move well ahead of other monarchies and empires in the extent and quality of their firepower.

THREE ESSENTIAL QUESTIONS

Humans and the Environment

How do you think the development and use of gunpowder weapons might have affected the physical and natural environments? Consider by comparison how wars have affected the environment in recent times.

Humans and Other Humans

Research and report on roles that girls or adult women of the nonelite classes may have played in the manufacture of firearms and in the deployment of large armies between the fifteenth and eighteenth centuries. (One clue to consider: Not only soldiers but all sorts of people accompanied armies in the field.)

Humans and Idea

The historian William McNeill (*Keeping Together in Time: Dance and Drill in Human History* [Cambridge, MA: Harvard University Press, 1995]) has made a historical connection between dance and precision military drill and maneuver. How do you think they are alike or different?

KEY THEMES

This chapter addresses the following historical themes:

Key Theme 2: Economic Networks and Exchange

Key Theme 3: Uses and Abuses of Power

Key Theme 6: Science, Technology, and the Environment

CORRELATIONS TO NATIONAL HISTORY STANDARDS

National Standards for World History

Era 6: The Emergence of the First Global Age, 1450–1770. 1A: The student understands the origins and consequences of European overseas expansion in the 15th and 16th centuries. Therefore, the student is able to: identify major technological developments in shipbuilding, navigation, and naval warfare and trace the cultural origins of various innovations. 6A. The student understands major global trends from 1450 to 1770. Therefore, the student is able to assess the impact of gunpowder weaponry and other innovations in military technology on empire-building and the world balance of naval power.

INSTRUCTIONAL RESOURCES

Bingham, Marjorie Wall. *An Age of Empires, 1200–1750*. New York: Oxford University Press, 2005.

This is one of the excellent books in Oxford University Press's beautifully illustrated series for precollegiate readers. The scope is global, and the eleven chapters investigate the Mongols, Poland and Lithuania, Russia, the Mughals, the Ottomans, the Portuguese, Spain, the Habsburgs, and Qing China.

Black, Jeremy. *War in the Early Modern World*. Boulder, CO: Westview Press, 1999.

Burbank, Jane, and Frederick Cooper. *Empires in World History: Power and the Politics of Difference*. Princeton, NJ: Princeton University Press, 2010

Chase, Kenneth. *Firearms: A Global History to 1700*. New York: Cambridge University Press, 2003.

Dale, Stephen Frederic. *The Muslim Empires of the Ottomans, Safavids, and Mughals*. New York: Cambridge University Press, 2010.

Davis, Natalie Zemon. *Trickster Travels: A Sixteenth-Century Muslim between Worlds*. New York: Hill and Wang, 2006.

Eltis, David. *The Military Revolution in Sixteenth-Century Europe*. New York: I. B. Tauris, 1995.

Goldstone, Jack A. *Revolution and Rebellion in the Early Modern World*. Berkeley: University of California Press, 1991.

- Hasan, Ahmad Yusuf al-. *Islamic Technology: An Illustrated History*. New York: Cambridge University Press, 1986.
- Jardine, Lisa. *Worldly Goods: A New History of the Renaissance*. New York: Nan Talese/Doubleday, 1996.
- Lieberman, Victor. *Strange Parallels: Southeast Asia in Global Context, c. 800–1830*. New York: Cambridge University Press, 2003.
- McNeill, William H. *The Age of Gunpowder Empires, 1450–1800*. Washington, DC: American Historical Association, 1989.
- . *The Pursuit of Power: Technology, Armed Force, and Society since A.D. 1000*. Chicago, IL: University of Chicago Press, 1982.
- Neiberg, Michael S. *Warfare in World History*. New York: Routledge, 2001.
- Pacey, Arnold. *Technology in World Civilization: A Thousand-Year History*. Cambridge, MA: MIT Press, 1990.
- Wiesner-Hanks, Merry E. *Early Modern Europe, 1450–1789*. New York: Cambridge University Press, 2006.
- Wolf, Eric R. *Europe and the People without History: With a New Preface*. Berkeley: University of California Press, 1997.

LESSON 1

What Is Gunpowder?

Preparation

Prepare copies of Student Handout 3.1.1.

Activities

1. Distribute Student Handout 3.1.1 and ask students to read it. After checking for comprehension, focus the discussion on the science of gunpowder, both in terms of how it works as a mixture of substances and how the explosive quality can deliver projectiles of various kinds. Use students' prior knowledge or conduct brief research to find answers to questions that arise.
2. Use the four discussion questions to explore the history of gunpowder technology based on the reading. Write down other questions students may have about gunpowder.

What Is Gunpowder?

Gunpowder is made of a few simple substances. It works on the idea of rapid oxidation, that is, combustion of carbon to create an explosion that can take place in a closed chamber. The ingredients of gunpowder are ground charcoal, sulphur, and saltpeter. Saltpeter, or potassium nitrate, is the oxidizer. It is a white, crystalline, organic chemical—a by-product of animal dung. It can be mined in ancient bat caves or bird dung piles as the substance called guano. Or it can be produced by subjecting dung to a special process, similar to composting, for about a year.

**Saltpeter**

+

**Carbon**

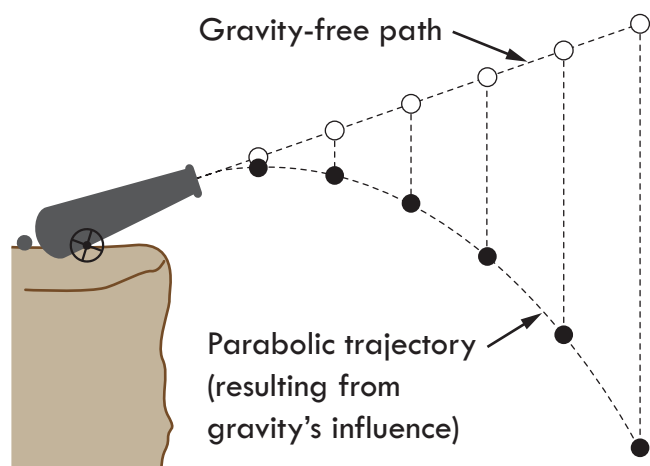
+

**Sulfur**

=

**Gunpowder**

Gunpowder explodes because the nitrates in saltpeter release oxygen when they are heated, even by a small flame like a match or by a spark made when metal strikes flint (a stone used to make fire). The released oxygen from potassium nitrate acts as a catalyst. It causes the carbon and sulfur to burn (oxidize) rapidly in a quick chemical reaction, that is, an explosion. Normally, combustion occurs in the open air, but the action of saltpeter with heat makes gunpowder burn in a closed place like a rocket tube or the barrel of a cannon.



The proportions of the three ingredients of gunpowder can be varied to produce different explosive force, depending on the desired use—fireworks, mining, handguns, or cannons. The force must be enough to create the desired explosion but not so much as to destroy the barrel of the weapon. On the creative side, a paper or bamboo tube used for fireworks is disposable. The explosion in the tube produces a show by shooting out chemicals that produce colors when burned.

On the destructive side, an artillery shell that is shot from a gun and that itself contains gunpowder will explode on impact, scattering dangerous shrapnel and setting things on fire.

An explosion in a tube that is closed on one end will make an object (projectile) placed between the gunpowder and the open end shoot. This happens because the explosion causes gas to expand. In the case of a rocket, the tube itself is set into motion by the explosion. Laws of physics (force, motion, and gravity) determine the path, or trajectory, of the projectile such as a bullet, cannonball, or rocket. Knowledge of how to predict the trajectory of a flying object allows the user to aim the weapon at a person, mounted soldier, fortress wall, or ship. The trajectory will vary depending on the weight of the projectile, the angle of the barrel, and the force of the explosion.

Source: "Gunpowder," *New World Encyclopedia*. <http://www.newworldencyclopedia.org/entry/Gunpowder>.

Who Invented Gunpowder and Its Use in Warfare?

The origins of gunpowder are easier to trace than its spread. It is possible that there were several different centers for parts of the invention. Both Buddhist and Muslim alchemists tried to make potions that would give a person immortality or create substances that would change base metals into gold. Both efforts led to experiments with various substances. Although alchemy is considered a pseudoscience (a theory or practice that is not well grounded in scientific evidence), these experiments led to the real science of chemistry, that is, understanding the properties of matter and producing chemical substances with many uses.

Gunpowder is a by-product of alchemy experiments. Alchemists knew about organic compounds in urine and dung as powerful substances. They experimented with acidic and alkaline substances. They learned in the case of saltpeter that some substances can "transform" others in chemical reactions. Alchemists happened upon knowledge of gunpowder and shared this knowledge widely. A Chinese Buddhist alchemist wrote, "Some have heated together the saltpeter, sulfur, and carbon of charcoal with honey; smoke and flames result, so that their hands and faces have been burnt, and even the whole house burnt down."¹ Honey contains sugar molecules made of carbon, hydrogen, and oxygen, so it would have accelerated the reaction by providing extra fuel. In the Muslim tradition of alchemy, scholars recorded discovery of new substances and processes, as well as equipment such as furnaces and glass vessels, in detailed books on alchemy. Manuscripts that became known in the Latin West included works by Jabir ibn Hayan (d. ca. 815) and al-Razi (d. 925). These books recorded recipes for nitric and other acids, called "sharp waters" or aqua regia in Latin translations. The knowledge of how to reproduce and purify substances accurately was as important as the knowledge of compounds and their uses.

1. "Gun and Gunpowder," Silk Road Foundation. <http://www.silk-road.com/art1/gun.shtml>.



Two illustrations from the Petersburg manuscript showing the first use of explosive gunpowder and cannon.

Military uses of incendiary and explosive materials in western Asia date to the mid-first millennium CE. Natural seepage of petroleum, called naft, occurs in Southwest Asia. People also know that pitch (tar) and resins are very flammable. In the seventh century the Byzantines used naphtha, or “Greek fire,” in warfare. This may have been one source of the knowledge that European crusaders gained in the eleventh century and later. Knowledge of how to distill substances led to use of compounds in fire-throwing devices. Knowledge of these tools was later applied to gunpowder technologies to make more refined weapons. By the time of the Crusades, grenades and rockets that contained explosives were in use. Examples exist in museums today. Arabic books of that era refer to saltpeter by different names, including “Chinese snow” or “Chinese salt,” which points to the spread of knowledge of this substance westward across Inner Eurasia.



First illustration of fire lance and a grenade.

The first recorded use of gunpowder in warfare in China dates to 919 CE, as shown in this tenth-century fire lance image from the Dunhuang caves in western China. Song historical documents indicate the use of explosive gunpowder in projectiles thrown from catapults. These documents contain terms that refer to cannons, rockets, and firebombs. A Chinese battle that took place against an invading army in 1126 featured bamboo tubes that shot flaming missiles. Bamboo cannons as offensive weapons featured in 1132, when they were mounted on a wheeled platform to attack a city’s walls. Catapults evolved from bamboo tubes to a device with a metal, bottle-shaped barrel that would shoot arrows. Archaeologists have discovered a very early gun at a site in Manchuria dated to about 1290.

By the time of the Mongol invasions, both the technology for making gunpowder and its use in weaponry had reached Muslim lands. There is evidence that

Mongol forces used Chinese engineers with gunpowder weapons to attack Iran and Iraq. Iranian engineers, using an Arab-designed trebuchet (a machine for throwing projectiles against or over

defensive walls), served with Mongols who attacked northern China. European crusader armies were exposed to gunpowder weapons in the eastern Mediterranean, and forces of the Egyptian Mamluk state used them against the Mongols in Syria.

One of the best sources on gunpowder weapons is *The Book of Military Horsemanship and Ingenious War Devices* by Najm al-Din Hasan al-Rammah (d. 1295). Written in about 1270, it details “inherited knowledge of the forefathers,” including 107 gunpowder recipes, 22 kinds of rockets, and other kinds of gunpowder weapons. Al-Rammah reported modern proportions of ingredients for explosive gunpowder: 75 percent potassium nitrate (saltpeter), 10 percent sulfur, and 15 percent carbon.

Muslim soldiers in Spain used gunpowder weapons against Spanish Christian forces. Muslim armies possibly served as the path of gunpowder knowledge to Europeans. Contacts between European powers and the Mongols may have been another pathway. The two ideas that were coming together at this time, both in China and in Muslim regions, were the use of high-nitrate gunpowder and the use of wooden or metal tubes for shooting projectiles.

Chinese gun barrels from 1288 and 1332 date earlier than anything similar found in Europe. The technology may have come to Europe through Russia during Mongol rule. In Spain, both cannon and guns were in use by 1330, and the illustration from an Arabic military treatise (known as the Petersburg manuscript) shows the use of explosive gunpowder and cannon. Illustrations in books show bottle-shaped guns developed in China and Europe, even as far north as Sweden. Although the Mongols were aware of incendiary weapons, they did not develop guns, since these devices did not fit with the culture of warrior horsemen. At most, guns played a part in sieges but not yet with the devastating force of the weapons developed in later centuries.

English scientist Roger Bacon referred to gunpowder recipes in the thirteenth century, probably taken from translated Arabic texts on alchemy. Practical knowledge may have come to England from noblemen fighting in Spain in the fourteenth century. The ability to make gunpowder and use it in battle spread into numerous European countries, where devastating weapons were developed over the course of the fourteenth and fifteenth centuries.

Sources: Arnold Pacey, *Technology in World Civilization: A Thousand-Year History* (Cambridge, MA: MIT Press, 1990), 45–9, 50–52.

“Transfer of Islamic Technology to the West,” History of Science and Technology in Islam.
<http://www.history-science-technology.com/Articles/articles%2072.htm>.

Yaacov Lev, *War and Society in the Eastern Mediterranean, 7th–15th Centuries* (Boston: Brill, 1997), 352.



Questions for Discussion

- Why is it difficult to determine the time and place of the invention of gunpowder weapons?
- Why do you think the discovery of gunpowder did not occur earlier in history?
- What steps took place in the development of gunpowder weapons?
- What factors contributed to the spread of this technology?

LESSON 2

Bells, Buddhas, and Bombards: Military Gunpowder Technology

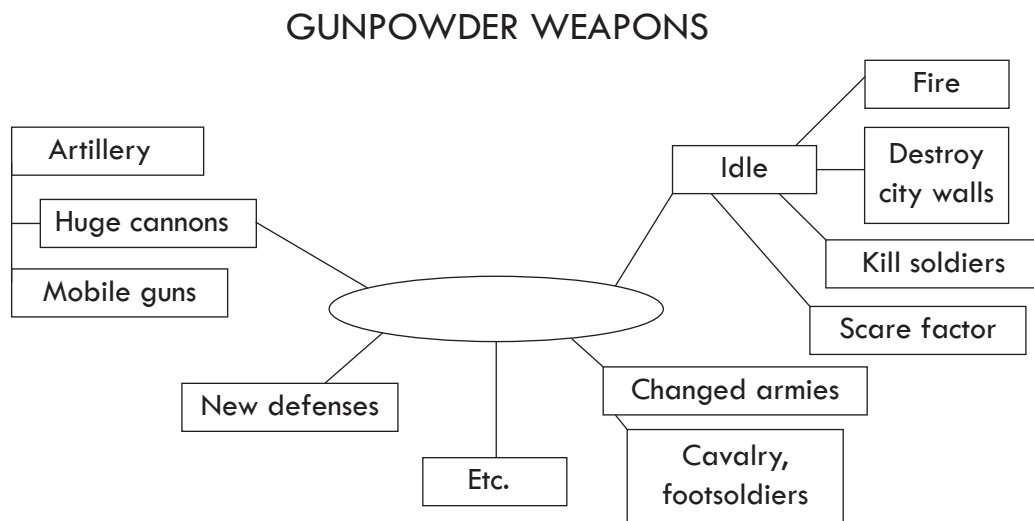
Preparation

Prepare copies of Student Handout 3.2.1 and have ready extra paper and pencils or colored markers.

Activities

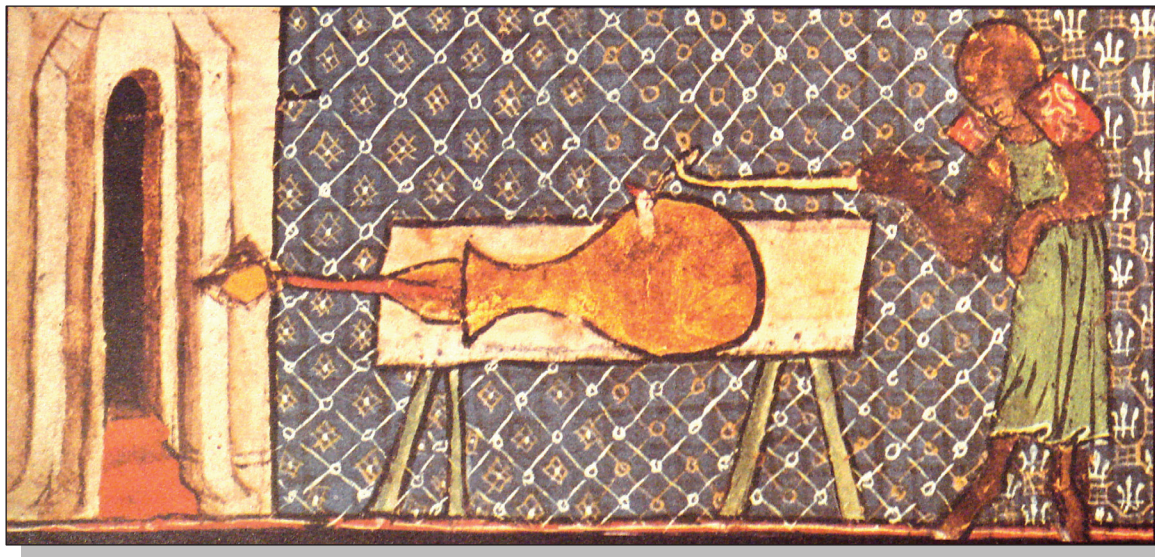
1. Distribute Student Handout 3.2.1 and ask students to read it. Pre-check for vocabulary and post-check for comprehension.
2. Have students make a spider diagram based on the reading, writing “gunpowder weapons” at the center in an oval. The ideas in the reading can be arranged in any order, but the exercise is designed to get students thinking about the complexity of these weapons and their application in warfare, as well as the defensive dilemmas they posed. Encourage students to look at the issue from all sides. Compare diagrams.

Here is a sample diagram.



Bells, Buddhas, and Bombards: Military Gunpowder Technology

Gunpowder weapons reached Europe by several pathways across Afroeurasia. This involved both the technology of producing gunpowder to create an explosion and the applied technology to deliver a destructive projectile—bullet, ball, or bomb. European political, geographic, and military conditions favored the development of gunpowder weapons into an efficient, destructive technology. This knowledge contributed to the growth of strong, centralized states and the expansion of overseas empires. Together with other developments, such as improvements in ships and navigation and the expansion of trade, the development of gunpowder weapons changed the nature of warfare in the world.



Earliest known depiction of a European cannon, from a 14th-century manuscript.

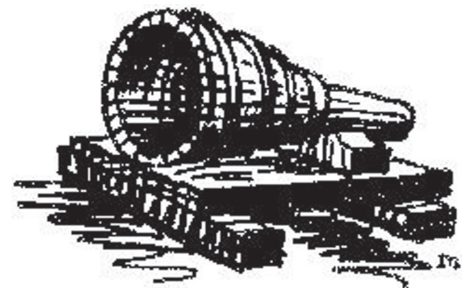
How did military and technical advances result in gunpowder weapons? A bottle-shaped device designed to shoot an arrow with explosive force was the first documented gunpowder weapon. The bore was narrow, but the metal near the touch-hole, where the explosion took place, was thickened to prevent cracking from the explosion. Examples have been found in both Chinese and European manuscript illustrations from about the late thirteenth and early fourteenth centuries. Historians believe China was the source of the invention, and the Mongols probably spread the idea. Technical advances followed with devastating effects: Europeans built bigger and more powerful guns and learned to aim them against castle and city walls. In one direction of development, gunpowder technology led to large weapons called bombards; they were later known as cannons or artillery. Artisans also invented handheld weapons (handguns) for foot soldiers.

Three elements—the idea, the resources, and the technical know-how—were the ingredients for advancement of gunpowder weapons.

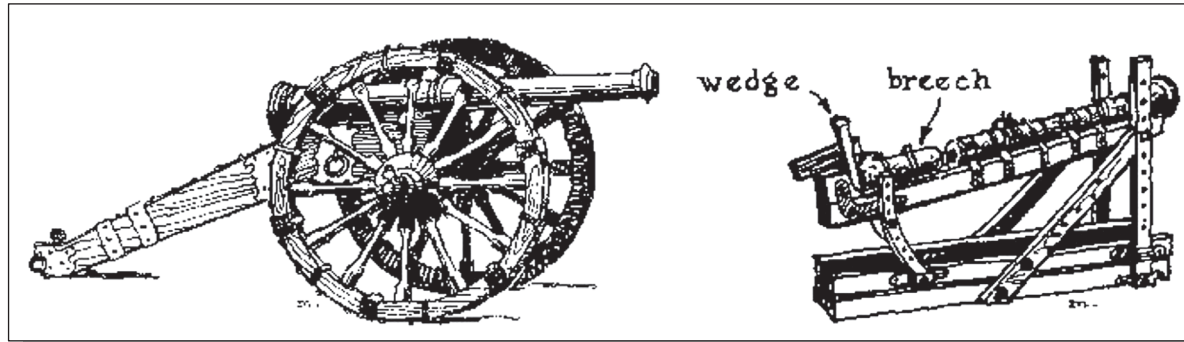
- First, the idea refers to knowledge of how to make weapons and of what they could do. Early gunpowder weapons could frighten mounted cavalry, or they could shoot flaming objects to set things on fire. Two new ideas were using cannons to break down walls and giving foot soldiers and cavalry a new type of weapon that was not simply a sharp object. Cannons and handguns were the result.
- The second element was access to metal, at first bronze or brass (made by combining copper with other metals) and later iron. Advances in mining technology and local availability of the needed metals gave an advantage to some lands over others. Deposits of iron, copper, tin, lead, and nickel were found in Germany, England, France, and elsewhere. Mechanical devices for pumping water out of deep mines spread to Europe by way of Arabic works on mechanical engineering. Using gunpowder explosions to break through rock was another new idea. Metal ingots (cast chunks of purified metal) could be imported, but when large armies began to use large numbers of guns, local access to metals was an important advantage.
- The third element was the technical skill to cast and forge the barrels of guns and cannons and to make metal bullets and cannonballs. A thick, strong tube closed on one end was needed to contain the explosion of gunpowder in the barrel and direct the projectile out of the other end. Casting large gun barrels required the skill to heat a large amount of metal and create molds that would not break. Interestingly, the ability to cast large metal objects came through the European experience of casting bronze or brass church bells. A cannon, after all, is similar in size and shape to the great bells that rang in the cathedrals being built in many European cities at the time. In China, metalworkers had possessed casting and forging skills for centuries. Japanese metalworkers also had experience with furnaces for casting huge bronze statues of the Buddha, as well as skills in forging fine steel for swords. Steelmaking arts in India, Persia, Syria, Spain, and elsewhere helped to spread European advances in the technology of gunmaking to many places beyond Europe after gunpowder weapons were introduced.

Source: William H. McNeill, *The Age of Gunpowder Empires, 1450–1800* (Washington, DC: American Historical Association, 1989), 4–5.

The earliest bombards were stumpy, short tubes that could shoot a stone ball. They were also hard to aim and might explode, killing the gunners who fired them. They were made of iron bars bound with wrought-iron hoops. They rested on a platform, like this illustration from 1330. By 1430, bombards made in Europe were huge. They were 12 to 15 feet long and could fire a stone about 30 inches in diameter. Bombards were so heavy that in major campaigns, the metals might be brought to the battlefield and cast



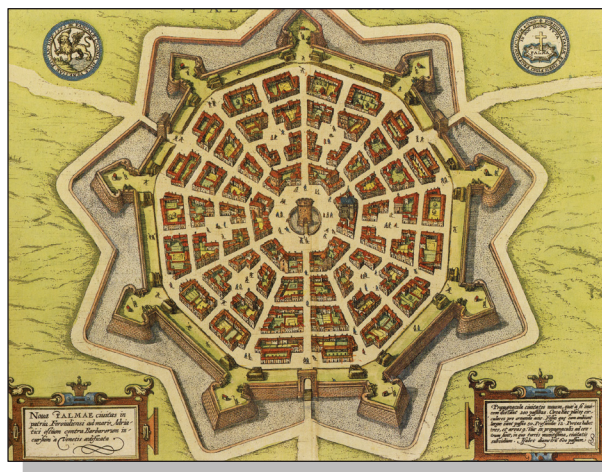
on the spot. The great cannon cast in 1453 by Mehmet the Conqueror, ruler of the Ottoman Turkish Empire, was the biggest bombard made to date. It was cast within range of the walls of Constantinople during the siege in which Mehmet took the city from the Christian Byzantine state. Its purpose was to break through heavy walls and allow soldiers to enter the city quickly rather than camping outside the walls and waiting for the people inside to run out of food. In Europe the king of France defeated the English by bombarding their fortifications. This tactic helped end the Hundred Years' War in 1453, when the English had to surrender most of their possessions on the European continent.



A fifteenth-century breechloader.

The king of France and other monarchs used gunpowder weapons to defeat aristocratic landowners and bring them under unified control. As gunpowder weapons were used in Europe, an arms race led to improvements and new inventions. Platforms were made adjustable for more accurate aiming, like the fifteenth-century artillery piece on the right. Cannons were set on mobile platforms so they could be moved into place quickly and transported easily. Cannons were made smaller but stronger. Instead of stone balls, smaller cast-iron balls proved even better at breaking through stone walls. Smaller guns were loaded onto wooden carriages with wheels like the one on the left, developed by the military expert Gustavus Adolphus in 1630 as light artillery.

Light guns on wheels tipped the balance of power for a while. A ruler with enough money to own some of these new weapons, together with troops and supplies, was able to defeat lords who challenged the king, or even foreign enemies. The gunners could place mobile cannons on a hill and fire them into the walls of a town or castle. Soldiers then poured into the breach. On the battlefield, artillery explosions could scatter charging cavalry.

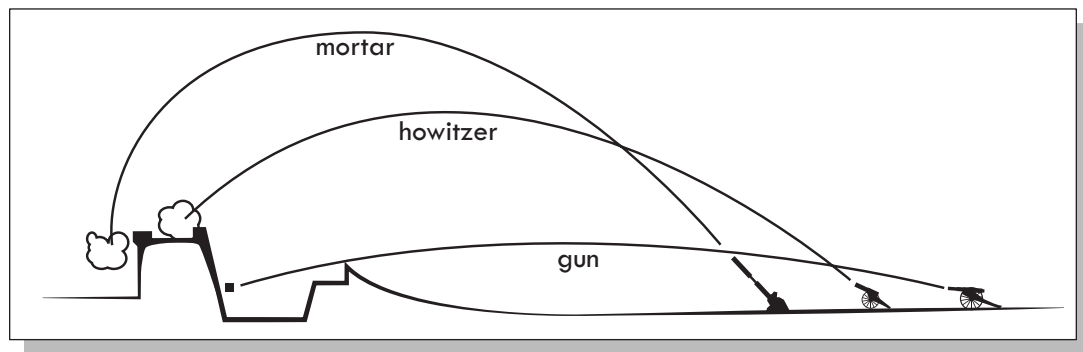


The new style of fortifications called the *trace italienne*.

As powerful monarchs tried to increase their territory, like Charles VII of France did in 1494 by invading Italy, defenders invented new ways to counter the effects of artillery. For example, in 1500 the commanders of the city of Pisa

discovered that if the city's walls were reinforced with earthen banks inside and a big ditch outside, they could absorb the force of cannonballs without harm. Attacking armies were at a disadvantage when they had to navigate a ditch. Defensive cannons placed along star-shaped walls could be aimed in any direction to defend the fortress. This new style of fortifications was called the *trace italienne*, and for a while it checked the power of cannons. Nevertheless, the stream of new ideas continued: shells that would explode when hurled over walls, new kinds of projectiles, and guns that were easier to aim and less likely to blow up in the face of the gunners.

Source: "The Project Gutenberg EBook of *Artillery through the Ages*, by Albert Manucy." <http://www.gutenberg.org/files/20483/20483-h/20483-h.htm>.



Offensive artillery and its use in attacking fortifications.

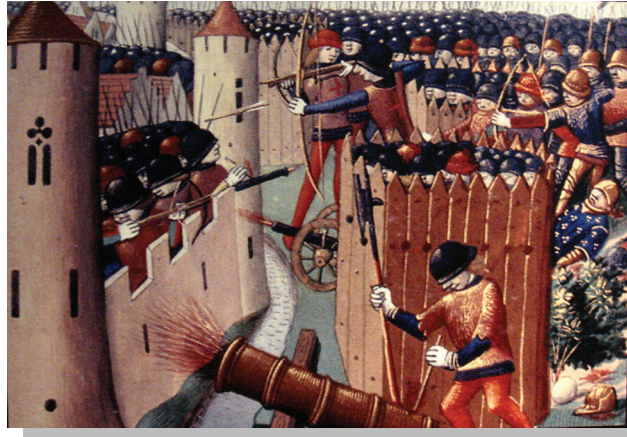
How Did Handguns Develop?

Personal weapons, or handguns, developed from the "firestick," a handheld rod of bamboo or wood with a small metal head in the shape of a bulb, open at the narrow end, where the explosive charge exited. The word *gonne* was used in Europe to name a device that was a lot like a miniature cannon on a stick. There are numerous illustrations of Chinese versions of this gun, like the Dunhuang example shown earlier. Some were made to fire multiple charges. The *gonne* example from Germany shown below (about 1399), gives an idea of how simple the device



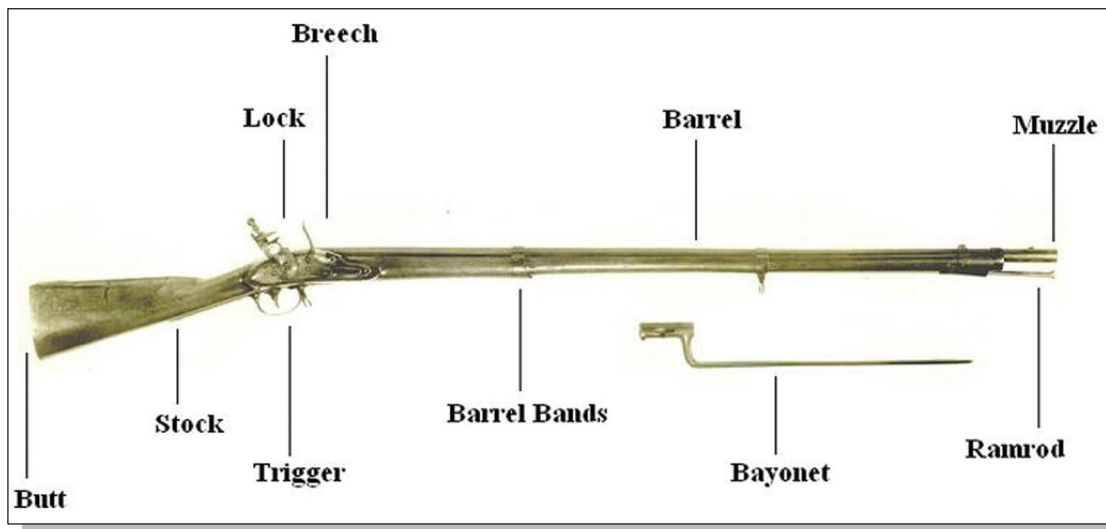
was. It was a tube that could be mounted on a stick. Gunpowder was put into the bore, followed by a lead ball.

The gunpowder was ignited by a hot wire or slow-burning "match" made of chemical-soaked string. This match was poked into the touch hole on the top to ignite the explosion. Modern testing of such handguns shows that they could pierce armor and definitely kill people. They were very difficult to aim and could only be fired a second time after the soldier repeated the steps of cleaning, loading, and igniting. These weapons did not yet replace bows or swords, as shown in the painting of a castle siege from 1468.



The Siege of Orleans in 1428.

Handheld firearms went through a series of innovations that made them more practical, effective, and deadly. By the time of the English civil war in the mid-seventeenth century, guns had become easier to load. But they were still heavy and needed to be steadied on a forked rod held separately.



Parts of a musket.

The matchlock musket, or arquebus, was an invention that had a lever, or trigger, which moved the slow-burning match to the touchhole while the soldier aimed at the target. Matchlocks were the first guns to be widely manufactured. They could be fired once to twice a minute with practice. The flintlock musket, the next major improvement, was invented in the late seventeenth century and was used for a long time. It replaced the match with a trigger, which made a spark between metal and flint to ignite the powder. Flintlocks were then fitted with bayonets, that is, long, stiff blades attached by a ring alongside the bore of the gun. They enabled foot soldiers armed with guns to replace both swordsmen and pikemen, equipping modern armies for the next 150 years.

LESSON 3

Bombs, Bullets, and Bureaucracies: The Growth of Centralized States

Preparation

Prepare copies of Student Handout 3.3.1, with change chart at the end.

Activities

1. Distribute Student Handout 3.3.1 and ask students to read it. Pre-check vocabulary and focus on concepts in the reading that may be unfamiliar (state, bureaucracy, centralized, unified, and others). Post-check for comprehension by asking students to list one or more changes in government and society that took place as a result of the use of gunpowder weapons. The concepts in the reading are complex, but combined with the introductory readings on the development of gunpowder weapons, students should follow easily. Understanding the changes requires some leap of imagination and ability to visualize large-scale or long-term effects.
2. Students should write on the chart the changes they wrote down in the comprehension exercise. Using the reading, and bearing in mind information from the previous readings, students should consider the effects of firearms on government, upper classes, commoners, soldiers, civilians, urban, rural, and pastoral peoples. Teachers may wish to make a two-column chart, combining the last two columns for simplicity.
3. Comparison: Have students name other innovations in weapons and discuss the changes they brought about. Examples are the use of metal versus stone, iron versus bronze, siege engines, heavily armored knights on horseback, war elephants, camel saddles, and so on. Call to mind specific examples of societies already studied in the course.
4. Foreshadowing: Project further innovations that occurred in gunpowder weapons after the early modern period. These might include the size of guns, the speed of fire, and the capacity to destroy people and property. Try to place these advances in chronological order. A couple of note-takers or a recorder on a computer or whiteboard will help save the results for future reference.

Extension Activities

Invent a weapon of the future, or research some of the high-tech weaponry being experimented with today and imagine what changes they might cause in the societies either using them or subjected to attack or invasion. Discuss possible long-term and wide-scale changes in the societies that use new kinds of weapons. Teachers should note that some students are fascinated with military history and may be willing to do research reports, displays, PowerPoint presentations, or posters.

Bombs, Bullets, and Bureaucracies: The Growth of Centralized States

During Big Era Six, from 1450 to 1800, “gunpowder empires” developed in some parts of the world. Historians have used this name to describe states that used firearms to expand their territories and control their own populations. In those 350 years, the largest land-based empires were:

- The Ottoman in the eastern Mediterranean region
- The Safavid in Persia
- The Mughal in India
- The Chinese under the Ming and Qing dynasties
- The Russian
- The Kanem-Bornu in West Africa
- The Austrian Hapsburg in Central Europe

Other, smaller states in Asia and Africa that used firearms technology were Japan, Siam (Thailand), Ethiopia, and Morocco.

In Western Europe, even with gunpowder weapons, no single, land-based empire was strong enough to take control of all Europe. Instead, intense rivalry in firearms technology and use led to the creation of numerous strong, centralized monarchies. These were closely matched military competitors. Some of them turned their military power to building sea-based, that is, maritime, empires. Portugal, Spain, the Netherlands, France, and Britain built the largest overseas empires.

A strong, central government was necessary to bring together all the elements of modern warfare. Control over standing armies (rather than seasonal or temporary ones), artillery experts, access to supplies of metal, and financial resources from taxation and lenders together reinforced the power of the state. Monarchs who gained power over local lords or seized new territory extracted taxes from farmers and from trade. These resources made them wealthier and therefore able to continue their military expansion. Supporting the rulers of these states were increasingly bureaucratic governments, that is, officials who counted the population, gathered taxes, managed the state ministries (departments), and supplied the standing army. Power and riches, then, were the rewards of gunpowder warfare. The portraits of kings, queens, and emperors of these powerful states give an idea of their wealth and confidence.

Social changes in the military were an important part of the transformation. Before the coming of firearms, the fighting in most states was done by male members of the elite class, that is, nobles or aristocrats such as knights in medieval Europe. These noble warriors often fought on horseback. Soldiers of the lower classes, including peasant farmers, frequently provided support or went to war with simple weapons like pikes. Among pastoral nomadic peoples, warriors on horseback armed with bow and arrow or other weapons had great mobility and often overran defensive armies of foot soldiers.

Gunpowder weaponry, however, tipped the balance in favor of centralized states that had enough financial resources to afford to equip large numbers of troops with cannons and handguns. These states conquered smaller ones that did not have these weapons, or not enough of them. Rulers of centralized states used guns to break the power of local aristocrats and nobles, ending their careers as professional fighters. The long era of the power of pastoral nomadic states, such as the Mongol Empire, came to an end. Cavalry warriors armed with bows and arrows could not stand up against the fire of rows of artillery. And as the costs of firearms went down, rulers recruited larger numbers of peasants to serve in standing armies.

In gunpowder states, foot soldiers were drawn from the common social classes, but modern methods of military drill made them into loyal armies able to march and maneuver in a unified body in response to commands of officers. Military leaders in Japan may have been the earliest to use these methods. In the Netherlands, Prince Maurice is recognized for his role in modern military organization and professional soldiering. He developed highly organized drills carried out by groups of soldiers divided into battalions, companies, platoons, and squads. In these drills, troops with muskets practiced over and over again the many steps of preparing and firing their guns. These drills were designed to make soldiers into cohesive fighting forces that would obey their officers automatically. The image shows just six out of the forty-eight steps in carrying, presenting, loading, and firing a musket. Soldiers were trained to carry out these steps with their weapons in sync with



Manual exercise of the musketeer.

other soldiers in a massed group. Much like workers on an assembly line, soldiers memorized the exact position for marching, holding their feet and hands, and carrying out each muscle movement with precision. Soldiering was transformed. The new troops, called infantry, became the backbone of European armies. The drills made them professional soldiers who served growing states at home and abroad.



Change brought by gunpowder weapons	Reason for the change	Effect on the state/government



Change brought by gunpowder weapons	Reason for the change	Effect on the state/government

LESSON 4

Effects of Gunpowder Weapons in Different Societies

Preparation

Prepare copies of Student Handout 3.4.1. Have ready a map of the world (preferably a map showing states and empires from 1500 to 1750), as well as chairs, butcher paper, and markers.

Introduction

This activity consists of short vignettes that build on the background readings in Lessons 1–3. It can be used as a culminating activity for the era of gunpowder empires and the rise of monarchies in Europe, or it can be used to introduce the problem of gunpowder and to help students develop a conceptual vocabulary for discussing the issue before in-depth study.

Activities

1. Divide students into ten groups or assign pairs or individuals to the vignettes numbered 1–10 in Student Handout 3.4.1. Students should have with them copies of the readings in Lessons 1–3 and any other materials they have been assigned from the textbook on the era of gunpowder weapons.
2. Have each group or pair read the excerpt and use butcher paper to list the advantages and disadvantages to each society of the use of gunpowder weapons. The vignettes are brief and can be used without supplemental readings. But students should draw on what they have learned about gunpowder weapons and their effects from the Lessons 1–3 readings and from textbooks or other sources.
3. After 15 minutes or so, turn the activity into a roundtable presentation and discussion on the impact of gunpowder weapons on military power, government, and society. The group work and discussion that follows gain interest by drawing on students' knowledge from other readings and from encouraging them to challenge each other on the advantages and disadvantages of firearms.
4. As the round proceeds, have students fill in their individual charts using the information on each vignette, adding material from their own notes. The chart may be completed as homework or as a notebook assignment.

Effects of Gunpowder Weapons in Different Societies

Use each vignette below to fill in the chart at the end of the lesson with the advantages and disadvantages of gunpowder weapons for each society. Your answer may go beyond the information in each vignette to make interpretations based on your own knowledge. Refer to a world map to locate these groups.

1. Russians under Ivan III

Grand Duke Ivan III (1462–1505) consolidated power over Muscovy. His Muscovite successor Ivan the Terrible (1533–1584) attacked the Mongol states along the Volga River and other rivers of Inner Eurasia to control vast new territories. Cannons were mounted on river barges and carried across frozen land on sleds. With his mobile guns, the new Russian leader, or tsar, dominated the territories without effective challenge from traditionally armed groups.

2. Siberian Fur Traders

From the ninth-century Vikings to the eighteenth-century Russians, the Inner Eurasian fur trade offered a path to wealth and power. With Russian military expansion along the Inner Eurasian river system, the fur trade kept pace with imperial control. As fur-bearing animals in western Russia were depleted, musket-armed Cossacks pushed eastward into Siberia. These newcomers used firepower to force indigenous people to give them furs as tribute, with serious penalties for failure to do it. Reaching the Pacific Ocean in 1638, the hunt for sea otter pelts enriched the fur trade. Russian fur traders explored and colonized the islands and coastlands of today's Alaska, Canada, and the continental United States, reaching as far south as Bodega Bay north of San Francisco.

Source: Eric R. Wolf, *Europe and the People without History* (Berkeley: University of California Press, 1997), 182–4.

3. Portuguese Ship Captains in the Indian Ocean

Portuguese ships, which were suited for the rough Atlantic Ocean, were designed to carry cannons on decks close to the waterline, with special gun ports to keep out the seawater. Ships carried guns on both sides. These cannons could blast the hulls of lighter Indian Ocean trading vessels with ease. Although they were newcomers to the Indian Ocean in 1498, the Portuguese used shipboard cannons during the following decades to force coastal rulers to accept their goods in trade or risk having their ships sunk and their ports bombarded. The Portuguese gained access to Chinese and Japanese ports. They also tried to restrict the passage of other European ships through the Strait of Malacca between the Indian Ocean and the South China Sea, until other Europeans with similar weapons challenged them. While the Portuguese failed to dominate the Indian Ocean or control trade for long, their cannon-bearing ships as well as their aggressive policies altered long-standing trade patterns in the region and set the stage for eventual European domination.

Source: "Sultan Qaboos Cultural Center." <http://www.indianoceanhistory.org/>.



4. The Sultans of the Ottoman Empire

Mehmet the Conqueror used expert gunners to build a huge cannon to help take the city of Constantinople in 1453, ending the Byzantine Empire. The Ottoman sultans, already powerful, expanded their territory using a carefully developed loyal army. Using artillery and handguns in their annual campaigns, the Ottomans took lands in southern Europe, Southwest Asia, and North Africa. They built a navy on the Mediterranean to challenge the Venetians and others, and they used and protected the trade routes on the Red Sea and the Muslim holy cities of Makka (Mecca) and Madina (Medina). In the early sixteenth century, however, the Ottoman navy suffered defeat by the Portuguese navy at the Strait of Hormuz. Its armaments on light galleys were not a match for the cannons of the heavy Portuguese warships. The Ottoman navy did manage to protect the port of Aden and the entrance to the Red Sea, but they did not challenge the Portuguese on the open waters of the Indian Ocean again.

Source: McNeill, *Age of Gunpowder Empires*, 14–15, 33–6.

5. European Slave Traders and African Rulers

Tapping into trade networks in West Africa, European slave merchants made alliances to purchase captives of war from local African leaders. They offered Indian cloth, products of the Americas, and other goods to purchase slaves. A Dutch trader in 1700 wrote from the African Gold Coast, “The main military weapons are muskets or carbines, in the use of which these Africans are wonderfully skillful. . . . We sell them very great quantities . . . but we are forced to do this. For if we did not do it, they would easily get enough muskets from the English, or from the Danes, or from the Prussians. . . .” By 1730 “the annual imports of guns into West Africa had reached the figure of 180,000. . . . In meeting the heavy demand for arms, the flintlock proved crucial. It enhanced the military capability of its owners and furnished the means of violence for political organizations. . . .” that could make use of it. Trade and warfare went together in the formation of new African states that controlled land, labor, and resources such as gold.

Source: Wolf, *People without History*, 209–11.

6. North American Fur Traders

French and English fur traders, like their Siberian counterparts, enlisted the services of woodland American Indians to trap beavers and other fur-bearing animals for the rapidly expanding hat trade in Europe. European forts on the St. Lawrence River and the Great Lakes were defended by artillery and soldiers bearing muskets. The Europeans spread the taste for metal, cloth, beads, and other goods, including guns, among the Indian peoples in the region. Relations among Indian groups changed because competition for fur-bearing territory provoked wars among them. And Europeans pushed farther and farther west as animal populations were depleted.

Source: Wolf, *People without History*, 209–11.



7. North American Plains Indians

Apache, Shoshoni, Blackfoot, Comanche, and Dakota tribes were among the peoples that spread the use of horses and mounted warfare and hunting across the Great Plains. The Dakota received guns from the French, who armed them to compete with Indians who supported the English. The Dakota hunted buffalo on horseback using guns and came to dominate the northeastern plains, trading with European merchants on the Mississippi. Gradually, they gave up lives of cultivating the soil. Plains tribes preserved buffalo meat as pemmican and sold it to fur traders as they moved westward in Canada.

Source: Wolf, *People without History*, 176–8.

8. Japanese Samurai

The case of Japanese adoption of gunpowder weapons is remarkable. In 1543, a few Portuguese went to Japan bearing arquebuses, a type of matchlock musket. A local aristocratic leader bought examples of the handguns and gave them to his swordsmiths. The Japanese tradition of metalwork was highly developed, so it was easy for them to reproduce the simple guns. Interest in the new weapons grew among some Japanese clans, and the guns became widely produced and sold among military elites. Elite clan leaders equipped and trained lower-class Japanese farmers to use matchlocks in battle. Although guns required training, it was much less than the training samurai, or noble warriors, needed for their military skills. Firearms training proved an effective way for commanders to gain battlefield advantage. In 1584, this arms race led to victory by a commoner, Toyotomi Hideyoshi. Even though he tried to disarm the peasants and bring the samurai under central control, his death led to more warfare. The Tokugawa Shogunate was established in 1600. This long-lasting ruling group greatly limited the use of guns in Japan, restricting their manufacture and use, and giving the government control over them. The shogun maintained peace and preserved the social status of the samurai. The tradition of the sword won out over the rule of gunpowder weapons. Although the Japanese became skilled in the manufacture and use of gunpowder weapons, Japan became the only country that rejected them following military success.

Source: Michael S. Neiberg, *Warfare in World History* (New York: Routledge, 2001), 37.

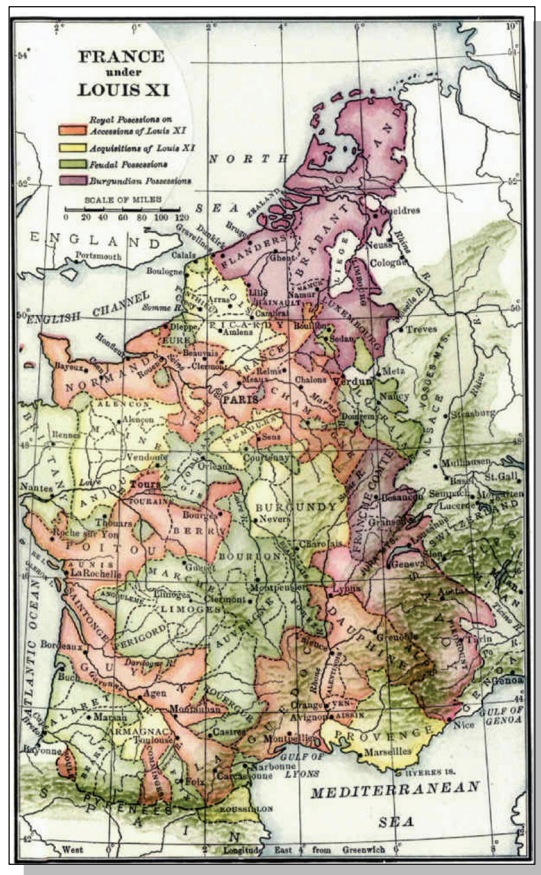
9. Ming and Qing Emperors of China

The Chinese probably invented gunpowder and the earliest gunpowder weapons. However, the Ming emperors, after defeating the Mongols, were more interested in defense than offense. Moreover, early cannons were not reliable enough to be effective against nomadic warriors. Unlike their European counterparts, Chinese rulers would not benefit from besieging towns and fortresses. Instead, they needed to defend their northeastern frontier, and for this they had to deploy a large infantry equipped with crossbows. Gunpowder and incendiary weapons were a supplement to traditional methods of warfare. Ming commanders studied superior Turkish, Portuguese, and Dutch artillery designs and ordered Chinese metal founders to copy them. China's traditional defenses and the distaste Confucian government officials had for professional soldiers resulted in a growing lag between China and lands farther west in developing firearms technology.

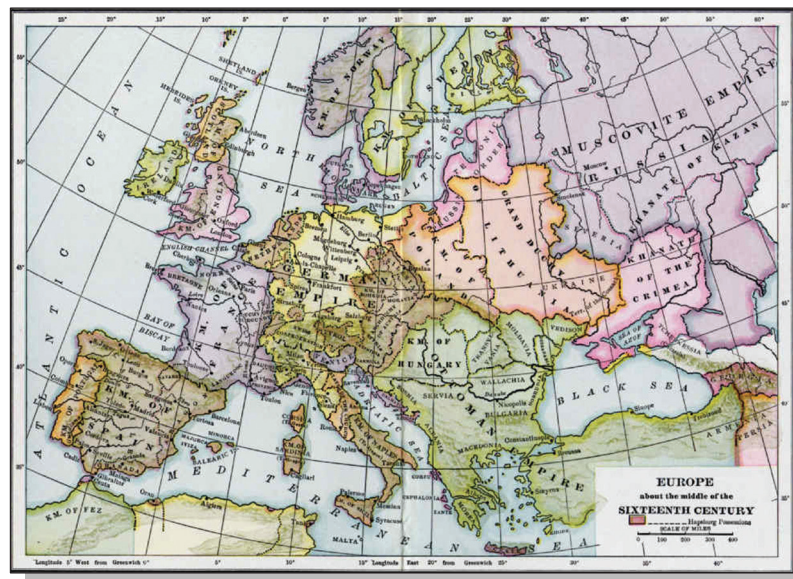
Source: Michael S. Neiberg, *Warfare in World History* (New York: Routledge, 2001), 37.

10. France in the Reign of Louis XI (1423–1483) and in the Mid-Sixteenth Century

Compare the two maps of France and, using the text on gunpowder in the readings, infer and discuss the effects of gunpowder weapons on the French monarchy.



France under Louis XI (1423–1483) during the Hundred Years' War.



Europe in the Mid-Sixteenth Century.



Advantages of Gunpowder Weapons for This Group	Disadvantages of Gunpowder Weapons for This Group
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

LESSON 5

Portraits of Potentates

Preparation

Prepare copies of Student Handouts 3.5.1–3.5.3 and maps at the end of this chapter.

Introduction

Centralizing monarchs with gunpowder armies gained power over lesser rulers in their realms and expanded both their territories and their tax-gathering capabilities. While warfare was expensive and some monarchs went into heavy debt to finance their military adventures, successful rulers also greatly expanded their state's agricultural and commercial wealth. Rulers displayed this wealth in portraits executed for posterity by skilled artists. Through close visual analysis, these portraits can reveal much about the time and the rulers.

Activities

1. Distribute Student Handout 3.5.1 and ask students to examine the portraits. (Larger versions can be found online through a quick search of the names and dates of reign of each potentate.)
2. Distribute Student Handout 3.5.2. Ask students to create trading cards of the monarchs shown in Student Handout 3.5.1, listing their dates of reign and the capital cities from which they ruled. Students should also do research and write a brief biography (100–150 words) of one or more of these rulers, describing at least three major events in their reign. The trading cards can be used as comparative material for essay assignments in DBQ (Document-based Question) format, for review, or for role-playing activities.
3. Using the maps at the end of this chapter, have students locate the places where the monarchs ruled. Also, have students find the capital city where monarchs resided.
4. Distribute Student Handout 3.5.3. Ask students to choose three of the portraits in Student Handout 3.5.1 and take notes on the questions and categories included in Student Handout 3.5.3. Teachers may also assign groups to work on three specific rulers and then compare notes as a class. Additional portraits may be used for regional studies or longitudinal studies of specific dynasties.

Extension Activities

1. Assign individual students to create additional trading cards for other world rulers from the period, including Inca and Aztec rulers in the Americas, African rulers, or others. Display all cards on a classroom mobile made with strings and dowels or coat-hanger wire.
2. This activity can be used to introduce the concepts of sovereignty, absolute monarchy, divine right of kings, and similar concepts that modern democratic ideas later challenged. Ask students to list ways in which these portraits placed the sovereign on a different level from the rest of society. For fun, students may think of, or research, advertisements that tell consumers that they can “live like kings” as an aspiration reflected in material culture.

Assessment

Write an essay using Student Handouts 3.5.1–3.5.3 in which you compare and contrast rulers from this period and identify common patterns.

Portraits of Potentates



Philip II, Spain, 1556–1598.



Elizabeth I, England, 1558–1603.



Louis XIV, France, 1643–1715.



Xizong, Ming Emperor, 1620–1627.



Shah Abbas the Great, Safavid Empire of Persia,
1587–1629.



Sultan Sulayman, Ottoman Empire, 1520–1566.



Jahangir, Mughal Empire of India, 1556–1605.



Catherine the Great, Russia, 1762–1796.

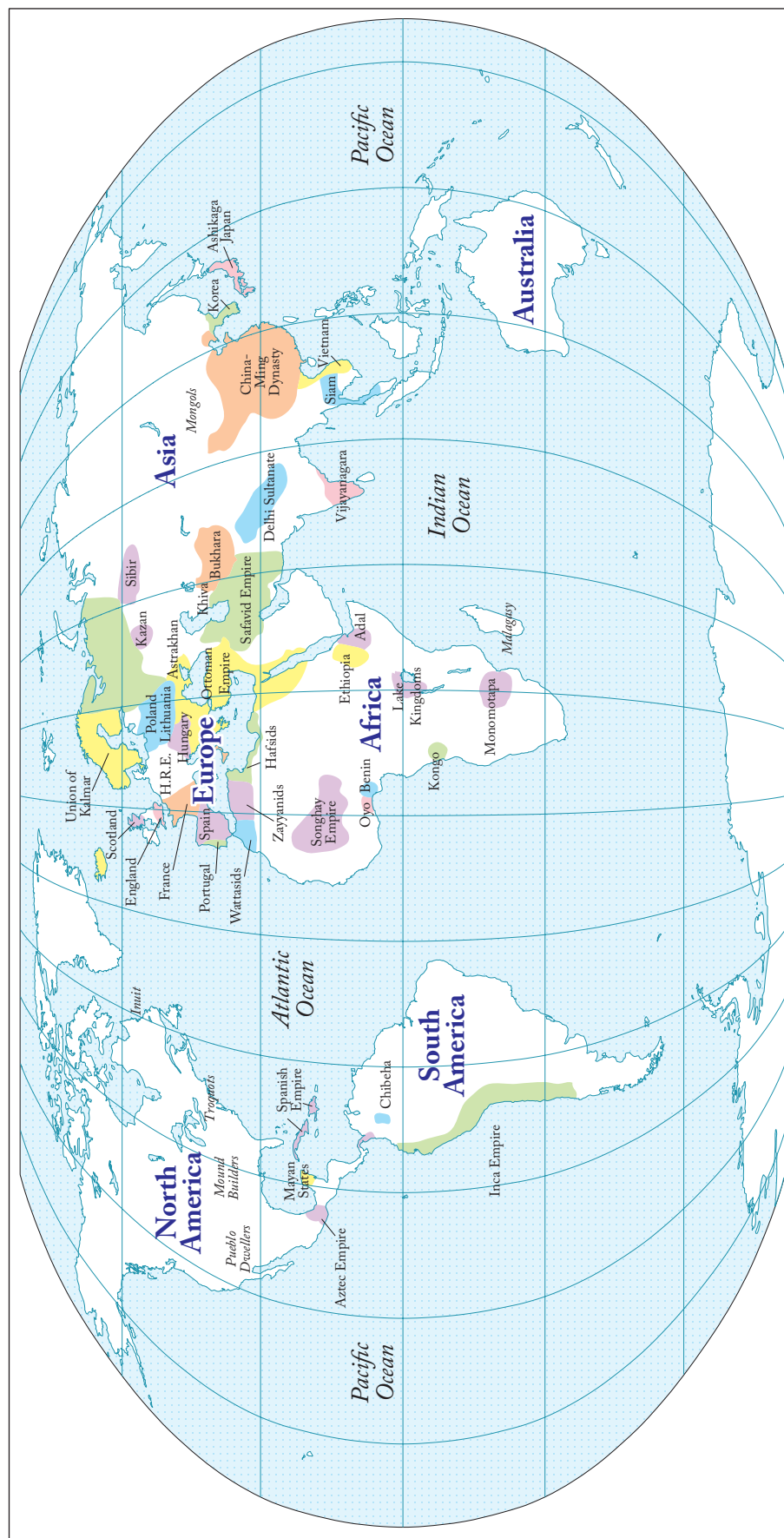
Trading Card Template

Portrait	Ruler's name
	Dates of rule
	Capital city, city of residence
	Country or empire
Biography	
Three important events during this ruler's reign	
1.	
2.	
3.	

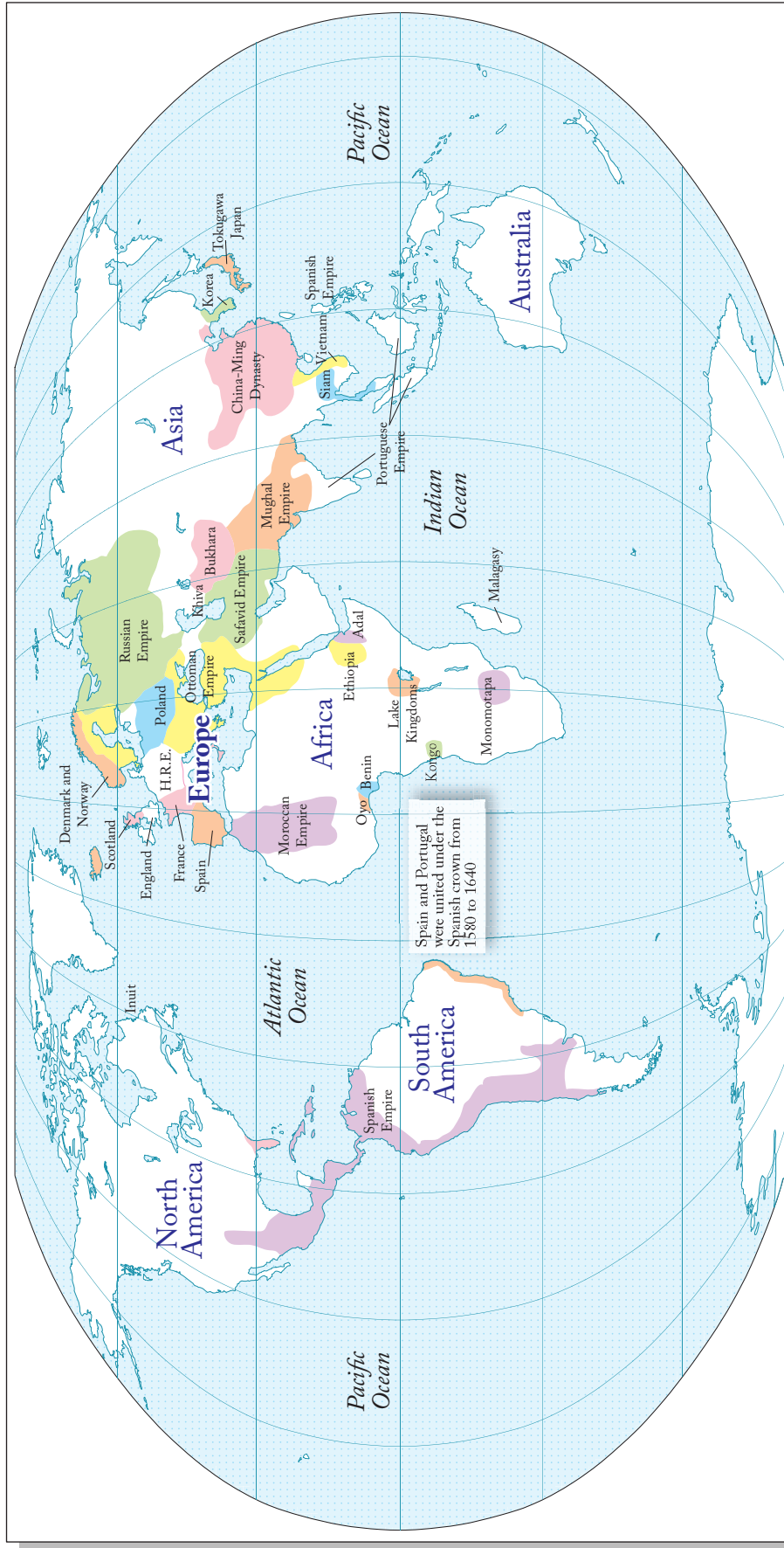
Visual Analysis of the Potentates' Portraits

Name of Ruler in the Portrait			
List 10 items of costume and accessories that you notice in the portrait.			
Identify and describe 3 examples of visual imagery the artist used in the painting to show that this ruler is a powerful figure.			
List and describe 5 luxury items illustrated in the portrait that demonstrate advanced levels of trade and manufacture or arts in the country.			
What visual ideas can you identify that all of the portraits share?			
What differences can you identify among the portraits?			

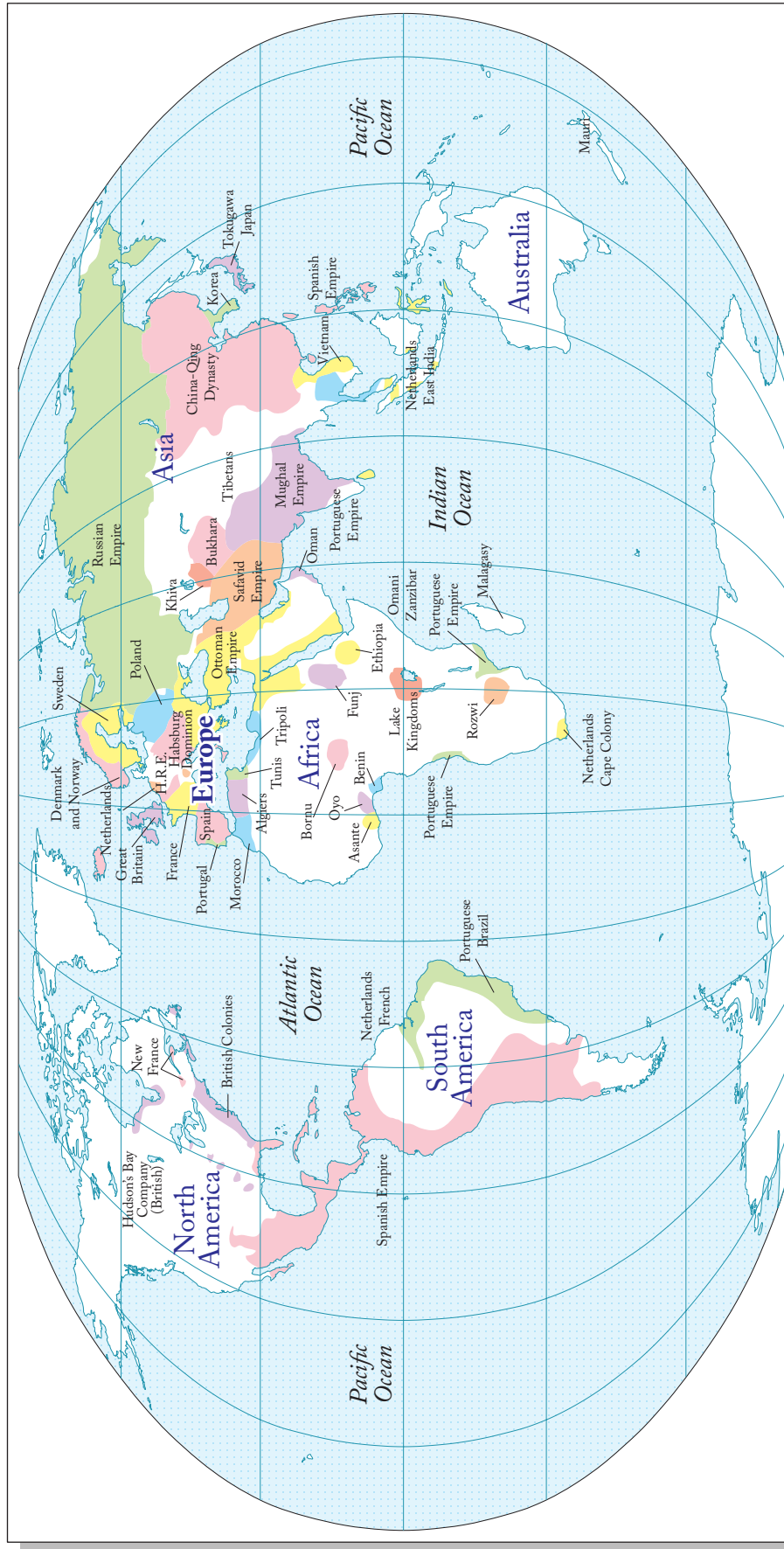
States and Empires in 1519



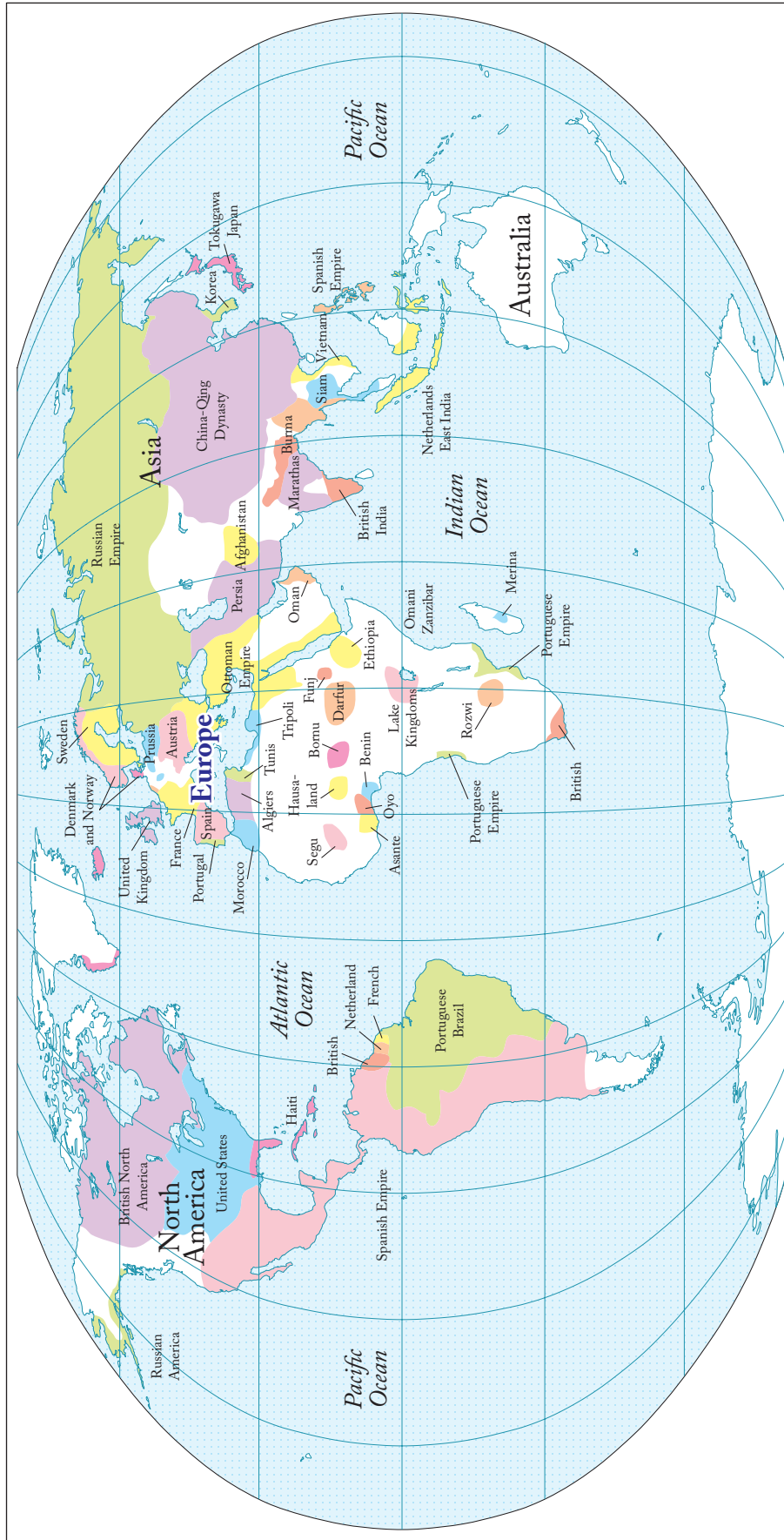
States and Empires in 1600



States and Empires in 1714



States and Empires in 1804



The Global Economy Takes Shape



WHY STUDY THE EMERGENCE OF THE GLOBAL ECONOMY?

Historians view the creation of new societies in the Atlantic Rim as a significant turning point in world history. In Chapter 2, “The Columbian Exchange and Its Consequences: 1400–1650,” we explored the story of how peoples began to interact more across the Atlantic Ocean, and how those interactions affected the environment and the social, biological, and cultural institutions around the world. The focus in this chapter is the creation of a global economy due to the interaction of peoples in the Americas, Europe, Africa, and Asia—an economy that would put the world on a path towards globalization.

This chapter leads students through investigations of the creation of this global economy that included peoples from all over the world. The first lesson will introduce students to the three products they will learn about as representative samples of some of the products that were in demand in the global economy; students will map where these products originated. The three lessons that follow highlight each of these products—fur, indigo, and tea—and allow students to trace their journey through the world using map work and primary and secondary sources. Students will become familiar with the economic terms of “producer” and “consumer” and will also have to think about the role of the movers of those products who, thanks to developments in maritime technology, were able to create new markets and new demand for products. Finally, students will use their completed maps and other sources to analyze who dominated global trade by 1800.

OBJECTIVES

Upon completing this chapter, students will be able to:

1. Define globalization and how the development of a global economy from 1500–1800 exemplifies the traits of globalization.
2. Analyze the role of maritime technology in creating a global economy.
3. Define the role of various producers, movers, and consumers in creating, transporting, and using the various products that created a global economy from 1500–1800.
4. Discuss who dominated global trade by 1800 and why.

TIME AND MATERIALS

This chapter will take one week of 45-minute class periods. The first day will be an introduction to the chapter (Lesson 1) and the following three days will each focus on a particular product (Lessons Two through Four). The final day will be the culminating assessment (Lesson 5). Materials are included in the chapter, but students will need an atlas to locate particular countries.

HISTORICAL CONTEXT

The emergence of a truly global economy was another consequence of the great global convergence, which linked together all major regions except Antarctica in a single web of exchange. Silver was the great lubricator of global trade. In the 1550s, silver mined in the Americas became available to Spain, then to the rest of Western Europe. Silver financed Europe's increasing involvement in the world market, which was centered in East and South Asia well into the eighteenth century. By 1800 the world economy was shifting toward the Atlantic as its center.

Far-reaching changes in maritime shipbuilding and navigation greatly speeded global exchange in Big Era Six. New maritime technology, plus the European innovation of mounting cannons on shipboard, permitted the rise of the Spanish, Portuguese, Dutch, British, and French maritime empires. These empires were larger and more diverse than any earlier ones. New firearms technology also contributed to the expansion of Afroeurasian land empires that were better organized (for controlling their subjects and collecting taxes from them) than earlier agrarian empires. These states included the Turkish Ottoman, Safavid Persian, Mughal Indian, Qing Chinese, and Romanov Russian empires, plus others in Inner Eurasia, West Africa, and Southeast Asia.

The world economy was Asia-centered at the beginning of Big Era Six, but it gradually underwent a major shift in organization. By 1800 it was becoming focused on the Atlantic world. How did this come about, and what were the main consequences? The linking of Afroeurasia with the Americas was the most important factor. The sudden arrival in the sixteenth century of vast quantities of silver on world markets led to a rapid increase in world commercial

exchanges of all kinds. This was as true for Asia, where the economies of both China and India were based on silver coinage, as it was for Europe. In the long run, it seems clear that Europeans benefited the most from this development. But this was not apparent at the time.

In the early part of Big Era Six, European participation in the trade of Africa and Asia was seriously limited. Europeans did not produce commodities or finished goods that Asians wanted to buy. American silver, which American Indians and African slaves extracted from the earth, provided a solution for capitalist entrepreneurs. These merchants could purchase Asian commodities (pepper, spices, coffee, tea, porcelain, carpets, silk, and cotton cloth) with American silver and, to some extent, gold. The Japanese also supplied silver to the Asian market. Once Europeans with precious metals to sell entered the trade of Asia, they also profited as specialists in moving goods from one part of Asia or Africa to another—Chinese porcelain to India, for example, or Indian textiles to West Africa. The trade boom in maritime Asia soared to new heights between the sixteenth and eighteenth centuries. Because it greatly benefited European states and merchants, however, the weight of the world economy began to shift from East and South Asia to the Atlantic world.

THREE ESSENTIAL QUESTIONS

Humans and the Environment

What impact did the fur trade have on the northern regions of North America (specifically the northern United States and Canada) in terms of environmental change and animal habitats?

Humans and Other Humans

Why do you think humans are so fascinated by products they have never seen before? What makes humans embrace a foreign product? Research an example of a specific product that became part of the global economy through human-to-human commercial exchange. How did this product affect a specific society in history?

Humans and Ideas

In order to move all of the products in the global economy, ships and navigational tools had to be improved and great advancements in maritime technology had to be made. Research one of the advances developed between 1500 and 1800 and explain how it contributed to the moving of products in the global economy.

KEY THEMES

This chapter addresses the following historical themes:

Key Theme 2: Economic Networks and Exchange

Key Theme 6: Science, Technology, and the Environment

CORRELATIONS TO NATIONAL HISTORY STANDARDS

National Standards for World History

Era 6: The Emergence of the First Global Age, 1450–1770. 1C: The student understands the consequences of the worldwide exchange of flora, fauna, and pathogens.

INSTRUCTIONAL RESOURCES

Bailey, Katharine. *Radisson and des Groseilliers: Fur Traders of the North*. In the Footsteps of Explorers series. New York: Crabtree, 2006.

Brook, Timothy. *Vermeer's Hat: The Seventeenth Century and the Dawn of the Global World*. New York: Bloomsbury Press, 2008.

Frank, Andre Gunder. *ReOrient: Global Economy in the Asian Age*. Berkeley: University of California Press, 1998.

Legrand, Catherine. *Indigo: The Color that Changed the World*. London: Thames & Hudson, 2013.

Marks, Robert B. *The Origins of the Modern World: A Global and Ecological Narrative from the Fifteenth to the Twenty-first Century*. 2nd ed. Lanham, MD: Rowman and Littlefield, 2007.

The North American Beaver Trade. Peterborough, NH: Cobblestone Publishing, 1982. Children's magazine all about the fur trade in North America. Includes teacher resources.

Richards, John F. *The Unending Frontier: An Environmental History of the Early Modern World*. Berkeley: University of California Press, 2003.

Rose, Sarah. *For All the Tea in China: How England Stole the World's Favorite Drink and Changed History*. New York: Penguin Books, 2011.

Standage, Tom. *A History of the World in Six Glasses*. New York: Walker, 2006. A fun and readable book with a great section on tea in the global economy.

Wolf, Eric R. *Europe and the People without History*. Berkeley: University of California Press, 1982. A classic scholarly work by an anthropologist on the development of the modern global economy. Includes a full chapter on the fur trade.

LESSON 1

The Global Economy: A Study in Products

Introductory Mapping Activity

Introduction

Have you ever stopped to think how the shirt you are wearing or the candy bar you are eating got to you? Sure, you bought it in a store, but where did it come from before it reached you? Do you know how many people from different places around the world were involved in making the product you are enjoying?

These are questions that historians have been asking about products for a long time. Our world has been economically connected for several centuries through a process we call globalization. You may have heard of this term. Globalization is the process by which peoples around the world have become increasingly interconnected through rapid communication and transport. Globalization involves the intensification of economic, social, cultural, political, and biological interchange worldwide, resulting on the one hand in a general acceleration of change and on the other in efforts to strengthen the bonds of identity and community on the local and regional levels. In this series of lessons, you will learn how our entire world became economically interconnected for the first time beginning approximately 1500 CE. Although interregional trade across Afroeurasia had been going on for centuries, the Columbian Exchange and the opening of passages across the Atlantic and Pacific began to shape a truly globalized economy.

Thanks to advances in maritime technology and the increased volume of trade that followed these developments, people from both sides of the Atlantic became exposed not only to different peoples and ideas but also to different products that facilitated a new desire for buying and selling, or producing and consuming. These lessons will introduce you to a few of the many products that illustrate the global nature of this new economy. You will meet the people who made or cultivated the product (the producers), the people who got the product to the people who wanted it (the movers), and finally the people who wanted and received the product (the consumers). In the chapter assessment, you will investigate the question of who really controlled the global economy by 1800. Did a particular country or people dominate the trade of all of these products in 1800?

In this first lesson, you will be introduced to the three products that you will follow in this chapter. Your job will be to read primary and secondary source excerpts and figure out where the products were first developed or cultivated and then label them on the map.

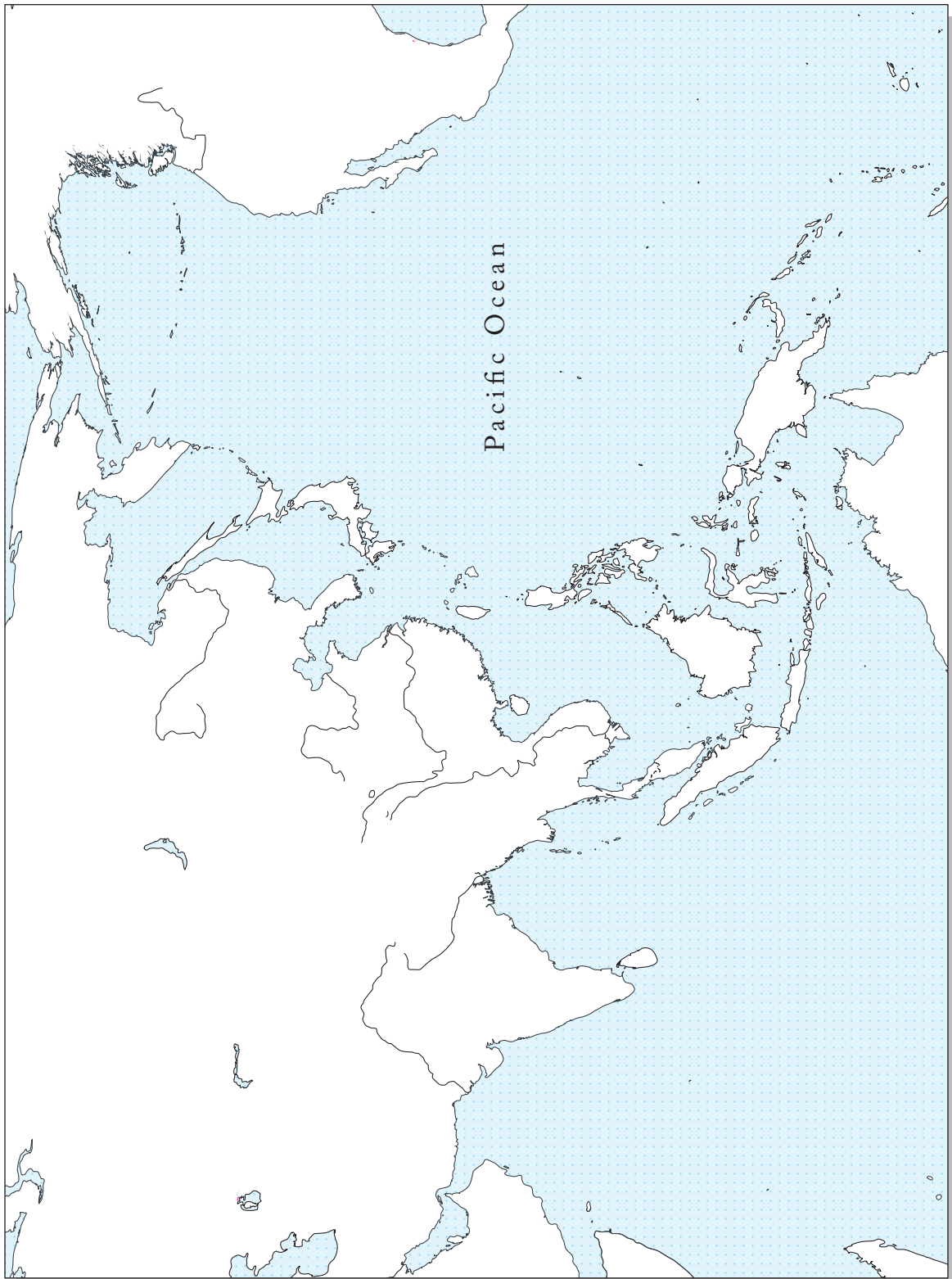
Activities

1. Student Handout 4.1.1 provides the maps students will use throughout the lessons to label where each product originates, moves, and is consumed. Students have two choices of maps, one centered on the Pacific Ocean and one on the Atlantic Ocean. They will need to use an atlas to locate particular countries and to draw them on the map to label the precise origin of the product. They will also need to create a legend, or key, for their map so they can easily distinguish one product from another. They should use a different symbol for each product, and they can create that symbol. Make sure they write their legend on the lower left-hand corner of Student Handout 4.1.1.
2. Using Student Handout 4.1.2, have students read about the origins of the fur trade in North America. They should label on the map where the purchase of beaver furs took place. They may choose their symbol for fur, perhaps the letter “F” or a picture of the animal whose fur was used to make products from fur pelts. Whatever they choose, this will be their symbol for fur throughout the chapter.
3. Using Student Handout 4.1.2, have students read about the origins of indigo. They should label on the map where indigo production took place. They may choose their symbol for indigo, perhaps the letter “I” or the color of indigo. Whatever they choose, this will be their symbol for indigo throughout the chapter.
4. Using Student Handout 4.1.2, have students read about the origins of tea. Students should label on the map where tea was cultivated. They may choose their symbol for tea, perhaps the letter “T” or a symbol of a tea leaf. Whatever they choose, this will be their symbol for tea throughout the chapter.

Feel free to have students substitute the map on Student Handout 4.1.1 with a larger one if they need more space. Students will be using a different map each day to trace how products move through the global economy.

Assessment

Now that students have labeled where all three products originated, they should look carefully at their first map. They should write in a few sentences any observations they can make about where the products were produced. What kind of conclusions can they make based solely on where the products originated? What other kinds of information do they need in order to explain the global economy from 1500 to 1800?





Origins of Fur

During the 1500s, Europeans began exploring the east coast of mainland North America. They traded items such as knives, hatchets, and beads to Native Americans for fur and meat. Indian trappers such as the Iroquois brought beaver furs from the interior to the St. Lawrence River and traded there for manufactured goods from Europe. Out of these early exchanges a formal fur trade was born in North America. It began in the area that is today called Quebec. Because the best pelts were from areas that had severe winters, most trade was in Canada. Some trade, however, also developed along the Mississippi River and to the west in the Rocky Mountains.

Origins of Indigo

True indigo comes from a plant species called *Indigofera*, which is a subtropical shrub that grows to be 4–6 feet tall. The leaves of the indigo plant are what make the beautiful blue dye that indigo is famous for around the world. The word “indigo” comes from ancient Greek, meaning “the Indian dye,” or *indiko*. This is a clue about where the ancient Mediterranean world got indigo.

Many different species of *Indigofera* have been found all over the world, from Australia to Madagascar. Many societies have used the plant’s blue dye for religious, cultural, social, political, and aesthetic purposes. Various species of the plant have been found in Guatemala and Peru, where they were used for a variety of purposes long before Europeans came to the Americas. Indigo also grows wild all over the African coast and has been used as a symbol of wealth and fertility in West African societies for centuries. Modern-day countries like Mali, Cameroon, Nigeria, Niger, and Burkina Faso all have a rich history of dye techniques using indigo. Asian societies including India, Indonesia, Japan, and China have a long tradition of using indigo to print, dye, and do artistic work with textiles.

Origins of Tea

Tea is made of the dried leaves, buds, and flowers of the tea plant. It originated in Asia in what is now the border region between India and China. The first Chinese written reference to tea goes back to the first century BCE. By the fourth century BCE, tea was deliberately grown as a medicinal, religious, and popular drink. It first became the national beverage of China during the Tang Dynasty (618–907 BCE).

LESSON 2

Fur

Introduction

Have you ever thought about where your favorite hat comes from? Was it made in one place? How did it get from where it was made to your favorite store? What kind of profit do hat makers get?

The fur trade in North America began between the Iroquois and Europeans in the early 1500s. Within a few years, French, English, and Dutch fur traders were bartering with the Iroquois throughout the Mohawk Valley in order to compete to control the trade. Even though other furs were traded, such as fox and mink, the beaver became the most valuable fur by far. Why? Beaver fur is soft, smooth, waterproof, easily shaped, and long-lasting. It also became the most fashionable type of felt hat in Europe from the 1600s until the 1830s. Beaver pelts were made into hats in Western Europe and Russia after a long and specialized process. Both rich and middle class Europeans were willing to pay a lot of money for beaver hats.

Over-hunting in Europe had created a real need for a new source of beaver fur, so the European discovery of the North American beaver was a big deal for traders. Whoever controlled the trade of fur in North America stood to profit immensely. The first Europeans to dominate the trade were French. Explorers such as Samuel de Champlain established trading posts in their territory called New France. Nations such as the Iroquois and Huron would trade fur pelts in order to get items of new interest to them, such as knives, pots, wool blankets, axes, and guns. Mirrors became one of the most essential trade items because men could use them to dress and paint themselves without the help of their female relatives. Indigenous men and women were both involved in the fur trade. The men captured the beavers, and the women tanned the hides and removed the rougher outer fur before trading them to the Europeans for manufactured goods.

In 1670, a major change occurred. The British founded the Hudson Bay Company. It soon controlled all the fur trade in the lands around the Hudson Bay. This is called having a monopoly. In order to trade with the various Indian nations, the Hudson Bay Company set up trading posts where the fur could be brought in exchange for money or goods. This arrangement worked well for a while, and merchants sent furs to London instead of Paris. British manufacturers made money selling their hats and other fur products back to indigenous and European consumers in North America. Generally throughout the 1770s, fur trade took place at the large trading posts established by European trading companies. Then in 1783, the North West Company was founded in order to compete with the Hudson Bay Company by looking for new sources of fur in the northern and western regions of Canada. This was the first joint stock company in Canada and possibly North America. Competition between the British and the French for control of the fur trade continued through the nineteenth century. Russian merchants, who trapped and traded sables and other fur-bearing animals in Siberia, also got into the North American

game. They established a fur trading company in Alaska when it was a territory claimed by the Russian Empire. In 1799, they founded the Russian-American Company.

Activities

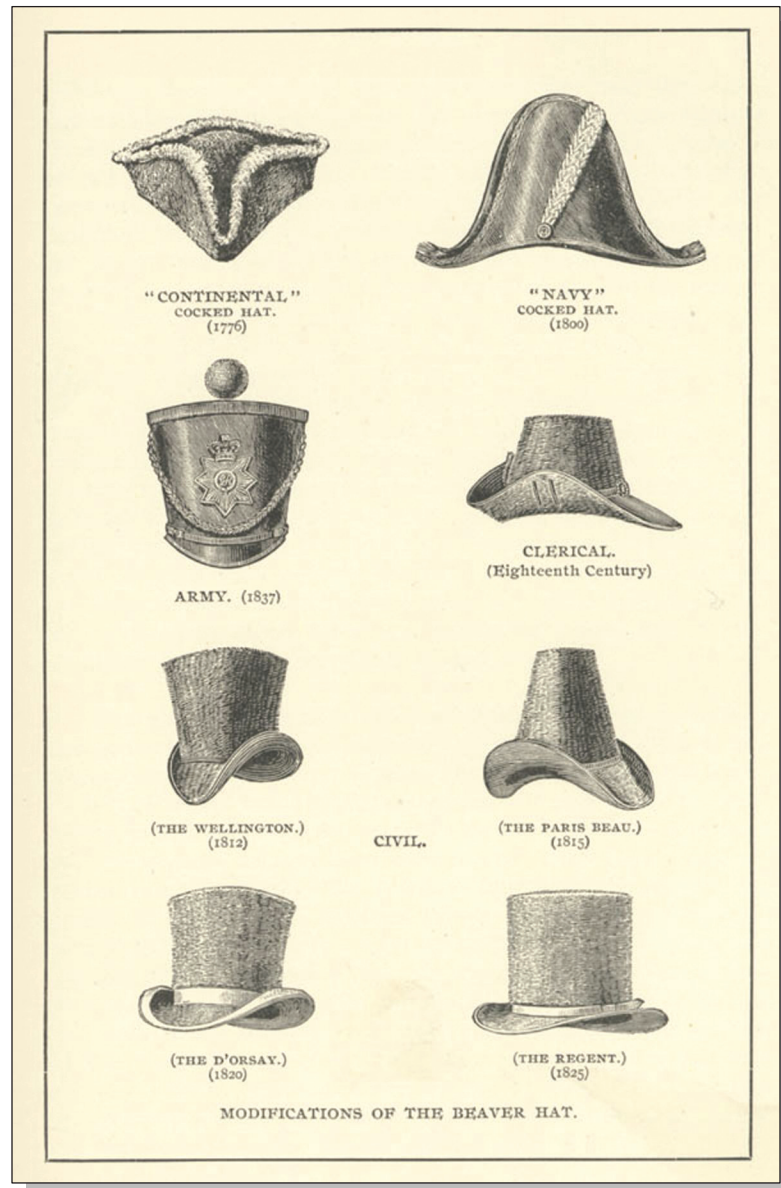
1. Students should label on the map that they are using from Student Handout 4.2.1 those places where beaver fur was produced in North America, where it was sent, and where it was consumed.
2. Students should answer the following questions using the information they have read in this lesson's Introduction and in Student Handouts 4.2.2 and 4.2.3:
 - a. Who is the producer of the fur? What does the producer get for trading or selling the fur?
 - b. Who is the mover of the fur? What do movers get for transporting the goods?
 - c. Who is the consumer? What do consumers give in order to get the goods they want?
 - d. How did the fur trade benefit the people who produced the fur, transported it, and consumed it or used the products made from it?

Ideally for question 2c, students should see two consumers, both Europeans and Native Americans. Europeans wanted the hats and Native Americans wanted the European goods of particular interest to them.

Assessment

1. Have students create a time line of important dates in the fur trade.
2. Ask students to look at the hats in Student Handout 4.2.2. What observations might they make about the types of hats produced over time?
3. Analyze the data in Student Handout 4.2.3. What conclusions might they make about the fur trade in North America from 1600 to 1800?





Modifications of the beaver hat.

French Exports to Europe

In 1722 and 1723, three French forts along the Great Lakes supplied the following goods in exchange for about 8,000 beaver pelts:

1605 sewing needles
632 catfish hooks
273 men's woolen shirts
336 women's woolen shirts
214 children's woolen shirts
217 butcher knives
2,109 other knives
243 pounds of red and yellow copper cauldrons
328 axes
59 guns
4,493 gun flints
3,640 pounds of shot and balls
6,463 pounds of flour

French Exports to Europe

1620–1630	About 30,000 beaver skins a year
1680s	About 140,000 beaver skins a year
1800	About 200,000 beaver skins a year

LESSON 3

Indigo

Introduction

Think more about the materials that go into making your hat. How did it come to be that particular color that you love?

Although the indigo plant has been found in many different parts of the world for centuries, the large-scale cultivation of indigo started in sixteenth century India. European maritime explorers like Vasco da Gama opened up direct sea links to India beginning in the late fifteenth century. Consequently, Portuguese, English, and Dutch traders brought the indigo plant to Europe from India. By the late 1600s, indigo was being marketed in most European nations. Why the desire for indigo? It was exotic, it was superior to the woad plant used in Europe to produce blue dye, and it helped satisfy the new hunger that Europeans had for items from far corners of the globe. European consumers wanted indigo-dyed fabrics, paints, and laundry bluing (which made white fabrics appear whiter). The East India Company imported huge quantities of Indian indigo in the mid-1600s. Indian farmers were hard-pressed to keep up with the demand, but European nations also resented the Indian monopoly of the indigo trade.

Since indigo could not grow in Europe's temperate climate, European merchants began to plant it in their tropical colonies in the Caribbean. The best indigo came from Guatemala and the French West Indies and sold for prices two or three times higher than that produced by other American colonies. Still, no American indigo producer could match the quality of the Indian product. Eventually, the British established commercial cultivation and production of indigo in India. Plantations began in 1777, and by 1788 most of the production of indigo purchased by the East India Company originated from India. As a dye it replaced American supplies, which were disrupted during the American Revolution. The East India Company supplied the textile industries of the Industrial Revolution. Indigo was used to dye European military uniforms as well as the blue coats the Continental army wore in the American Revolution.

West Africa also had a rich history of indigo production, primarily through the work of West African women. Although Africans were not initially bought and sold by Europeans for their skills with indigo, it quickly became apparent that many possessed particular knowledge about the complicated process of producing the dye. Consequently, African slaves worked on plantations in the tropical Americas to produce indigo and indigo dye.

Eliza Lucas Pickney (1722–1793) brought the indigo plant to South Carolina and oversaw a valuable export business to England. Her father had left her in charge of three plantations and eighty adult slaves when he moved back to Antigua to become governor. In 1739, he sent her cassava, alfalfa, ginger, cotton, and indigo seeds. After many trials she managed to produce enough indigo in 1747 to make up a shipment for England. As a result, indigo became the staple crop of South Carolina from the late 1740s to the Revolutionary War.

Activities

1. Ask students to label on the Student Handout 4.3.1 map where indigo was produced, where it was moved, and where it was consumed.
2. Have students answer the following questions using the lesson Introduction and Student Handouts 4.3.2, 4.3.3, and 4.3.4.
 - a. Who is the producer of the indigo? What does the producer get for trading or selling the indigo?
 - b. Who is the mover of the indigo? What do movers get for transporting the goods?
 - c. Who is the consumer? What do consumers give in order to get the goods they want?
 - d. How did the trade benefit the people who produced the indigo, transported it, and consumed or used it or the products made from it?

Assessment

1. Have students create a time line of important dates in the indigo trade.
2. Ask students to analyze the data in the table in Student Handout 4.3.2. What kind of observations might they make about the exporting of indigo from South Carolina from 1745 to 1775? Between what years did the largest exporting of indigo seem to happen? Ask students why they think those years might have been important? (Students may look for clues in the lesson Introduction.)

After students answer question 2 of the assessment, you may want to share this information with them: By 1775, indigo produced one-third of the colony's income and South Carolina's planters were exporting 1.1 million pounds of indigo, which is worth \$30 million today. Another interesting fact is that after European scientists determined how to chemically synthesize indigo in the late nineteenth century, the Indian indigo growing industry fell rapidly into decline.



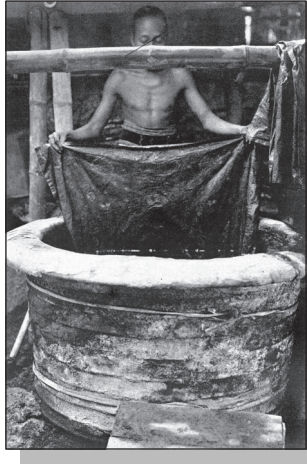
South Carolina Indigo Exports, 1745–1775

1745	5,000 pounds
1748	134,118 pounds
1754	216,000 pounds
1757	894,500 pounds
1775	1,107,660 pounds

Sources: Adapted from William James Hagy, *This Happy Land: The Jews of Colonial and Antebellum Charleston* (Tuscaloosa: University of Alabama Press, 1993), table 26.

Marc Egnal, *New World Economies: The Growth of the Thirteen Colonies and Early Canada* (New York: Oxford University Press, 1998), figure 6.11.

Indigo Dyeing in West Africa



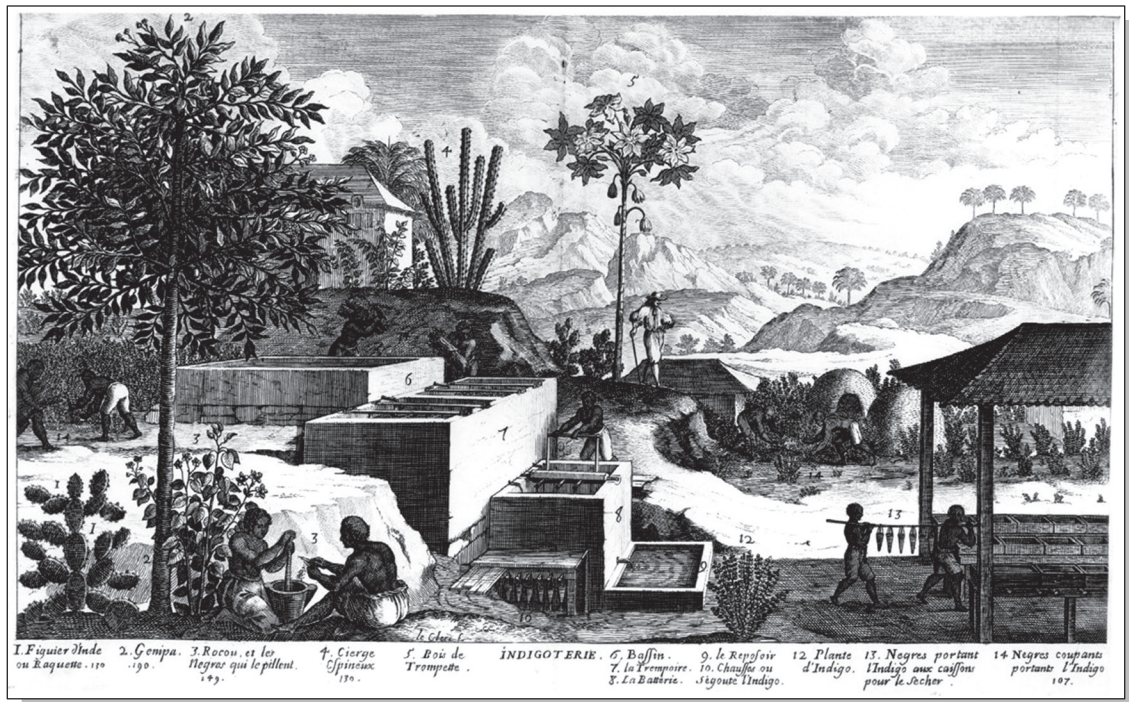
Dyeing batik textiles with indigo.



Tuareg men at the Festival au Desert near Timbuktu, Mali 2012.

These are pictures of Tuareg people, who live today primarily in Mali, Niger, Libya, Algeria, and Burkina Faso. They are sometimes called the "Blue People" because their traditional robes and turbans are made of indigo pigment and therefore stain the wearer's skin dark blue.

The Indigo Plant Farm



This print depicts and labels the key parts of the process of producing indigo. Slaves are working at different parts of the production process. In 1789, over 3,000 plantations in Saint Domingue (modern-day Haiti) produced indigo.



Flowering *Indigofera frutescens*.

LESSON 4

Tea

Introduction

What is your favorite beverage? Is it popular just among your friends or in other places in the world? Why do Americans drink so much coffee, and the British drink more tea? Is it because Starbucks is an American company? What is the most common hot drink in China?

“Better to be deprived of food for three days than of tea for one.”

—Chinese proverb

“Thank God for tea! What would the world do without tea? How did it exist?”

—Sydney Smith, British writer (1771–1845)

These two quotes exemplify the power of tea in the two countries best known for tea. Not only did tea grow in demand from 1500 to 1800, but it also grew in profit for the Chinese. As tea became more popular, the British paid more and more silver to the Chinese in exchange for tea. In addition, tea had to be imported from China, and the Chinese tightly controlled the number of chests of tea leaves that left its docks. A Dutch ship brought the first shipment of tea to the Netherlands in 1610, and by the 1650s tea was known in England.

At the beginning of the eighteenth century, almost no one drank tea. By the end of the century, enough tea was coming into Britain for everyone in the country to have a cup or two a day. What allowed for this rapid change? Tea became fashionable thanks to Charles II's queen, Catherine of Braganza, a Portuguese princess who had grown up drinking tea. When she married Charles in 1662 and came to England, she made tea a fashionable drink in court and among aristocrats. Subsequently, a whole tea culture emerged, including the tea shop, tea parties, tea gardens, and the marketing of tea to women, who had not been permitted in the men-only coffeehouses of London. The ultimate expression of this practice was “tea time,” where tea became the center of the afternoon meal. Sweetened with sugar produced by slaves in the Americas, tea became the favored drink of workers during the Industrial Revolution. It also stimulated mass production of products to hold tea, notably the complete tea set or tea service, which rich and middle class British consumers desired.

Transporters such as the British East India Company (BEIC) brought tea to England. In fact, this company enjoyed a British monopoly on exports from the East Indies. Once the company established offices in trading at the port of Canton in China at the beginning of the eighteenth century, the volume of tea entering Britain soared, while prices fell. Therefore, common people, as well as the elite, could enjoy tea. By the early 1720s, tea was the number-one export from China. At the height of prosperity of the BEIC, more than 50 percent of its Asian export value was in tea! In 1773, Parliament passed the Tea Act, which eliminated the tax the BEIC had paid the British government for importing tea to Britain and its colonies in the Americas.

Activities

1. Ask students to label on the Student Handout 4.4.1 map where tea was produced, where it moved, and where it was consumed.
2. Have students answer the following questions using the lesson Introduction and Student Handouts 4.4.2 and 4.4.3:
 - a. Who is the producer of the tea? What does the producer get for trading or selling the tea?
 - b. Who is the mover of the tea? What do movers get for transporting the goods?
 - c. Who is the consumer? What do consumers give in order to get the goods they want?
 - d. How did the tea trade benefit the people who produced the tea, transported it, and consumed it?

Assessment

1. Ask students to create a time line of important dates in the tea trade.
2. Have students analyze the data in Student Handout 4.4.2. What conclusions might they make about the tea trade from China to England?



British Tea Purchases from China

1700–1725	400,000 pounds
1760	2,600,000 pounds
1800	23,300,000 pounds
1808	26,000,000 pounds

Source: <http://www2.binghamton.edu/history/resources/websites-and-syllabi/history-130/documents/tea-opium.html>

Value of Tea Exported from China to England

1781–1790	16.4 million ounces of silver
1800–1810	26 million ounces of silver

Source: http://humanities.cqu.edu.au/history/52148/modules/imperial_commoditiesA.html.

A Josiah Wedgwood Tea Set



LESSON 5

Analysis of the Global Economy

Assessment

Directions

You have spent the last three days looking at three different products that were produced, moved, and consumed between 1500 and 1800. Complete Tasks 1 and 2, and then you will be ready for the assessment activity.

Task 1

Examine the three time lines you have made that show some of the important dates in the production, trade, and use of fur, indigo, and tea in the global economy. Do any similarities and differences stand out to you regarding the chronological events related to each of these products? What observations can you make about the activities of the British East India Company in terms of indigo and tea?

Task 2

Make a chart like the one below and complete it. Use this chart to help you complete the assessment activity.

	Producer	Mover	Consumer
Fur			
Indigo			
Tea			

Directions

Now that you have completed Tasks 1 and 2, choose *one* of the following to complete as an assessment activity.

1. What conclusions can you make about the world economy in 1800? Was it truly global? Write a thesis statement answering this question and use evidence from your maps, time lines, lesson assessments, and what you have read and learned in this chapter to support your thesis in a one-page response.
2. “Consumption is the sole end and purpose of all production; and the interest of the producer ought to be attended to, only so far as it may be necessary for promoting that of the consumer.” —Adam Smith, *The Wealth of Nations*, Book IV Chapter VIII

Adam Smith is one of the most famous economists in modern history, and he is viewed by many as the founder of capitalism. Based on what you have examined in this chapter regarding the global economy, do you agree with his statement? Write a thesis statement answering this question and use evidence from your maps, time lines, lesson assessments, and what you have read and learned in this chapter to support your thesis in a one-page response.

The Scientific Revolution

What Changed?



WHY STUDY THE SCIENTIFIC REVOLUTION?

This chapter examines the important changes in the theories and practice of science that took place in the 300 or so years centered on the seventeenth century. It is these changes, and their interaction with technology and with ideas about the universe and humans' place in it, that underlie almost every aspect of our lives today.

Although rooted in earlier times, a new mindset developed during the Scientific Revolution and had far-reaching results. It validated and promoted:

- The use of reason.
- The search for verifiable evidence.
- The development of ways to confirm or disprove hypotheses.
- The acceptance of the importance of mathematics for the study of nature.
- The shift from an organic and personal to a mechanistic and impersonal view of the universe.
- The concept of universal laws governing the behavior of physical matter.
- The cross-fertilization between science and technology.
- The role of science in gaining knowledge of practical use to humans.

The Scientific Revolution contributed to the rapidly increasing number and diversity of discoveries and inventions that transformed ways of thought and everyday life in significant ways.

The new science of the sixteenth through eighteenth centuries, however, was not an undiluted blessing. It enabled rapid progress in many areas. But it brought with it long-range problems as well as benefits. Scientific exploration was accompanied by changes in mindset that contributed to disturbing changes in society. It produced highly useful knowledge of the natural world but, intertwined with new technologies, contributed to dangerously wasteful exploitation of natural resources. It laid the foundations for ways of preserving, extending, and increasing the comfort level of human life. But it also put into human hands the ability to destroy all life, leading to atom bombs as well as to antibiotics. We are still facing issues connected with science that are rooted in its history.

OBJECTIVES

Upon completing this chapter, students will be able to:

1. Clarify their ideas about the nature of science and identify historical changes in its theory and practice.
2. Identify, and compare, distinctive characteristics of science during the Middle Ages and during the sixteenth through eighteenth centuries (early modern period).
3. Describe changes and continuities in science from the tenth through eighteenth centuries; analyze the appropriateness of the label “Scientific Revolution.”
4. Outline major historical developments that influenced science during the period covered in this chapter.
5. Formulate a hypothesis, identify historical evidence relevant to the hypothesis, and revise it in view of the relevant historical evidence.

TIME AND MATERIALS

This chapter is versatile. The variety and number of activities provided are meant to give teachers the choice to use those most suited to their interests and circumstances. Time taken will vary depending on how many activities are used and how long is spent on each one. Teachers may choose to assign student handouts as homework.

If the time available is severely limited, Lessons One and Two are the core of the chapter and can stand alone. They can be minimally covered in three class periods. Lesson 3 can be done in one additional class period.

No materials are needed other than pencil and paper.

HISTORICAL CONTEXT

From the Middle Ages on, and increasingly thereafter, individual European thinkers appropriated ideas and information from a wide variety of sources and applied them to many kinds of problems. Among the sources they drew on were Arabic translations of ancient Greek texts and original works by Muslim authors, rendered into Latin. Even among those European scholars who focused on the characteristics and operation of nature (as opposed to, say, theology or law), not all shared the same assumptions about how the world works, how we can discover how the world works, and how to approach Muslim or Greek ideas that appear to conflict with the Bible or with Christian doctrine. Science (called natural philosophy until well into the nineteenth century) was not a single unified idea. “New” and “old” ways of approaching nature coexisted at the same time.

Not only the information base but the mindset of educated Europeans underwent radical changes, centered on what is conventionally known as the Scientific Revolution of the seventeenth century. Scholars disagree, however, on whether the term “revolution” is really appropriate. Some of the issues they have raised include these:

- The changes were set in motion by historical conditions and events that occurred in earlier centuries.
- Many medieval ways of thinking about the world continued to be influential as late as the eighteenth and nineteenth centuries.
- There was no agreement even among those engaged in science in the 1600’s about which practices resulted in genuine knowledge. Some advocated reliance on reasoning one’s way to theories (the deductive method, mostly associated with followers of Descartes and with continental practitioners). Others urged the primacy of collecting facts by observation and experiment (the inductive method, mostly associated with English scholars and followers of Francis Bacon).
- The mathematization of science was an important feature of seventeenth-century scientific practice. But while some held that the purpose of science was to study the regularities observed in nature in order to establish mathematically formulated laws of nature, others aimed for knowledge of physical causes and doubted whether mathematics could capture the complexities and contingencies of nature.
- Two very different groups enlisted science in their cause: both radical freethinkers and those conservatives who held that finding universal laws in nature sanctioned the rule of law in society and guarded religious and moral principles against change.
- The changes that occurred during the Scientific Revolution were far from pervasive. They continued to be resisted by a significant number of people working in the field of natural philosophy, as well as by the general educated public. The new ideas left women and people below the upper middle classes virtually untouched before the eighteenth century.

Nevertheless, it would be hard to argue against the claim that by 1800 very basic changes had taken place in thinking about and observing the natural world, though changes came at different times in different places and were accepted in varying degrees. The following are some examples:

Astronomy. The picture of the universe changed from the medieval one, a universe enclosed within crystalline spheres, to consideration of a plurality of worlds and the possibility of an infinite universe; and from belief in fundamental differences in the substance and behavior of matter on Earth and in the heavens to knowledge of the universal laws of motion valid throughout the universe.

Anatomy. The authority of the Greek physician Galen was overturned as a result of Vesalius's hands-on dissection of human corpses, as well as Harvey's experiments in animal vivisection and measurement of the heart's capacity to pump blood.

Mathematics. Theory and practice changed from the pre-1500 routine use of Roman numerals to full use of Indian/Arabic numerals with the zero, logarithms, coordinates, calculus, probability theory, and the slide rule.

Botany and zoology. Medieval classification of living organisms into four elements and four types of soul was replaced by Linnaeus's eighteenth century classification by family relationships. According to Linnaeus, he avoided classing humans with apes only to avoid "bringing down the theologians on my head."

Biology. The strongly rooted belief in spontaneous generation of worms, insects, and even rats from decaying matter, mud, or "ocean vapors" was disproved after 1600 by experimental investigation and microscopic examination of reproductive organs.

Chemistry. Alchemists in the Middle Ages recognized four elements: earth, water, air, fire. They attributed characteristics of living beings to minerals and attempted to transform base metals into gold. In the late eighteenth century, scientists issued a new table of 33 elements, separated air into several gases, decomposed water into newly discovered oxygen and hydrogen, and generally abandoned the idea that the inorganic could be animate.

Pursuit of natural philosophy broadened. In the Middle Ages, it was almost exclusively the province of churchmen in universities. In the early modern period, science in universities continued, but mainly non-church-related people pursued science in voluntary and government-sponsored scientific societies. Those who were not scientists but interested in, and knowledgeable about, science included even people of merchant and craft backgrounds and, by 1800, women.

Before about 1500, Europe was a society that thought of itself as Christendom, with virtually universally accepted values, world-view, and mindset, authoritatively handed down from the past. Intellectual progress was largely thought to depend on rediscovery and absorption of the achievements of ancient Greek and Roman civilizations. By 1800, Christianity had splintered. Many more alternative values and world-views had become known. And the cutting edge of intellectual progress was associated with the application of mathematical models and experimental methods to all aspects of nature.

The promise and threat of the changes in science were associated with the increasingly accepted idea of methodical doubt about all that had been taken for granted. This led to questioning, discarding, and rejecting aspects of the past to start from scratch, abandoning authorities and preconceived ideas, encouraging attitudes that by the eighteenth century expanded to include new ideas for changing society.

Historical preconditions and influences that set the stage for the Scientific Revolution were many and varied:

- Broadening informational, geographical, and cultural horizons were brought about by:
 - The series of Crusades between the eleventh and fifteenth centuries.
 - Overland trade with Asia during the era of the Mongol Empires in the thirteenth and fourteenth centuries.
 - The voyages of discovery followed by colonization starting in the late fifteenth century gave not only individuals but governments a stake in gathering new information, which often cast doubt on traditional authorities.
 - A consistent trickle and occasional flood of philosophical, scientific, mathematical, and other works translated from Greek, Arabic, and Hebrew into Latin, starting in the twelfth century, and into vernacular languages from the seventeenth century; the publication in print of early Muslim as well as Greek and Hebrew scholarship.
 - Increasing demand for literacy and number skills in commerce and in government bureaucracies; acquaintance with scientific principles in crafts and industries such as metallurgy, mining, navigation, the making of scientific instruments.
 - New methods and institutions that promoted sharing of knowledge by heterogeneous groups of people, such as universities, the printing press, scientific societies, salons, coffeehouses, reading groups, and public lectures.
 - The willingness of early modern scientists to draw on the experience and know-how of others, not only scientists and philosophers but also engineers, artisans, navigators, cartographers, gunners, and others.
- Increasing secularization of interests and power bases increased focus on this world rather than on the afterlife; reduced the ability of religious authorities to stifle new scientific ideas that ran afoul of the Bible or Church doctrines.
 - During the Middle Ages, education passed from cathedrals and monasteries to universities. Subjects belonging to natural philosophy became part of the formal university curriculum; theology, while still “queen of sciences,” was only one professional school alongside medicine and law. Moreover, universities were autonomous corporations with a wide range of rights and privileges, including that of the faculty to decide what is to be taught.

- Mobility of labor (partly due to scarcity caused by the Black Death), urbanization, and the use of mercenary armies reduced the effectiveness of formal excommunication from the Church as a way to control belief and behavior.
- Secular rulers appropriated powers previously held by Church authorities, such as appointing bishops, trying cases in secular rather than Church courts; German princes and other rulers renouncing the pope and joining the Protestant movement; Henry VIII making himself head of the Church of England.
- During the Renaissance, a number of trends contributed to religion's loss of priority among a segment of the population: educated elites' admiration for classical authors, forms, and works; their emphasis on secular subject matter, human-centered themes, and realistic representation of the human body; their critical approach to history that eventually spread to examination of religion-related writings.
- The discovery and translation of many more works by Plato and his followers than had been known in the Middle Ages; the emphasis in these works on thinking about the world in mathematical ways made a big impact on the scholarly world.
- From the sixteenth century, rulers and governments came to support science and scientists for the latter's pragmatic usefulness in many fields, such as navigation, metallurgy, and gunnery.
- Christianity's ability to give space within the faith's parameters for the pursuit of science, and the fact that its practitioners were faithful believers, helped give cultural legitimacy to the new science in the still devout seventeenth century.
 - Medieval scholastics, trying to reconcile Christianity with the philosophies of pagan Greece and Rome as well as with some Muslim writers, came to the conclusion that there was no inherently necessary conflict between science and faith.
 - The belief that God wrote two books, the Bible, and the "Book of Nature," by which his existence and intentions could be known. This idea was emphasized during the early modern period. Therefore, the study of nature had religious value, and the notion that humans should use their God-given faculties of observation and reason to read the "Book of Nature" accurately could be regarded as a religious duty.

Nevertheless, problems arose in specific instances where new ideas conflicted with the authority of Scripture, doctrine, or those ancient philosophers accepted as important for the faithful to study. Threats to these authorities were countered by religious institutions, though not always immediately, consistently, or successfully.

The widespread current of skepticism that developed in the sixteenth and seventeenth centuries encouraged questioning of authorities, beliefs, and previously held ideas. Contributing to the development of this skepticism were the shocks to established world-views, shaking of previously secure beliefs, disappointments with existing knowledge and authorities, and radical uncertainties created by the following:

- Early events that encouraged questioning traditional wisdom and institutions included the fourteenth-century Black Death, to which traditional society's response was wholly inadequate; the popes' loss of authority to kings and to church councils; and the scandal of two popes, one in Rome and one in Avignon, France, claiming legitimacy.
- In the sixteenth and seventeenth centuries, events in the heavens (sunspots, a supernova, comets) contradicted assumptions about the perfection and changelessness of the universe.
- The success of the Protestant Reformation led to a splintering of Christendom into multiple denominations within European Christianity, all claiming to be the one true way to salvation.
- Devastating religious wars that involved most of Europe raged during virtually the entire period between the mid-sixteenth and mid-seventeenth centuries.
- Information was brought back from voyages of discovery and colonizing ventures about peoples who had radically different ways of thinking, behaving, and organizing society.

It would be easy to claim, and with considerable justification, that the Scientific Revolution was a watershed event in history. Such a claim, however, does not do justice to the complexity of the phenomenon for which “scientific revolution” is at best a shorthand term. This chapter is intended to illustrate some of the complexities, to help students consider some of the questions raised, and to encourage them to raise some of their own.

THREE ESSENTIAL QUESTIONS

Humans and the Environment

In what ways might the new science of the seventeenth and eighteenth centuries have affected the physical and natural environment? In what ways does science affect the environment, for good or ill, today?

Humans and Other Humans

Do you or family members belong to any organizations having a major aim of sharing scholarly, technical, scientific, business, or artistic information? Why are organized networks for sharing information useful? Research the organization, purposes, and activities of the English Royal Society, which was founded in the seventeenth century.

Humans and Ideas

“Dare to know!” was the motto of the Enlightenment. Could this motto have served the Scientific Revolution as well? Why or why not?

KEY THEMES

This chapter addresses the following historical themes:

Key Theme 6: Science, Technology, and the Environment

Key Theme 7: Spiritual Life and Moral Codes

CORRELATIONS TO NATIONAL HISTORY STANDARDS

National Standards for World History

Era 6: The Emergence of the First Global Age 1450–1770. Standard 2D: The student understands how the Scientific Revolution contributed to transformations in European society. Standard 6: The student understands major global trends from 1450 to 1770. Assess how the acceleration of scientific and technological innovations in this era affected social, economic, and cultural life in various parts of the world.

INSTRUCTIONAL RESOURCES

Alavi, Karima, and Susan L. Douglass. *Emergence of Renaissance: Cultural Interactions between Europeans and Muslims*. Fountain Valley, CA: Institute on Religion and Civic Values, 1999. Segments II (Education and Scholarship) and III (Science and Technology) are relevant to this chapter.

Appleby, Joyce. *Shores of Knowledge: New World Discoveries and the Scientific Imagination*. New York: W. W. Norton, 2013.

Grant, Edward. *The Foundations of Modern Science in the Middle Ages: Their Religious, Institutional, and Intellectual Contexts*. New York: Cambridge University Press, 1996. Great source of scholarly information, but heavy-going; more detail than most would want.

Gribbin, John. *Science: A History*. London: Penguin Books, 2003. Reader-friendly survey starting with Copernicus and limited to Europe. Excellent on, but restricted to, the science and scientists, including fascinating biographical details.

Hellyer, Marcus, ed. *The Scientific Revolution: The Essential Readings*. Oxford, UK: Blackwell, 2003. For those wishing to delve more deeply and be exposed to some historiography. Chapters on individual topics, though short, touch on main issues.

Henry, John. *The Scientific Revolution and the Origins of Modern Science*. 3rd ed. New York: Palgrave Macmillan, 2008. Concise treatment mostly outlines scientific method; mechanical philosophy; relationship between magic and science, and religion and science.

Jacob, Margaret C. C. *The Scientific Revolution: A Brief History with Documents*. Boston: Bedford St. Martin's Press, 2009.

- Jardine, Lisa. *Ingenious Pursuits: Building the Scientific Revolution*. New York: Anchor Books, 1999. Starting in late seventeenth century, author explores motivations of scientists, their relations with each other, and nontechnical details on how exactly they did science. Frequent quotations from original sources and many illustrations.
- McClellan, James E., III, and Harold Dorn. *Science and Technology in World History: An Introduction*. Baltimore, MD: Johns Hopkins University Press, 1999. Winner of the World History Association best book award.
- Osler, Margaret J., ed. *Rethinking the Scientific Revolution*. New York: Cambridge University Press, 2000. First and last chapters give good accounts of the questioning and defense of the concept of a “scientific revolution,” how the dominance of the concept came about, and reasons for its continuing usefulness.
- Saliba, George. *Islamic Science and the Making of the European Renaissance*. Cambridge, MA: MIT Press, 2011.
- Shapin, Steven. *The Scientific Revolution*. Chicago: University of Chicago Press, 1996. Provocative, unusual, and readable, yet still within mainstream scholarship. Analyzes the concept of the Scientific Revolution for validity and examines in historical context.

PRELUDE TO THE LESSONS

What Is Science?

Introduction

You might want to share with students the information that:

- Before the nineteenth century, what we call science was referred to as natural philosophy, and was to varying degrees entangled with moral philosophy, theology, numerology, and magic.
- In the Middle Ages, the word “science” was used to mean “knowledge” in a generic sense.
- By the Renaissance, science was often to also mean “art” in describing a particular body of knowledge. These usages continued until the early nineteenth century. But also, by the end of the sixteenth century, “science,” requiring theoretical knowledge was often differentiated from “art,” a skill that required only practice.
- In the early eighteenth century, one author stated that the “the word ‘science’ is usually applied to a whole body of regular or methodical observations or propositions” about any subject.
- By 1800, though science mostly meant just the theoretical and methodical study of nature, it had for a growing number become associated with specific ways of thought and methods that we would now consider scientific.
- In the mid-nineteenth century, the word “scientist” was first used to replace the earlier term “natural philosopher;” and “science” referred primarily to the, by then, well-differentiated fields of physics, chemistry, and biology.
- The term “scientific revolution” was first given currency in 1939. Historians continue to disagree about whether the changes in science centering on the seventeenth century can appropriately be called a “revolution.”

Activities

1. Ask students to brainstorm and discuss in groups or with a neighbor the following ideas. Share/summarize results with the whole class:
 - a. If you had to give as good an explanation as you can in about five minutes of what science is to an interested fourth-grader, what would you say? (Ask each student to make a note of the main points of their own explanation. They will need to refer to it for Activity 12 in Lesson 3.)

- b. What kinds of things would it make you think of if you heard someone say “Oh, but that isn’t science,” “What an unscientific view. . .,” “Science has established. . .,” or “That was the scientific way to approach it”? Do the reactions in each case have anything in common? If so, what? If not, how would you account for the wide variation?
 - c. What characteristics distinguish science from what is not science? What distinguishes the scientific from what is not scientific? It may help students to suggest that they consider, among other things,
 - subject matter
 - theories and hypotheses
 - descriptions
 - methods of observation and investigation
2. Ask students in groups to formulate a hypothesis of what the three to five most important defining characteristics of science are, and to explain why they consider these to be the most important. Consider what kind(s) of information would
 - strengthen their hypothesis
 - weaken their hypothesis
 - disprove their hypothesis
 - suggest their hypothesis needed revision

Have the groups share their hypotheses with the class, and encourage students to reach consensus on a single hypothesis, which should be recorded by everyone. It will be used again in Lessons One and Two.

3. Textbooks, scholars, and others routinely refer to a “scientific revolution” centered in Europe in the seventeenth century. Not all scholars, however, agree on whether use of the term “scientific revolution” is appropriate. What would have to have happened to make using the term “revolution” appropriate? What questions would you ask, the answers to which would help you decide more reliably whether the term is appropriate for what happened to science in seventeenth century Europe?
4. What historical conditions or events do you think would promote or hinder the development and spread of science? Scientific change? How? (It may help students to suggest that they consider political, social, economic, religious, technological, intellectual conditions and/or events.)

LESSON 1

Was There Science before the Scientific Revolution?

Introduction

Note: Built into this chapter are various opportunities for students to engage in some of the activities characteristic of what scientists did during the lead-up to and development of early modern science: reasoning; identification and evaluation of evidence; formulation, testing and refining of hypotheses; classification; using data to make generalizations and assess reliability; grappling with issues of truth and certainty, and maintaining a skeptical stance. Activity 11 in Lesson 3 gauges students' recognition of scientific characteristics in their work during the chapter. Whether to share this feature of the chapter with students right at the start and how far to take advantage of its possibilities will depend on individual circumstances.

The following suggested activities/discussions are based on students having read the documents in Student Handout 5.1.1. Before reading the handout, students should know the following information:

- The documents in Student Handout 5.1.1 span a period from the tenth to the fourteenth centuries. They represent authors from different backgrounds in the Islamic and European worlds of the time, whose knowledge and mindset also varied by time and place.
- However, these scholars shared the bases for their knowledge of the universe: reliance on their religions' revealed truths, and on the works of Greek, Indian, Persian, and other thinkers, most of whom lived before both the Prophet Muhammad and Jesus Christ. Dealing with the resulting contradictions between religious and classical authorities on the one hand, and truths based on revelation and reason on the other, created ongoing problems for Muslim and Christian scholars alike.
- The following beliefs about the structure and behavior of the universe drawn from Greek and Arabic sources were shared in their broad outlines throughout Europe and the Muslim world. What neither shared was our own clear differentiation of "science" from philosophy, religious ideas, logic, and common sense.
 - A motionless Earth was the center of the universe. It was surrounded by water, beyond which was an envelope of air, in turn ringed by fire. This realm was imperfect and changeable. In it, the four elements of earth, water, air, and fire existed everywhere as varied mixtures, with heavy earth and water constantly striving downward and light air and fire striving to rise. The whole was enclosed, and air as well as fire stopped from escaping upward, by a set of nested, concentric, transparent heavenly spheres of crystal, the edge of each touching the edge of the next. (Imagine thick and regularly spherical skins a bit like those of an onion, but more transparent, around a central core.) The spheres moved around the earth, sliding against each

other in a regular circular motion carrying with them the heavenly bodies, each embedded in one of them: the moon, five planets, the sun (between Mars and Venus), and the fixed stars. Beyond these was the habitation of God and of saved souls.

- All the heavenly region was perfect, unchanging, and utterly different from the terrestrial region below the moon, where any movement was in a straight line, unlike the circular heavenly movements. But everywhere in the universe, in heaven as well as on Earth, rest was characteristic of all bodies and objects. Unless moved by something, and unless the mover was in constant contact with the thing moved, no movement was possible.
- The explanation for movement of the spheres carrying heavenly bodies usually involved spiritual beings (“intelligences” or angels, the two words being used interchangeably) constantly turning each sphere. A ninth outer sphere, the Unmoved or Prime Mover, related to the other heavenly spheres the way the soul relates to the body: It provided the motive power transmitted to the rest of the spheres. On Earth, the movement of falling bodies, for instance, was accounted for by the element of earth, which sought its natural home downward because of its heaviness. Flames, on the other hand, were light and rose upward.
- The physical universe was hierarchical, as was the human. Lowest on the scale was the element earth. In ascending order, with less of earth and more of the lighter elements in their makeup, were beings with vegetative, animal, and rational (human) souls. From the moon’s sphere upward, a hierarchy of angels, with spiritual souls, moved the heavenly spheres, with God above all. Each sphere was ruled the ones below it.
- Humans mirrored the physical universe, which deeply affected human affairs. Movements of heavenly bodies influenced what humans did and what happened to them. Parts of the body were “ruled” by planets and signs of the zodiac. Astrology, barely if at all distinguished from astronomy, was therefore enormously important in decision making by rulers and commoners alike.

Activities

Ask students to respond to the following:

1. Describe the kinds of support for the statements made, and the kinds of evidence given, by the authors of the documents in Student Handout 5.1.1.
2. Identify the distinctive characteristics of medieval science, based on your reading of the documents. What would you consider its three to five most distinctive characteristics? Why? Support your argument with evidence.
3. (This activity lends itself well to small group work.) Assume that you have just been chosen to serve on a panel charged with naming someone to appear on the cover of *Time* magazine as “The Outstanding Medieval Scientist.” If your only choices were the people represented by the documents in Student Handout 5.1.1, and all you had to go on to

judge the scientific quality of their work was the document in the handout, whom would you nominate? Justify your nomination to *Time's* editors by explaining your reasons for your choice. (Students may be reminded of Introductory Activities 1C, when they discussed what features distinguish science from nonscience, and the scientific from what is not scientific.)

4. Which three documents would you recommend to be included in a chapter on medieval science in a textbook? Justify your selection with reference to the documents and to what you know about the Middle Ages.
5. What did you find most surprising about the documents and the information in them? Explain.
6. What are the two to three most important things you have learned about medieval science by reading these eight documents? How did you decide which things were the most important?
7. Which of the three to five most important defining characteristics of science set out in the hypotheses created during the Introductory Activities can you identify in the documents? In which documents?
8. Do you need to change your hypothesis about what the important defining characteristics of science are? Why or why not? If yes, what would you change and why?
9. **This activity may serve as an assessment.** Drawing on the information in the documents, list all the evidence you can in favor of and opposed to the claim that “there was no such thing as science during the Middle Ages.” Do you judge the claim to be accurate? Why or why not?

Extension

1. Review information from your textbook and/or notes about the history of Afroeurasia between about 900 and 1400.
 - What political, economic, social, and religious conditions are likely to have contributed to the characteristics of Islamic/European science during that period shown in this lesson? How?
 - For what information about the Middle Ages in your textbook can you find confirmation in the documents in Student Handout 5.1.1?
2. Research information about the authors of the documents in this lesson.
 - Where were they from? What was their occupation? In what fields of knowledge did they work?
 - In what ways were they similar, in what ways different, from people working in science today?

Was There Science Before the Scientific Revolution?

DOCUMENT A

“The Shape of the Seas” from Al-Mas’udi’s tenth century work on geography.

The philosophers differ about the shape of the seas. Most of the ancients, such as the mathematicians of the Hindus and the Greeks, believe that they are round. They provide many arguments as proofs of their statement. [For instance,] if you sail away on the sea, land and mountains disappear gradually, until you lose sight of even the highest mountain peaks. On the other hand, as you near the coast, you first see the mountains. Only when you come nearer do you see the trees and plains.

But those who strictly follow the revelation [the Qur’an], reject this hypothesis.

Source: Qtd. in Seyyed Hossein Nasr, *Science and Civilization in Islam* (Cambridge, MA: Harvard University Press, 1968), 107. Language simplified by Anne Chapman.

DOCUMENT B

“Lead into Gold?” from ibn Sina’s (Avicenna’s) eleventh century *Book of the Healing*.

As to the claims of the alchemists [that they can turn one metal into another, and particularly into silver or gold], it must be clearly understood that it is not in their power to bring about any true change of species. [Ibn Sina considered that each metal was a distinct species of the genus “metals.” Just as it was impossible to turn a horse into a dog, so it was impossible to turn one metal into another.]

They can, however, produce excellent imitations, dyeing the red [metal] white so that it closely resembles silver, or dyeing it yellow so it closely resembles gold ... Yet in these [dyed metals] the essential nature remains unchanged; they are merely so dominated by induced qualities that errors may be made concerning them.

I do not deny that such a degree of accuracy may be reached as to deceive even the shrewdest, but [as for] the possibility of eliminating or imparting the [difference in species], I regard it as impossible ... Those properties which are perceived by the sense are probably not the differences which separate the metals into species, but rather accidents or consequences, the [actual] differences being unknown. And if a thing is unknown, how is it possible for anyone to endeavor to produce it or to destroy it?

Source: E. J. Holmyard and D. C. Mandeville, eds. and trans., *Avicennae “De congelatione et conglutinatione lapidum” Being Sections of the “Kitab al-Shifa”* (Paris: Librairie Orientaliste Paul Geuthner, 1927), 17–32. Qtd. in Edward Grant, ed. *A Source Book in Medieval Science* (Cambridge, MA: Harvard University Press, 1974), 572.



DOCUMENT C

“Answers to Questions About Nature,” from Adelard of Bath’s twelfth century natural history.

I have learnt one thing from my Arab masters, with reason as guide, but you another: you follow the halter of authority. As brute animals are led by a halter, but do not know where or why they are led, so the authority of written words leads not a few of you into danger, since you are held captive by brutish blind faith. These days listeners do not demand arguments based on judgment. They do not understand that reason has been given to each single individual in order to decide between true and false with reason as the prime judge. However, I do not unconditionally state that authority should be rejected. Rather, reason should be sought first, and an authority, if one is at hand, be added later. Authority alone cannot win credibility for a philosopher . . . If you wish to hear anything more from me, give and receive reason . . .

Question: Why is seawater bitter and salty?

Answer: The heat of the sun and the planets causes the saltiness. Since the true Ocean flows through the hot central zone of the earth, and the planets move through the same zone, so because of the great heat of the stars [Adelard uses “planet” and “star” interchangeably] the sea itself becomes hot. As a result it becomes salty. This is confirmed by the fact that on seashores near that Ocean seawater dried on the rocks becomes salt without any artifice. To get salt from seas further away, distant from heat, the seawater must be heated again by boiling. But even some fresh water can be turned into salt if it is boiled down. Moreover, in summer all seawater is saltier than in the winter, which anyone can experience for themselves . . .

Question: Are stars animate or inanimate?

Answer: Whoever thinks they are inanimate is himself without a soul in my opinion. If this [earthly] region which is churned about with hail, bristling with clouds, and murky with darkness can sustain reason and judgment, how much more is the ethereal plane [the Heavens, which is] purged of all uncleanness, obedient to mind and reason?

Again, if of all created things nothing can be better than the mind, should the place [the perfect Heavens] which is most suitable for it be deprived of it? As for stars’ form, it is clear that the form of the stars, which is full and round [the circle being considered the most perfect shape] is of all forms the most appropriate to the soul . . .

Nothing, then, among creatures is more rational than [stars].

Source: Charles Burnett, ed. and trans., *Adelard of Bath: Conversations With His Nephew* (New York: Cambridge University Press, 1998), 103–4, 185–6, 219–22. Language simplified by Anne Chapman.

DOCUMENT D

“Accuracy of Measurement,” from Abu’l-Fath al-Khazini’s twelfth century book on mechanics.

[The main principle al-Khazini used in determining specific gravities was that a given body will float in a liquid to a depth proportional to the specific gravity of the liquid, sinking further in a light than a dense one. Great care was taken to ensure the maximum possible accuracy in the design, manufacture, and calibration of his measuring instrument, based on that of the Greek mathematician and scholar of mechanics, Pappus.]

Substances	al-Khazini’s 1,121 values for their specific gravity	Twentieth century values
Water	1.00	1.00
Sea water	1.04	1.029–1.04
Olive oil	0.92	0.918–0.919
Cow’s milk	1.11	1.02–1.04
Mercury	13.56	13.56
Brass	8.57	8.45–8.60
Tin	7.32	7.29
Iron	7.74	7.60–7.79

Source: Qtd. in Donald R Hill, *Islamic Science and Engineering* (Edinburgh, Scotland: Edinburgh University Press, 1993), 66.

DOCUMENT E

“The Ecstatic Camel” from al-Mustaufi al-Qazwini’s thirteenth century encyclopedia.

The Eternal Wisdom designed animals to be of use to man, the perfected of perfections. Since He created them as tools for man, God (may He be praised and exalted!) directed man so he got the upper hand of them ...

Of domestic animals, I shall list ten kinds in alphabetical order ...

The camel is a large-bodied, strangely made animal that eats little, bears burdens, and is obedient to commands. It is liable to ecstasy and gladness. Shaikh Sa’di [Persian poet and traveler] says: “The camel becomes ecstatic and dances at the Arab’s song; if you are not joyful, you are a cross-grained beast.”

All the sects are allowed to eat its flesh, which is warm and dry. The camel is intelligent, so when it is sick it eats oak-leaves and gets better, and when a poisonous snake bites it, it eats a crab and the poison is neutralized.

Its liver gives clear sight and prevents cataracts. Snakes flee from wherever its fat is put down. Tying its hair around the left thigh halts diabetes.

The Arabs call a male camel *jamal*, the female *naqat*, the young *bakr*, the old nab, a baggage carrier *hamulet*, a milk camel *laquh*, a 3-year old *hiqq*, a 4-year old *jadha* ...

Source: Qtd. in Seyyed Hossein Nasr, *Science and Civilization in Islam* (Cambridge, MA: Harvard University Press, 1968), 119–20. Language simplified by Anne Chapman.



DOCUMENT F

“Description of the Magnet,” from Bartholomew the Englishman’s thirteenth century account.

The magnet is an Indian stone that attracts iron, as Isidore [Spanish bishop and encyclopedist] says. It is also believed to attract clear glass. As Augustine [African bishop, theologian, and philosopher] says, its force is so great that iron will follow its movement even through a shield of gold or bronze. Due to this power of a magnet, a statue made of iron was seen to hang in the air in a temple.

There is another species of magnet in Ethiopia which repels iron and flees from itself. Also, the magnet sometimes attracts iron from one angle, and repels it from another. Isidore adds that this kind of stone restores husbands to wives and increases elegance and charm in speech.

There are mountains made of such stones that attract and dissolve ships made of iron. Its dust is especially valuable for wounds and against dropsy, spleen, and fox mange, as Avicenna [ibn Sina, Muslim physician, scientist and philosopher] says.

Source: Anglici Bartholomaei, *De genuinis rerum coelestium terrestrium et inferarum proprietatibus libri XVIII*, Edward Grant, trans. (Frankfurt: Minerva, 1964). Qtd. in Edward Grant, ed., *A Source Book In Medieval Science* (Cambridge, MA: Harvard University Press, 1974), 367–8.

Language adapted by Anne Chapman.

DOCUMENT G

“The Nature of Comets” from Albertus Magnus’ thirteenth century treatise.

We will give the correct view about comets, and confirm it by the authority of many physicists. I say, then, that a comet is nothing else than a coarse earthly vapor or fumes; coarse, because if it were thin it would quickly evaporate and dissolve. It gradually rises from the bottom of the layer of air to the top, where it touches the curved inner surface of the sphere of fire. There it is thinned out by the heat of the fire and inflamed. Its middle always stays dense, but what is thinned out at the sides often seems long, has a thin flame, and is called the “tail.”

The famous philosophers Avicenna [ibn Sina, Muslim physician, scientist and philosopher] and Algazel [al-Ghazali, Arab theologian and philosopher] give evidence that this is so. Ptolemy [Greek astronomer and geographer] and Albumasar [Abu Ma’shar, Persian astronomer and mathematician] also imply this.

Reason, too, supports this opinion. Since it is evident that flame is nothing but kindled fumes; and a comet is a sort of flame, as is apparent to the sight, therefore, a comet is kindled fumes.

Furthermore, if a comet is always produced by one of the five planets as some have argued, then it should never be seen outside the path of the planets. Yet this is false, since Aristotle [Greek philosopher and scientist] says we see comets in every part of the sky. Moreover, I with many others in Saxony in the year 1240 saw a comet close to the North Pole. It projected its rays between east and south, and it is evident that there was not the path of any planet.

Source: Lynn Thorndike, ed. *Latin Treatises On Comets Between 1238 and 1368 AD* (Chicago: University of Chicago Press, 1950), 499–508. Qtd. in Edward Grant, ed. *A Source Book In Medieval Science* (Cambridge, MA: Harvard University Press, 1974), 543–4.



DOCUMENT H

A New Theory of Motion,” from Jean Buridan’s fourteenth century “Questions On Aristotle.”

The question is what moves a thing that has been thrown after it has left the hand of the thrower. Is it moved by air, or if not, by what is it moved?

Aristotle has not solved this problem well. He suggests that the thing thrown leaves the place where it was quickly, and would leave emptiness behind. But nature, which does not allow a vacuum, quickly sends air in behind to fill up emptiness. The air that has moved in fast this way, comes up against the end of the thing thrown, and pushes it along further. This is repeated continually. But it seems to me this explanation is without value because of many experiences that contradict it.

For instance, a lance having a pointed back end as sharp as the front would be moved, after having been thrown, just as fast as it would be with a blunt back end. But surely the air following would push a pointed end less well, because the air would be easily divided by the sharpness.

Again, a ship pulled along fast in the river even against the current cannot be stopped quickly, but rather continues to move for a long time after the pulling stops. And yet a sailor on deck does not feel any air from behind pushing him. On the contrary, he feels the air from the front resisting him.

Instead, we can and should say that the mover in moving anything impresses in that thing a certain impetus or motive force, which acts in the direction that the mover was moving the thing. The faster the mover moves the thing, the stronger the impetus he impresses in it. This theory explains why the motion of a heavy body downwards is continually accelerated. At the beginning, only gravity was moving it; but moving impressed in it an impetus, which, added to the gravity, made the movement faster, in turn making the impetus stronger and so on.

Also, the Bible does not state that each heavenly body is moved by an intelligence [or angel—the two words were used interchangeably]. So it could be said that it does not appear necessary to hypothesize intelligences of this kind to account for the movement of planets and fixed stars, as many do. It could instead be said that God, when he created the world, moved each heavenly body as He pleased, and in doing so impressed in them impetuses that moved them without him, or anything else, having to move them any longer. But this I do not say assertively, only tentatively, so that I might seek from the theological masters that they teach me in these matters.

Source: Qtd. in Marshall Clagett, *The Science of Mechanics In the Middle Ages* (Madison: University of Wisconsin Press, 1957), 532–6. Language adapted by Anne Chapman.

LESSON 2

Science Comes of Age: Was It a Revolution?

Introduction

The following suggested activities and discussions are all based on students having read the documents in Student Handout 5.2.1 and 5.1.1.

Before reading the Handout, students should know that the documents span a period from the sixteenth to the eighteenth centuries and that they represent authors from different European backgrounds whose knowledge and attitudes also varied by time and place.

The shared knowledge of the Middle Ages continued on in those centuries, though with gradual changes. It was buttressed by religion, which resisted any change that ran afoul of holy scripture or doctrines. It was also supported by the slow rate of change in the universities.

Activities

Ask students to respond to the following:

1. Describe the kinds of evidence given by the authors of the documents, and/or how they support the statements they make.
2. Pick the three documents in Student Handout 5.1.1 that you consider most unlike any of the documents in Student Handout 5.2.1. Compare them to the three documents in Student Handout 5.2.1 that come closest to resembling them. Identify both similarities and differences. Then pick the three documents in Student Handout 5.2.1 that you consider most unlike any of the documents in Student Handout 5.1.1. Compare them to the three documents in Student Handout 5.1.1 that come closest to resembling them. Identify both differences and similarities.
 - How important were the similarities? The differences? Explain on what basis you judged importance.
 - Based on your comparisons, what generalizations can you make about similarities and differences between medieval and early modern science? On what grounds could the generalizations you make be questioned? Defended? What questions could you ask whose answers might help improve the reliability of your generalizations?
 - What conclusions can you draw from this exercise about science during the period covered by Student Handouts 5.1.1 and 5.2.1? Explain how you arrived at your conclusions.

3. Identify the distinctive characteristics of sixteenth to eighteenth century science, based on your reading of the documents. What would you consider the three to five most distinctive characteristics of science during this period? Why do you consider these the most distinctive? Support your argument with evidence.
4. On what basis would you question, on what basis defend, the reliability of the selection of documents in Student Handout 5.2.1 for making generalizations about what early modern science was really like?
5. What questions would you ask whose answers would increase your confidence that the documents in Student Handout 5.2.1 can be reliably used as the basis for generalizations about what early modern science was really like? If you could go beyond the documents supplied in Student Handout 5.2.1, what could you do to increase the reliability of any generalizations you made about what early modern science was really like? What difference would it make if you tried to do this as a student, or as a scientist?
6. (This activity is best done in groups.) Before they begin, students may be reminded of Introductory Activity 1C, when they discussed what characteristics distinguish science from what is not science, and the scientific from what is not scientific. Assume that you are members of a panel charged with nominating a winner and a runner up for the honor of being named the “Scientist Whose Work Most Closely Represents the Ideals of Modern Science.” Your only candidates are the authors of the documents in Student Handout 5.2.1. And all you know about them is what is in those documents. Which two or three of them would you eliminate first, and whom would you nominate as winner and as runner up? Justify your choices.

If you could nominate anyone from the 1500–1800 period, would you stay with your original nominee for winner, or choose someone else? If you would choose someone else, who would that be? In what ways is your alternative selection more representative of the ideals of modern science than your original one? (Students could be asked to do research to find out more about their original choice and their suggested alternative, so they would be better able to answer the last question.)

7. Based on the documents in Student Handouts 5.1.1 and 5.2.1, and on what you know about modern science, what evidence could you give for, and against, the claim that some basic features of later scientific thinking were already present in the Middle Ages?
8. What prescientific or nonscientific ways of thought that carried over into the sixteenth to eighteenth centuries can you identify in the documents in Student Handout 5.2.1? Which documents? Explain why you consider them prescientific or nonscientific.
9. Drawing on information in Lessons One and Two, identify changes and continuities in science during the tenth through eighteenth centuries (and/or during the sixteenth through eighteenth centuries). Were the changes or the continuities more important? Explain.

10. You have been named as a consultant to a publisher and asked to work on the chapter about the Scientific Revolution in the textbook they are about to bring out. Which five documents, drawn from either Lesson 1 or Lesson 2, would you recommend should be included in a chapter on the Scientific Revolution in their textbook? Justify your selection to the editors, referring to the documents and to what you know about the historical periods during which the documents were written.
11. **This activity may serve as an assessment.** It could be restricted to only Student Handout 5.2.1 and to change between 1500 and 1800. Based on your reading of the documents in Student Handouts 5.1.1 and 5.2.1, explain the ways in which science changed between the Middle Ages and the eighteenth century. Support your arguments with evidence.
12. **This activity may serve as assessment.** Drawing on the information in the documents, list all the evidence you can in favor of, and opposed to, the claim that “there was no such thing as a Scientific Revolution.” Do you judge the claim to be accurate? Why or why not?
13. **This activity could serve as assessment.** You have been invited to give a talk in a history class to students about two years younger than yourself. Your topic is the Scientific Revolution. Basing your talk on the information in Lessons One and Two:
 - What would be the half dozen or so most important points you feel would help your audience understand what is meant by the “scientific revolution”? What additional points might you want to make?
 - What is the indispensable information you would have to give them so they will understand how the Scientific Revolution came to be? What additional information might you want to add?
 - Explain how you decided on what was “most important” and what was “indispensable.”
14. Which of the three to five most important defining characteristics of science set out in the hypotheses created during the Introductory Activities can you identify in the documents? In which documents?
15. Do you need to change your hypothesis about what the significant defining characteristics of science are? Why or why not? If yes, what would you change and why?

Extension

According to Leonardo da Vinci (Student Handout 5.2.1), “Where there are quarrels there true science is not; because truth can only end one way—wherever it is known, controversy is silenced for all time, and should controversy nevertheless arise again, then our conclusions must have been uncertain and confused.”

This quote suggests that da Vinci considered that lack of disagreement could be accepted as a reliable test of certain truth. Do you share his view? Why or why not? Judging by the other documents in Student Handout 5.2.1, how many of their authors shared da Vinci’s view? What other tests of truth can you identify in the other documents of the Student Handout 5.2.1? Which of them would you yourself accept as most reliable? Why? What other reliable tests of truth could you suggest?

Science Comes of Age: Was It a Revolution?

DOCUMENT I

“Minds and Hands Both Needed,” from Leonardo da Vinci’s 1510s manuscript on painting.

They say knowledge born of experience is mechanical, but that knowledge born and consummated in the mind is scientific . . . But to me it seems that all sciences are vain and full of errors that are not born of experience, mother of all certainty, and that are not tested by experience, that is to say that do not . . . pass through any of the five senses.

For if we are doubtful about the certainty of things that pass through the senses, how much more should we question the many things against which these senses rebel, such as the nature of God and the soul and the like, about which there are endless disputes and controversies . . . Where there are quarrels there true science is not; because truth can only end one way—wherever it is known, controversy is silenced for all time, and should controversy nevertheless arise again, then our conclusions must have been uncertain and confused . . .

Experience . . . always proceeds from accurately determined first principles, step by step in true sequences . . . as can be seen in the elements of mathematics founded on numbers and measures called arithmetic and geometry, which deal with discontinuous and continuous quantities with absolute truth. Here no one argues as to whether twice three is more or less than six . . .

Astronomy and the other sciences also entail manual operations although they have their beginning in the mind, like painting, which arises in the mind of the contemplator but cannot be accomplished without manual operation. The scientific and true principles of painting first determine what is . . . darkness, light, color, body, figure, position, distance, nearness, motion, and rest. These are understood by the mind alone and entail no manual operation; and they constitute the science of painting which remains in the mind . . . and from it is then born the actual creation [which needs hands].

Source: Qtd. in Elizabeth G. Holt, ed., *A Documentary History of Art*, vol. 1 (Garden City, NY: Doubleday Anchor, 1957), 275–7.

DOCUMENT J

“The Earth Moves,” from Copernicus’s 1543 book *On the Revolutions of Heavenly Orbs*.

When I had thought for a long time about the uncertainty of the traditional mathematical doctrine concerning the paths of the heavenly bodies, it seemed to me very regrettable that no more correct theory had yet been advanced by philosophers for the movements in that universe which the best and most perfect Architect had made for us . . .

Therefore I took the pains to read through the writings of all the philosophers that I could get together in order to find out if some one of them had not stated the opinion that the movements of the heavenly bodies might be other than the professional mathematicians had claimed. And I did find . . . in Cicero [Roman lawyer, politician and philosopher]



that Nicetas [Byzantine bishop and writer on religious topics] had thought that the earth moves. I read in Plutarch [Greek biographer and historian] that some others also had been of this opinion . . .

When I had received this suggestion I began myself also to meditate upon a motion of the earth. And although this theory might seem nonsensical, yet because I knew that others before me were allowed the liberty to suppose all sorts of circles in order to explain the phenomena in the heavens, so I too would be permitted to try whether building on the theory of the earth's motion I might find more satisfactory explanations for the movements of the heavenly bodies.

After I had then assumed the motions which I assign to the earth in the following work, I found, after careful investigation extending through years, that if the movements of the other planets were referred to the motion of the earth in its orbit and reckoned according to the revolution of each star, not only could their observed phenomena be logically explained, but also the succession of the stars, and their size, and all their orbits, and the heavens themselves would present such a harmonious order that no single part could be changed without disarranging the others and the whole universe. In accordance with this theory I have drawn up the plan of my work . . .

The first thing for us to realize is that the universe is spherical. This is so either because, of all forms, the sphere is most perfect, requiring no joins; or because it is the most capacious, and so best fitted to enclose and preserve all things; or because all things strive to be bounded thus, as we observe in drops of water and other liquids. There can be no doubt, then, about the rightness of assigning this shape to the heavenly bodies.

Source: Qtd. in H. Webster, *Historical Selections* (Boston: D. C. Heath, 1929), 885–6. Qtd. in Dennis Richard Danielson, *The Book of the Cosmos* (Cambridge, MA: Perseus, 2000), 108. Language simplified by Anne Chapman.

DOCUMENT K

“About Magnets,” from William Gilbert’s 1600 book *On the Great Magnet the Earth*.

For the discovery of secret things and the investigation of hidden causes, sure experiments and demonstrated arguments are preferable to probable conjectures and the opinions of philosophical speculators. Aiming for the better understanding of that great loadstone [magnet] the earth, and of the extraordinary forces of this globe, we have decided to begin first with magnetic bodies and the parts of the earth that we may handle and perceive with the senses, and then to proceed with magnetic experiments . . . Every day, in our experiments, novel, unheard-of properties came to light . . .

Many things in our reasonings and our hypotheses will perhaps seem hard to accept, since they differ from the general opinion. But I have no doubt that hereafter they will win authoritativeness from the demonstrations themselves . . .

We do not at all quote the ancients and the Greeks as our supporters. Our doctrine of the loadstone contradicts most of the principles and theories of the Greeks . . . We have had no hesitation in setting forth, in hypotheses that are provable, the things that we have through a long experience discovered.

Wood floating on water never turns by its own forces towards the poles of the world save by chance. Neither do threads of gold, silver, copper, zinc, lead, nor glass, when passed through cork and floated, ever have sure direction. When rubbed with a loadstone they show neither poles nor points of variation; for bodies that do not of their own accord turn towards the poles and are not obedient to the earth are in no way governed by the loadstone's touch. The energy of the loadstone cannot enter them, nor, if it could enter them, would that energy have any effect. This because the [magnetic] property of the earth is debased in them because it is mixed with a variety of other humors . . . The properties of iron, on the other hand, are awakened by the approach of a loadstone, and put forth their strength . . .

Here we must express wonder at the false opinion of Baptista Porta, [author of *Natural Magic*, 1558, which includes discussions of magnets, experiments, cookery, alchemy, and demonology] who claims that iron rubbed with a diamond turns to the north. Now this is contrary to our magnetic rules; and therefore we made the experiment ourselves with seventy-five diamonds in the presence of many witnesses, using a number of iron bars and pieces of wire, manipulating them with the greatest care while they floated in water, supported by corks; yet never did I see the effect mentioned by Porta . . .

Source: William Gilbert, *On the Loadstone and Magnetic Bodies, and On the Great Magnet the Earth*. Trans. P. Fleury Mottelay (New York: John Wiley and Sons, 1893), xlvii–li, 217–8.
Language simplified by Anne Chapman.

DOCUMENT L

“Acceptance of Proven Truth,” from Cardinal Bellarmine’s 1616 letter to a defender of Copernicus’s theory.

If there were a real proof that the Sun is in the center of the universe, that the Earth is in the third heaven [the third from the center of the eight or nine crystalline spheres or “heavens” into which the planets and stars were thought to be fixed] and that the Sun does not go round the Earth but the Earth round the Sun, then we should have to proceed with great circumspection [care] in explaining passages of Scripture which appear to teach the contrary, and rather admit that we did not understand them than declare an opinion to be false which is proved to be true.

But, as for myself, I shall not believe that there are such proofs until they are shown to me. Nor is it proof that, if the Sun [was] supported at the center of the universe and the Earth in the third heaven, everything works out the same as if it were the other way around. In case of doubt we ought not to abandon the interpretation of the sacred text [Bible] as given by the holy Fathers.

Source: Qtd. in Peter Dear, ed., *The Scientific Enterprise in Early Modern Europe: Readings from Isis* (Chicago: University of Chicago Press, 1997), 147–8.



DOCUMENT M

“Insect Experiments,” from Francesco Redi’s 1668 book *Generation of Insects*.

It is not only the popular belief, but it is also stated authoritatively by both ancients and moderns that the rotting of a dead body, or any sort of decayed matter, can give being to worms just by itself. Desiring to trace the truth of the case, I made the following experiment. I ordered three snakes to be killed . . . [and] placed them in an open box to decay. Not long afterwards I saw that they were covered with worms . . . intent on devouring the meat . . . When the meat was all consumed, the worms eagerly sought an exit, but I had closed every opening. Nineteen days later, some of the worms ceased all movements . . . and appeared to shrink and gradually assume a shape like an egg . . . I placed these . . . separately in glass vessels, well covered with paper, and at the end of eight days . . . from each came forth a fly . . .

I continued similar experiments with the raw and cooked flesh of the ox, deer, buffalo, lion, tiger, dog, lamb, kid, rabbit; and sometimes with the flesh of ducks, geese, hens, swallows, etc. Finally I experimented with different kinds of fish . . . In every case, flies were hatched. Almost always, I saw that the decaying flesh and the cracks in the boxes where it lay were covered not alone with worms, but with the eggs from which, as I have said, the worms were hatched . . .

Having considered these things, I began to believe that all worms originated from the droppings of flies, and not from the decay of the meat. I was still more confirmed in this belief by having found that, before the meat grew wormy, flies had hovered over it, of the same kind that later bred in it.

Belief would be vain without the confirmation of experiment.

Therefore, I put a snake, some fish, some eels . . . and a slice of veal in four large, wide-mouthed flasks. Having well closed and sealed them, I then filled the same number of flasks in the same way, only leaving these open. It was not long before the meat and the fish, in these second vessels, became wormy and flies were seen entering and leaving at will.

Outside the closed flasks, on the paper cover, there was now and then a deposit, or a maggot that eagerly sought some crack through which to enter and feed. But in them I did not see a worm. Meanwhile, the different things inside the flasks had become putrid and stinking . . .

I thought I had proved that the flesh of dead animals could not generate worms unless the eggs of live ones were deposited therein.

Source: Francesco Redi, *Experiments on the Generation of Insects*. Trans. M. Bigelow (Chicago: Open Court, 1909), 22–36. Text slightly rephrased for clarity by Anne Chapman.

DOCUMENT N

“I Believe in Witchcraft,” from Addison’s 1711 essay in the periodical *The Spectator*.

There are some opinions in which a man should stand neuter, without engaging his assent to one side or the other. Such a hovering faith as this, which refuses to settle

upon any destination, is absolutely necessary in a mind that is careful to avoid errors and prepossessions. What the arguments press equally on both sides on matters that are indifferent to us, the safest method is to give ourselves up to neither . . . I believe in general that there is, and has been such a thing as witchcraft; but at the same time can give no credit to any particular instance of it.

Source: Qtd. in Phyllis J. Guskin, “The Context of Witchcraft,” *Eighteenth Century Studies* 15 (1981): 58.

DOCUMENT O

“Technology Adopts Science,” from Leupold’s 1725 treatise on improving machinery.

His Majesty the King of Poland and His Highness the elector of Saxony have been graciously pleased to command me to supervise and to improve the organization of the engineering and machines of all the mines . . . For [this], the following preparation is necessary:

1. A clear list must be made of all devices and machines which are in the mines or foundries . . . their parts and component pieces must be drawn accurately to scale . . . and calculated by Theory.
2. The power of each engine must be calculated as accurately as possible and . . . what [it] is now doing and what according to principles or theory it should be doing . . .
3. At the same time, all the mechanical and physical foundations and causes of both performance and non-performance should be explained clearly by experiments and sketches, together with the calculations, both geometrical and mechanical . . .
5. I have invented devices for measuring . . . water-power, so that by means of an accurate clock with a second-hand . . . and of certain tables and rules, anyone should be able to calculate that in one minute or in one second, so much water will flow through . . .
8. I will produce divers machines, inventing them entirely anew, in order to investigate the power of falling water [which is] . . . one of the most important items; for the whole question of improving machinery depends on (1) the right application of force, (2) the elimination of friction . . .
9. I will give faithful guidance and teaching by experiments and on the engines at every mining- town or district where I find mining-crafts and persons who have need of the principles governing mechanics and their engines, and who are desirous of knowledge.

Source: Qtd. in Friedrich Klemm, *A History of Western Technology*, trans. D. W. Singer (New York: Charles Scribner’s Sons, 1959), 238–9.



DOCUMENT P

“History as Science,” from David Hume’s 1748 book *Concerning Human Understanding*.

It is universally acknowledged that there is great uniformity among the actions of men, in all nations and ages, and that human nature remains still the same . . . The same motives always produce the same actions. The same events follow from the same causes . . .

Mankind are so much the same in all times and places that history informs us of nothing new or strange . . . Its chief use is only to discover the constant and universal principles of human nature, by showing men in all varieties of circumstances and situations, and furnishing us with materials from which we may form our own observations . . . These records of wars, intrigues, factions, and revolutions, are so many collections of experiments, by which the politician or moral philosopher fixes the principles of his science, in the same manner as the physician or natural philosopher becomes acquainted with the nature of plants, minerals, and other external objects, by the experiments which he forms concerning them.

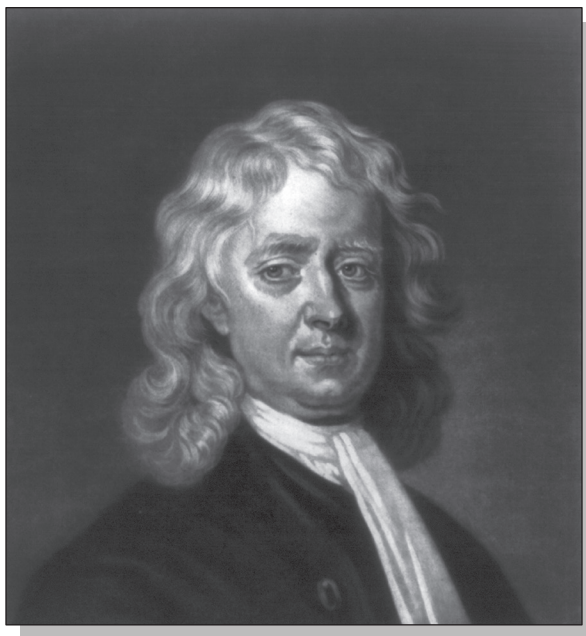
Source: Qtd. in Isaac Kramnick, *The Portable Enlightenment Reader* (New York: Penguin Books, 1995), 359–60.

DOCUMENT R

“Science Leads to God,” from Colin Maclaurin’s 1775 book on Newton’s discoveries.

A strong curiosity has prompted men in all times to study nature; every useful art has some connections with this science . . . But natural philosophy [science] is subservient to purposes of a higher kind, and is chiefly to be valued as it lays a sure foundation for natural religion and moral philosophy; by leading us, in a satisfactory manner, to the knowledge of the Author and Governor of the universe . . .

Source: Qtd. in Carl L. Becker, *The Heavenly City of Eighteenth-Century Philosophers* (New Haven, CT: Yale University Press, 1932), 62.



Sir Isaac Newton (1643–1727), English Physicist and Mathematician.

DOCUMENT S

“Dare to Know!” from Kant’s 1784 essay “What is Enlightenment?”

Enlightenment is man’s emergence from his self-imposed nonage [immaturity.] Nonage is the inability to use one’s own understanding without another’s guidance. This nonage is self-imposed if its cause lies not in lack of understanding but in indecision and lack of courage to use one’s own mind without another’s guidance. *Sapere aude!* [Dare to know!] “Have the courage to use your own understanding,” is therefore the motto of the Enlightenment.

Laziness and cowardice are the reasons why such a large part of mankind gladly remain minors all their lives, long after nature has freed them from external guidance. They are the reasons why it is so easy for others to set themselves up as guardians. It is so comfortable to be a minor. If I have a book that thinks for me, a pastor who acts as my conscience, a physician who prescribes my diet, and so on—then I have no need to exert myself. I have no need to think, if only I can pay; others will take care of that disagreeable business for me. Those guardians who have kindly taken supervision upon themselves see to it that the overwhelming majority of mankind—among them the entire fair sex—should consider the step to maturity not only as hard, but as extremely dangerous.

First, these guardians make their domestic cattle stupid and carefully prevent the docile creatures from taking a single step without the leading-strings to which they have fastened them. Then they show them the danger that would threaten them if they should try to walk by themselves. Now, this danger is really not very great; after stumbling a few times they would, at last, learn to walk. However, examples of such failures intimidate and generally discourage all further attempts . . .

Enlightenment requires nothing but freedom—and the most innocent of all that may be called “freedom”: freedom to make public use of one’s reason in all matters. Now I hear the cry from all sides: “Do not argue!” The officer says: “Do not argue! Drill!” The tax

collector: “Do not argue! Pay!” The pastor: “Do not argue! Believe!” Only one ruler in the world says: “Argue as much as you please, and about what you please, but obey!”

We find restrictions on freedom everywhere. But which restriction is harmful to enlightenment? I reply: the public use of one’s reason must be free at all times, and this alone can bring enlightenment to mankind.

Source: Qtd. in Peter Gay, ed., *The Enlightenment: A Comprehensive Anthology* (New York: Simon and Schuster, 1973), 384–6.

DOCUMENT T

“Science and Progress,” from Condorcet’s 1793 *The Progress of the Human Mind*.

The progress of philosophy and the sciences has favored and extended the progress of letters, and this in turn has served to make the study of sciences easier . . .

Scholarship . . . already knew how to weigh up authorities and compare them; it now learned how to bring every authority before the bar of reason . . . Nevertheless, we still see the forces of enlightenment in possession of no more than a very small portion of the globe, and the truly enlightened vastly outnumbered by the great mass of men who are still given over to ignorance and prejudice . . .

The progress of the sciences ensures the progress of the art of education which in turn advances that of the sciences. This reciprocal influence . . . deserves to be seen as one of the most powerful and active causes working for the perfection of mankind . . . As each [science] advances, the methods of expressing a large number of proofs in economical fashion and so making it easier to understand them, advance with it . . .

In the political sciences there are some truths that, with free people . . . can be of use only if they are widely known and acknowledged. So the influence of these sciences upon the freedom and prosperity of nations must in some degree be measured by the number of truths that, as a result of elementary instruction, are common knowledge; the swelling progress of elementary instruction, connected with the necessary progress of these sciences, promises us an improvement in the destiny of the human race . . .

Source: Qtd. in Alfred J. Andrea and James H. Overfield, eds., *The Human Record: Sources of Global History*, Vol. 2 (Boston: Houghton Mifflin, 1990), 182–5.

LESSON 3

What Influenced Science, and How?

Introduction

The following suggested activities and discussions are all based on students having read Student Handout 5.3.1. Students could work on the activities as a whole class, or they can do them as individuals, in pairs, or in groups. Sharing results with the whole class is in some cases a prerequisite for proceeding with subsequent activities or questions.

Activities

Ask students to respond to the following:

1. Make a list of the influences that helped promote the development of science during the period from about 800 to 1800 CE, drawing on the information in Student Handout 5.3.1. Ask students to remember that some influences affected science directly, others only indirectly. A unified consensus list, best arrived at in discussion, should be shared with the whole class. The questions could be restricted to the 1500–1800 period only.
2. If you were to classify the influences you have identified into groups, or categories according to some system, what principles of classification would you use? Why? For example, historical events could be grouped geographically, chronologically, or by the social class or religious group they affected, and so on. Make a note of the principles you came up with for categorizing influences on science.
3. Group the items on the list made in Activity 1 into three categories:
 - a. Interaction with other people (not forgetting new institutions and ways for people to interact both with like-minded people and with people different from themselves)
 - b. Contact with new ideas and information (not forgetting availability of ideas, spread of ideas, and reasons for acquiring or producing the ideas or information in the first place)
 - c. Observation and management of what is in the physical environment (not forgetting technology and need for resources)

A unified consensus list of the items in each category, best arrived at in discussion, needs to be shared with the whole class.

4. Explain in what ways the items in each category helped promote the development of or changes in science. Explanations need to be shared with whole class.
5. Compare the principles of classification you have come up with yourselves in Activity 2 with those proposed for you in Activity 3. What advantages and disadvantages can you identify in each?

6. Label each entry on Student Handout 5.3.1 as A, B, or C, according to work done in Activity 2. What chronological changes and continuities in the kinds of things that influenced the development of or changes in science can you identify? Would more or different categories be helpful? If yes, what would they be? How would you account for any patterns you have found? This activity should start with individual work, followed by class discussion.
7. Taking any patterns of change and continuity you have identified in Activity 4 into account, divide the chronological list in Student Handout 5.3.1 into as many periods as seems to make sense, given your data. On what basis have you chosen where you are placing the dividing lines between periods? Why? This activity should start with individual work, followed by class discussion.
8. Compare the periodization you have formulated in Activity 5 with the periodization in your textbook. How would you explain similarities and differences? In discussion compare the advantages and disadvantages of the textbook's periodization with yours.
9. **This activity may serve as an assessment.** The question could be restricted to the 1500–1800 period only. What do you consider the most important historical influences that helped promote the development of and changes in science during the period from about 800 to 1800 CE? Why? How did you decide what was important? Explain how each influence you identify affected science.
10. **This activity may serve as an assessment.** Construct an argument that comes as close as you can to proving the following claim: “The most important positive influences on the cumulative development of science during the sixteenth-eighteenth centuries were the acquisition and spread of new information and the cross-fertilization of ideas across geographic and cultural areas.” Include an assessment of how close you have come to proving what you have set out to prove.
11. What characteristics that might be called scientific can you identify in the critical thinking skills you used in doing this chapter? Explain. What critical skills typically associated with science were not used? Are the scientific skills you have just identified as missing from the chapter characteristic of every science? In what sense can history be called a science? During this activity, students might be reminded of Document P in Student Handout 5.2.1.
12. Thinking over the work done in this chapter, how would you explain, in about five minutes, what science is to an interested fourth grader? Would your explanation differ from the one you recorded in reply to the first question in this chapter's Introductory Activities? Why or why not? How, if at all, has your understanding of the nature of science changed since the Introductory Activities in which you tried to put into words what was or was not science or scientific?

Extension

1. Evaluate the claim “It was due to the developments in science during the millennium ending in 1800 that basic beliefs characteristic of our own times clearly took form.” Support your argument with evidence.
2. What is the defining characteristic of scientific truth—that is, how can one tell for sure what guarantees or proves that something can be accepted as true? Is there a difference between accepting something as true and its actually being true? What other kinds of truths besides scientific ones might there be? What validations or guarantees are there, or could there be, for certain truth in nonscientific areas?

What Influenced Science, and How?

The following influences are arranged in roughly chronological order.

Arabic numerals, including the zero, were developed in India. They were introduced to the Muslim world in the ninth century CE by al-Khwarizmi's book *The Hindu Art of Reckoning*, which explained how to use them for calculating without an abacus. Translated into Latin in the early twelfth century CE, the numbering system was introduced to Italy by a trader's son who had been sent to North Africa to learn mathematics around 1200. The zero did not come into widespread use in Europe until the seventeenth century.

Knowledge of papermaking reached Islam through Chinese prisoners of war in the tenth century. The first European paper mill operated in Italy in 1276. Germany and Italy were next in the fourteenth century.

In the ninth and tenth centuries the works of Greek philosophers, scientists, and mathematicians, as well as some works in Persian, Indian, and Chinese, were translated into Arabic and commented upon by Muslim authors. In twelfth century Spain, scholars worked to translate these works from both Greek and Arabic into Latin.

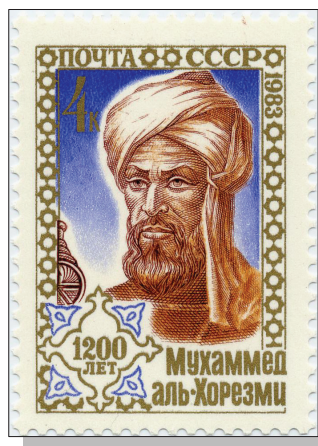
The mariners' compass was probably introduced to Islam from China in the eleventh century, and was familiar to Christian sailors in the Mediterranean by the end of the twelfth.

In the twelfth century, some scholars, both Muslims and Christians, followed the school of thought holding that religion and philosophy were not incompatible when both were properly understood.

In twelfth and thirteenth century Europe, the rise of towns and longer-distance trade, the extension of royal power over wider geographical areas, and the establishment of universities contributed to the emergence of a literate class, the vast majority of whose members were monks, friars, clergy, or more rarely, nuns.

Both the churchmen who taught in Western universities and Muslim scholars had standard texts by Greek mathematicians, scientists, philosophers, and physicians, along with Muslim commentaries of those works and original works by Muslims in Arabic. Ancient books by Euclid, Aristotle, Ptolemy, and Galen, as well as medieval texts by Ibn Sina (Avicenna from the eleventh century) and Ibn Rushd (Averroes from the twelfth century CE), were obligatory reading for most Muslim and Christian students and scholars.

Influenced by their reading of Greek philosophers, most Western scholars in the twelfth and thirteenth century held that the universe was a rational and coherent whole, operating according to laws that God interfered with only exceptionally. Also, humans were able to use reason to understand and explain both nature and holy scripture. Some suggested that Bible passages contradicting reason or the natural order should not be taken literally.



Al-Khwarizmi (c. 780–c. 850),
Muslim Mathematician born
in Baghdad.



Repeated decrees by various religious authorities forbidding the teaching of particular books or topics in the universities were not successful. While accepting the supremacy of theology and the Church, some scholars claimed that the spheres of religion and science were separate: "It is not the task of the Bible to teach us the nature of things; this belongs to philosophy."

In Europe by the mid-thirteenth century, summaries became available of university masters' lectures and treatises, which dealt with topics in physics, astronomy, mechanics, cosmology, and so on. These questions were hotly debated.

The presence of these subjects in the curriculum was voted on by the university faculties, because the universities were autonomous legal corporations with freedom to make decisions about their internal affairs, including what was to be taught.

Examples of block printing probably reached Europe from China in the thirteenth century, stimulating great interest.

Cannons were used by both Muslim and European armies in the fourteenth century. Their use spread widely in the fifteenth century, increasing demand for iron and for ways to calculate the trajectory of cannonballs.

Mechanical, weight-driven clocks that precisely measured twenty-four equal hours of a day and night first appeared in the fourteenth century and soon became widespread in Europe. They replaced earlier water-driven clocks that operated on hours of unequal length, depending as they did on a division of the day into 12 hours of light and 12 of dark, which differed in length seasonally and by latitude. These clocks also could freeze up in northern winter months.

In the fifteenth century, Muslim scientists in Samarkand (in today's Uzbekistan) published new, more accurate astronomical tables, which were later introduced to Europe.

Humanism emerged in the fourteenth and fifteenth centuries among the urbanized and commercial inhabitants of north Italian city-states. The humanist movement started as an interest in Greek and Roman rhetoric, literature, and history. Humanists searched eagerly for forgotten and neglected manuscripts of classical authors, and they recovered a number of major Greek mathematical work. They were also interested in Hebrew mystical and occult writings, numerology, Hermetic magic, astrology, and alchemy.

Especially in Italy, the focus of humanist scholars was more on human achievement in this world than on salvation in the next. Believing in the dignity, abilities, and perfectibility of humans, they strongly advocated education for high status women as well as for men.

In the later fourteenth and fifteenth centuries the overland access that European merchants had to East and Southeast Asia, owing partly to the existence of the Mongol Empires, was mostly closed. This cut into the flow and added to price of luxury items like spices, silks, porcelain, and pearls. Affluent Europeans had gotten used to these products since the Crusades, but now they had to buy them entirely through Muslim middlemen.

The power and prestige of the Roman Catholic Church declined in the fourteenth and fifteenth centuries owing to widespread abuses among Church personnel, schism within the church, the election of multiple popes, the spread of heresy, and kings' opposition to papal authority. Secular rulers and governments made themselves stronger.

The Ottoman conquest of Constantinople in 1453 resulted in the flight west of Greek-speaking refugees who could serve as language teachers and translators. By 1500, many Italian humanists knew Greek. A new wave of translations began to make more Greek authors available in Latin, especially of Plato and his followers, who emphasized mathematical harmony in the universe.

Renaissance artists of the fifteenth to sixteenth centuries studied anatomy and optics to help represent their subject accurately. They formulated basic rules of linear perspective as a way to represent three-dimensional objects on a two-dimensional surface. They often worked as engineers as well as artists.

The invention of moveable metal type in Europe in the mid-fifteenth century (a technique devised earlier in China and Korea) led to mass production of identical books and pamphlets. The first press in Rome produced twelve thousand volumes in five years. By 1500 it was estimated that there were one thousand presses in 265 towns.

In the fifteenth century, Portuguese and Spanish shipbuilders developed a new ship design, the caravel. It had high sides, a rounded profile, and a large cargo capacity. It required fewer hands to operate the rigging than did earlier designs. The triangular lateen sail, adapted from Arab models, allowed ships to tack against head winds.

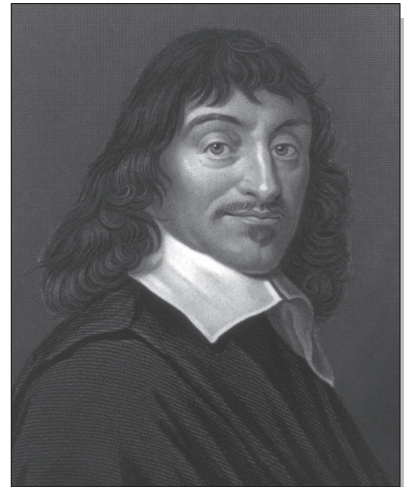
Increasingly accurate maps were produced in Europe, influenced by Muslim maps and Ptolemy's second-century CE *Geography*, which had become available in Europe in the fourteenth century.

In the late fifteenth century, Columbus concluded, based on a French philosopher's work, an Italian mathematician's map, and his own calculations drawn from Christian scripture, that the East Asian coast was only about 5,000 miles from the west coast of Europe. (The actual distance is about 12,000 miles.)

In the early modern period, diversity of cultural background in the sources of knowledge and ideas continued. During the first one hundred years of printing, some 10 percent of the authors of books on astronomy were Muslims. Chairs in Arabic and Hebrew were established in European universities in the fifteenth and sixteenth centuries. In the sixteenth and seventeenth centuries, some sixty editions of ibn Sina's *Canon*

of Medicine (written about 1030 and translated into Latin in the twelfth century) were published in Europe. Among European scientific scholars, Copernicus was a Pole, Kepler a German, Brahe a Dane, Galileo an Italian, Descartes a Frenchman, Newton an Englishman, Leeuwenhoek a Dutchman, and Franklin an American.

A number of the Greek works on mathematics recovered by humanists, including those of Archimedes, who was an engineer and inventor as well as mathematician in the third century BCE, were translated into Latin by the mid-sixteenth century. The professional teaching of mathematics spread in universities.



René Descartes (1596–1650),
French Mathematician, Scientist,
and Philosopher.



In the sixteenth century, scholars used mathematics not only to describe but also to explain the workings of the physical world. They insisted on the physical truth of their mathematically derived theories, and they searched for physical causes to account for the mathematics.

Internal problems of the Catholic Church, the Protestant Reformation, and the increasing fragmentation of Protestant churches brought about increasing skepticism and questioning of previously accepted authorities and ideas.

Martin Luther, who triggered the Protestant Reformation in 1517, and his followers in the Protestant Reformation held that no one, neither pope nor Church, had the authority to define true Christian belief. Individuals needed to read the Bible for themselves and to make their own interpretation guided by their conscience.

From the sixteenth century the spread of Reformation ideals, the growth of bureaucracies in centralizing monarchies, and the increase of global trade strengthened the demand for literacy, especially in northern Europe and among city populations generally.

In France, almost three times as many institutions of higher learning were founded between 1560 and 1650 as in all previous centuries. New universities were founded in Holland, Switzerland, Spain, Germany, Czechoslovakia, and Poland. French and English records show that a significant proportion of the students in schools, colleges, and universities came from merchant, shopkeeper, and artisan families, though only very rarely from peasant backgrounds.

An obtrusively bright supernova appeared among the fixed stars in 1573. Comets cut across the heavens in 1577, 1580, and 1585. Sunspots, the irregularity of the moon's surface, and the moons of Jupiter were observed in 1610.

Following the European overseas voyages of discovery, the number of travelers increased significantly. Explorers, government officials, adventurers, merchants, mercenaries, and scientists visited faraway places on ships armed with cannon. Many wrote about their experiences, describing previously unknown lands, plants, animals, and peoples radically different from those hitherto known. Many botanical, zoological, and even human specimens were brought back to Europe, both as curiosities and for their potential usefulness.

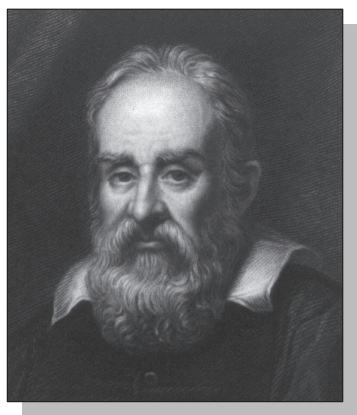
From the sixteenth century, increased demands for metals smelted with charcoal and for timber to build ships led to scarcity of wood, exhaustion of easily worked metal mines, opening of new mines for coal, the need for drainage in newly deep mines, and demands for improved mining machinery.

The English scholar Francis Bacon and his followers argued that the ability of science to produce useful knowledge and to further technological control of nature was taken as proof of its truth.

The mathematical notations “+” and “=” were introduced in the mid-1500s. About a hundred years later, so were the signs for multiplication and division. Coordinates, and the use of the letters “a, b, c” for known and of “x, y, z” for unknown mathematical quantities, also came into use. Negative and imaginary numbers the calculus of probabilities, decimals, logarithms, and infinitesimal calculus were invented during the seventeenth century.

A number of scientists in the sixteenth and seventeenth centuries were concerned about their ideas getting them into trouble with the Church. Bruno and Galileo were actually tried for heresy and convicted. Some other scholars were imprisoned. But there was no strong, concentrated, successful religious suppression of scientific ideas.

The existence and enforcement of censorship affecting the publication of scientific ideas varied by country. It was typically intermittent and inconsistently stringent, continuing so through the eighteenth century.



Galileo Galilei (1564–1642),
Italian Natural
Philosopher, Astronomer,
and Mathematician.

The Royal Society for the Improvement of Natural Knowledge by Experiment was founded in London in 1662. Also in England the Ordnance Office (equivalent of the Pentagon) paid the salary of the chief astronomer, called the astronomer royal. Louis XIV generously funded the French Royal Academy of Sciences. Scientific academies were also publicly funded in Berlin and St. Petersburg.

By 1750, philosophical societies dedicated to research, experiment, and publication of results were a regular feature of even provincial towns in England, France, Italy, Germany, and Holland.

Several members of the Royal Society continued in the seventeenth century to defend in writing the existence of demons, witches, and “intelligences” that animated stars.

Precision instruments specifically for scientific use were invented, such as the telescope, microscope, barometer, thermometer, air pump, pendulum clock, and spring watch. Most scientists made their own instruments until a body of craftsmen began to work on the frontiers of precision technology.

Exchanges of ideas in Europe occurred in private correspondences and in the journals of the scientific societies. An increasingly interested upper- and middle-class public had the opportunity to learn and talk about science in salons, reading clubs, and coffeehouses. In the 1660s, one French author claimed to have identified 251 women in Paris who were hosts of salons. Many scientists tried deliberately to write in ways that would make their work accessible to nonscientists and to spread the word in public lectures as well as in correspondence and in print (seventeenth and eighteenth centuries).

From the early eighteenth century, a growing population was seen as vital to a state’s future, so governments got into statistical estimations of the rates of birth, death, marriage, and so on. States also funded environmental studies of what made places healthy to live in.

Publications and literacy spread in the eighteenth century. In Britain 25 periodicals were published in 1700 and 158 in 1780. The first daily newspaper was published in London in 1702. In 1780, thirty-seven English towns had daily newspapers. In France, 30 titles were published yearly in 1750 and 1,600 in the 1780s. By that time literacy rates there had risen to 47 percent among men, 27 percent among women.



Intellectuals of the eighteenth century Enlightenment, known as *philosophes*, believed they could extend to the study of human behavior the use of the scientific method (to them, mostly reason backed by evidence). Their emphasis was on the “science of man” (what we would call the social sciences) and they studied society mostly in order to change it. They popularized scientific ideas and knowledge for the new reading public, believed that change would lead to progress, and questioned both tradition and authority. Many were anticlerical, and some antireligion.

At the end of the eighteenth century the French government held the first international scientific conference, intended to come up with a uniform, universal system of measurement. The collaborative efforts of nineteen participants from France, Denmark, the Netherlands, Switzerland, Italy, and Spain produced the standard meter (a measured portion of the earth’s circumference), the liter (contents of a cube one-tenth of a meter on each side), and other decimal measures to replace the thousands of different measurement units then-current in France, let alone elsewhere, at the time.

In 1760, John Harrison, an English craftsman, produced H-4, a watch for keeping precise time at sea and therefore for measuring longitude.

The Long Reach of the Major Religions



WHY STUDY THE MAJOR RELIGIONS?

This chapter presents several case studies regarding the extension of Christianity and Islam and their interactions with the societies of the new areas where they traveled. These two faiths have been called universal because membership in them is open to anyone who wants to accept their teachings and follow their instructions. In fact, both faiths actively seek to attract new members.

Many empires, such as the Persian and the Mongol, encouraged religious pluralism, while others, like the Roman Empire after Constantine and the Sui Dynasty in China, had policies favoring a single religion. In Muslim states such as the Abbasid and Ottoman empires, where Islam was the major faith, other religions were tolerated.

With the rise of national states in Europe and Asia between 1500 and 1800, a new threat was posed to these universal religions. Especially after the Protestant Reformation, which in the sixteenth century ruptured the Roman Catholic Church, each new European nation-state tended to opt to remain Catholic (France, Spain) or chose one variety of Protestantism (England, the Netherlands, Sweden). In the process, national identity began to rival Christianity as the primary claimant of the people's loyalty. Eventually, the tensions between religious faiths and the rising faith of nationalism contributed to the shaping of Europe into nation-states and zones of Catholicism and Protestantism.

In the period between 1500 and 1800, the conjuncture of reformation within the Roman Catholic Church with the advent of world colonialism ushered in waves of Christian expansion

into the Western Hemisphere and East Asia. Both Protestants and Roman Catholics, especially the Catholics of the Jesuit religious order, sought to spread their faith into the newly “discovered” areas. Meanwhile, increased expansion and militancy among Inner Eurasian Turkic groups and increased Muslim maritime activity, especially in the Indian Ocean, fostered Islam’s continued growth in South and Southeast Asia.

This chapter seeks to describe the spread of Islam and Christianity into new areas and to see religion generally as an integral factor of change during the period 1500–1800. One of the major challenges facing those who wished to spread their faith was determining what its relationships should be with the various states and societies where it took root. The carriers of these two universal faiths had to figure out how much to insist on the purity and orthodoxy of each of their faiths and how much they should adapt and broaden their religion’s beliefs and practices to include many local cultural elements. This tension is the underlying theme of this chapter.

The following “conversion spectrum” can be used throughout the chapter to help students visualize the historical issues:



TIME AND MATERIALS

Completion of this chapter will take ten class periods. However, the teacher may select from among the lessons and choose among the student handouts in order to shorten the time required.

Materials required: maps of the world and Europe, world history textbook, student notebooks, and pens. Photocopies are needed of student handouts.

OBJECTIVES

Upon completing this chapter, students will be able to:

1. Explain the major reasons for the Protestant Reformation and discuss the main differences between Roman Catholicism and Protestantism after 1530.
2. Analyze the various options that Catholics, Protestants, and Muslims took in their missionary efforts in different areas of the world (e.g., impose orthodoxy or allow for local variations).
3. Compare and contrast the record of conversion efforts in Europe and the Western Hemisphere with conversion history in Asia (both Christian and Muslim) during this era.
4. Describe the changing relationship of religion and the state in Europe and Asia during this era.
5. Evaluate the success of Christian and Muslim expansion and conversions as of 1800.

HISTORICAL CONTEXT

In the four decades after 1453, Christendom was on the defensive. The Ottoman Empire's conquest of most of the lands of the Eastern Orthodox Church brought Islam to the gates of Western Europe. Meanwhile, Muslim traders and missionaries carried their faith into central India, Inner Eurasia, and Southeast Asia. To the south, Islam was prospering in Africa, dwarfing Christian efforts at conversion there.

Not only was Christendom in Europe facing an expansionist Islam, but, in the later fourteenth and fifteenth centuries, the Roman Catholic Church had been engulfed in a wave of conflict and corruption. By the 1500s the Catholic Church was the wealthiest and most powerful institution in Europe. Many Church leaders lived more like kings than priests, and they became increasingly involved in political matters. To raise money for these activities, the Church imposed fees for services such as marriage and baptism, and it also began to sell indulgences, a practice in which clerics took donations from people on the promise of offering special prayers to speed the journey of deceased friends and relatives from purgatory to heaven. Sale of indulgences caused both anger and resentment across Europe, and many called for reforms.

Besides internal corruption, strong monarchies were radically extending their power in centralized states. These monarchs, some of whom claimed a divine right to rule, relentlessly threatened the Church's authority. The Church was increasingly unable to match the power of the emerging states, especially England, France, and Spain. Supported by growing numbers of artisans and a rising middle class of merchants and bankers, state governments collected increasing tax revenues, which enabled them to muster large armies that could enforce their will and extend their sovereignties. With the rapid rise of the commercial classes and the growing power of the emerging states, a new wave of religious reformers launched revolutionary movements against the established Church and in the process helped transform the face of Europe.

As feudalism crumbled and literacy spread, the expanding middle class and the peasants rushed to join the call for change. Reformers, including John Wycliffe (1224–1384), John Hus of Bohemia (1369–1415), and Savonarola (1452–1498), condemned the Church's commercial activities, especially the open marketing of salvation, calling such practices “mechanical Christianity.” In an age of both enormous Church power and the growing muscle of the emerging centralized states, these and other reformers directed their venom against both political leaders and the Church hierarchy. In turn, both Church and political leaders fought to preserve the status quo and were often united in condemning many of the reformers. These early reformers, however, paved the way for the final break Luther and Calvin initiated in the sixteenth century that culminated in the Protestant Reformation.

Beyond the immediate corruption within the Church, several other factors combined to shape the religious reforms of the sixteenth century. The Renaissance discovery of classical texts and the favoring of reason over dogma led many Europeans to question Church authority and to think more for themselves. The invention of moveable metal type around 1450 opened up education and reading to an increasing number of people. It facilitated the reading of the Bible in national languages, or vernaculars, thus breaking the Church's monopoly on knowledge. Further, Germany experienced rapid economic growth, but the benefits were not shared with peasants

and craftsmen. Finally, the Holy Roman Empire, ruled by the Catholic Habsburg Dynasty from the city of Vienna in Austria, exerted limited authority over powerful German princes, some of whom were eager to embrace new religions as a counter to Church and Habsburg power.

What began as a reformation of the German Roman Catholic Church spread widely. The Church found it difficult to suppress German heresy because of tensions existing between the popes and the princes. Luther spoke and wrote eloquently in German, while the Church held to the Latin. Printing also allowed the rapid dissemination of Luther's ideas.

Once the Protestant Reformation gained momentum, every state faced the daunting problem of resolving the question of its religious future. It was largely taken for granted that the ruler of a state had the authority to stipulate the religion of his or her subjects. But these populations were sometimes divided between Catholics and Protestants, and Protestant rulers became the enemies of Catholic rulers. After about 1530, Europe erupted in a series of religious wars that went on for more than a century. Only in 1648, with a series of diplomatic agreements known as the Peace of Westphalia, were more or less stable fault lines established between Protestant and Catholic Europe.

Even as the Christian Church fractured in Europe, missionaries carried the faith to the Western Hemisphere and Asia. At the same time, Islam continued its steady spread across Asia and into Africa. The activities of Muslim traders and merchants in the Indian Ocean, who dominated the seagoing trade, played a major role in the gradual Islamization of many areas. Muslim diaspora communities in key entrepôts, such as Malacca on the Malay coast and Aceh on the northern coast of Sumatra, persuaded local chieftains and princes to embrace Islam. Coastal ports along Java's northern shores successfully weakened the authority of Hindu-Buddhist states in the interior.

Meanwhile, in the Indian subcontinent, beginning in the twelfth century, Afghan and Turkic armies based in Afghanistan penetrated the Indus and Ganges valleys and, by 1206, had established nominal rule over large areas of the region. In 1526 the Mughals, another invading Turkic nomadic group, conquered northern India and established the Mughal Empire, which lasted as a unified state until 1707. During the Mughal era, Islam spread across India, winning many converts, especially in the Punjab and Bengal. These conversions were largely the result of Sufi missionaries, that is, adherents of mystical beliefs and practices. In the thousand-year relationship between Hinduism and Islam, both conflict and synthesis occurred. Islam has left an indelible impression on Indian culture, and it has been an integral part of Indian history. One legacy of this interaction is the fact that India is the fourth-largest Muslim nation in the world.

Buddhism in East Asia, without state patronage, had blended into a tradition of neo-Confucianism. Buddhism in a variety of forms not only dominated China after the Song Dynasty (ended 1279) but also became the official state philosophy in both Korea and Japan. Korea combined shamanism, neo-Confucianism, and Buddhism. In Japan, Buddhism and neo-Confucianism intermeshed with the native Shintoism. Buddhism remained dominant in mainland Southeast Asia.

As Christianity and Islam spread to new parts of the globe, these faiths confronted long-established cultural and religious traditions, and their missionaries had to decide whether to insist that the new converts observe the established orthodoxies or allow them to infuse local beliefs and traditions into the ways they practiced their faith. In this process, the Catholic Jesuits in Asia tended to find compromises between local customs and Christianity, and they wanted to allow the Chinese to retain certain long-established traditions, such as reverence for ancestors. The Jesuits in China represented synthesis on one end of the conversion spectrum. The Spanish Catholics in Hispaniola and Mexico insisted that the natives observe orthodox Catholic beliefs and practices, as did the Protestant Puritans in New England. These groups can be placed on the orthodox end of the conversion spectrum.

Synthesis: Allow for
incorporation of local
beliefs and customs

Allow *some inclusion*
of local culture

Insist on converts
accepting *orthodox*
beliefs and practices

THREE ESSENTIAL QUESTIONS

Humans and the Environment

Francis Bacon (1561–1626), the English natural philosopher credited with working out the fundamental ideas of the modern scientific method, wrote that “the world is made for man, not man for the world.” Relating this statement to the idea of humans achieving mastery over the physical and natural world, how do you think most European Christians of the seventeenth century would have responded to it? Are people more likely to take a critical view of this statement today? Why, or why not?

Humans and Other Humans

Research and construct a chart showing the number of adherents that Islam, Buddhism, and Christianity had in 1450. Make a similar chart for 1750. On two maps, show the areas where followers of these religions lived in these two periods. Compare the charts and maps and account for the changes in both numbers and area over the two-century period.

Humans and Ideas

Architectural styles of religious buildings often reflect changes in religious communities over time. 1. Research images showing similarities and differences in construction (both exterior and interior) of Roman Catholic and Protestant churches in Europe in the century or two following the Protestant Reformation. How might differences express or symbolize differences in belief and practice? 2. Research images showing similarities and differences in construction (both exterior and interior) of Muslim mosques in the Middle East, India, Southeast Asia, or West Africa in medieval or early modern times. How might differences express or symbolize local influences on religious belief or practice?

KEY THEMES

This chapter addresses the following historical themes:

Key Theme 3: Uses and Abuses of Power

Key Theme 5: Expressing Identity

Key Theme 7: Spiritual Life and Moral Codes

CORRELATIONS TO NATIONAL HISTORY STANDARDS

National Standards for World History

Era 6: The Emergence of the First Global Age, 1450–1770. 2B: The student understands the Renaissance, Reformation, and Catholic Reformation. Therefore, the student is able to . . . explain discontent among Europeans with the late medieval Church and analyze the beliefs and ideas of the leading Protestant reformers. 5B: The student understands the transformations in India, China . . . in an era of expanding commercial power. 5C: The student understands major cultural trends in Asia between the 16th and 18th centuries. Therefore, the student is able to . . . analyze how and why Islam continued to expand in India, Southeast Asia, and China. 6A: The student understands major global trends from 1450 to 1770. Therefore, the student is able to . . . identify patterns of social and cultural continuity in various societies and analyze ways in which peoples maintained traditions and resisted external challenges in the context of a rapidly changing world.

INSTRUCTIONAL RESOURCES

Armstrong, Karen. *Islam: A Short History*. New York: Modern Library, 2002.

Eaton, Richard M. *Islamic History as Global History*. Washington, DC: American Historical Association, 1990. A brief but illuminating summary of Islamic history, including a section on conversion to Islam.

———, ed. *India's Islamic Traditions, 711–1750*. New York: Oxford University Press, 2003. A collection of essays on Islam in India with excellent chapters on Akbar and Hindu/Islamic relations.

Elias, Jamal J. *Islam*. Upper Saddle River, NJ: Prentice Hall, 1998.

Esposito, John. *Islam: The Straight Path*. New York: Oxford University Press, 1998. A well-written survey of Muslim history.

Hawkins, Bradley K. *Buddhism*. Upper Saddle River, NJ: Prentice Hall, 1999. A simple but accurate survey of historic Buddhism.

“India’s Akbar the Great.” *Calliope* 15 (March 2005). Akbar ruled India from 1556 to 1605. *Calliope* is an excellent historical magazine for young people

“Islam’s Path East.” *Aramco World* 42 (November–December 1991). This volume, in the fine series for young readers titled *The Medieval and Early Modern World*, includes a chapter on the Protestant and Catholic Reformations.

Johnson, Donald, and Jean Elliot Johnson. *Universal Religions in World History: The Spread of Buddhism, Christianity, and Islam to 1500*. Boston: McGraw-Hill, 2007.

Swearer, Donald. *The Buddhist World of Southeast Asia*. Albany: State University of New York Press, 1995. A scholarly but accessible short book on Buddhism in Southeast Asia.

Tracy, James D. *Europe’s Reformation, 1450–1650*. Lanham, MD: Rowman & Littlefield, 1999.

Wiesner-Hanks, Merry E. *An Age of Voyages, 1350–1600*. New York: Oxford University Press, 2005.

———. *Early Modern Europe, 1450–1789*. New York: Cambridge University Press, 2006.

This general history of early modern Europe includes excellent surveys of the Protestant and Catholic Reformations, with careful attention to the role of women as religious leaders.

Wilson, Brian. *Christianity*. Upper Saddle River, NJ: Prentice Hall, 1998. A simple but accurate survey of Christianity.

LESSON 1

The Protestant Reformation

Preparation

Prior to this lesson, assign students to read Student Handout 6.1.1. Also, assign roles for the simulation of the trial of Luther. Try to assign the role of Luther to able students who can understand the difficult readings for the parts. Have maps of the European Reformation available to students and assign relevant sections on the Reformation in the students' textbooks.

Introduction

The profound schism in the Roman Catholic Church that took place in the sixteenth and seventeenth centuries changed the face of Europe. In addition, because Europeans were founding colonies in the Americas and, to a small extent, in Africa and Asia, the Protestant movements and the Catholic response also shaped the religious lives of millions in those parts of the world.

The Catholic Church reached the pinnacle of success in Europe under Pope Innocent III (1198–1216). During that period, the Church rivaled the power of the emerging centralized states, and several major reforms the Church hierarchy undertook temporarily cleansed the Church of corruption. In the fourteenth century, however, the development of two rival papacies, one in France and the other in Rome, symbolized the increasing worldliness of the Church and taxed the faith of many Catholics.

The Protestant Reformation and the Catholic Counter-Reformation played out as the newly emerging European states were starting to forge their modern identities. Consequently, religion and politics were inextricably entwined as each of the major states struggled to identify themselves as either Catholic, Protestant, or religiously pluralistic.

Among the growing abuses within the Church, simony, or the sale of Church offices, stood out. For example, the archbishop of Mainz paid thirty thousand ducats for his job, a sum equivalent to what a midlevel Church official would earn in fifteen years. Another questionable practice allowed one person to hold several Church offices at the same time. Furthermore, priests and bishops frequently hired stand-ins to perform their duties. In Germany, some 90 percent of parishes had only part-time priests. Nepotism was another common corrupt practice. Church officials regularly appointed their sons and other relatives to important positions.

Many popes led luxurious lives comparable to those of the leading nobility of the era. Their desire to create huge art collections and building projects led them to make increasing demands for money. The popes' fiscal demands, coupled with their obvious secular pleasures of concubines, fine food, and lavish lifestyles, propelled the Church toward a crisis of confidence in the sixteenth century.

Accompanying the Church's internal troubles was the growing power of the monarchs of increasingly centralized states, who wanted to break away from the political hold of the Church and establish their own primacy. In this process, rulers who embraced Protestantism were

tempted to appropriate the rich lands owned by the Church and turn them into income-producing assets for the state.

Using the format of a trial of Martin Luther, this lesson will examine the practices of the Roman Catholic Church that Luther and other Protestant leaders found objectionable. The lesson also introduces the Catholic response to the Protestant movement in Europe.

Activities

1. Conduct a general discussion with students to make sure all of them have some grasp of the basic elements of the Reformation struggle. (Note the key questions at the end of Student Handout 6.1.1.) Make sure they understand that the trial presents a hypothetical situation. Martin Luther did not actually undergo a Church trial.
2. Assign students to prepare for the roles they will play. They may use their textbooks or other library books, the documents included in this lesson, and relevant websites. If possible, encourage students playing similar roles on one side of a question to work together.
3. Assign Student Handout 6.1.1 and review the changes that occurred in the Catholic Church over the years. Speculate why some people might have been concerned by these changes.
4. Distribute Student Handout 6.1.2. Identify Luther's position and the reaction of the Catholic Church. Explain that Luther was obviously going against accepted dogma and practice, but it is not clear that he was a heretic or just a concerned Catholic wishing for reform. That is the main issue in the trial.
5. Hold the trial. The trial is adapted and simplified from the Advanced Placement course in European History taught at Highlands Ranch High School in Colorado by David Sedivy.

Note: Student Handout 6.1.4 is the basis of the first part of Lesson 2. Teachers should decide whether they want to distribute Student Handout 6.1.4 to selected students in the trial rather than to the whole class or whether they want to save this handout for Lesson 2.

6. Discuss whether there might have been ways to prevent the split between Catholics and Protestants. What form might it have taken? Why was no reconciliation possible?

Assessment

Assign each student to write a report of the trial from the viewpoint of a specific person, preferably the one she or he played in the role-play. That is, the journalists would write an article for their newspaper, the cardinals would submit their ruling with the supporting reasons to the Church, the lawyers would write up their briefs to those they represented, and the various witnesses might write letters to friends giving their reactions to the issues in the trial and its outcome.

Instructions for the Trial

Imagine that we are all transported back to the city of Worms in the year 1530. Here, you find yourself involved in the trial of the German monk, Martin Luther, who has given himself up to the authority of the Catholic Church to address the charges that he is a heretical revolutionary.

The specific charges are as follows:

Count 1: Development and preaching of heretical teachings

Count 2: Inciting members of the Catholic Church to rebel against the authority and established doctrines of the universal Church

Count 3: Willful denial of the authority of the pope and the Catholic Church

Roles in the Simulation

Characters should be assigned by the teacher or in consultation with students. The roles of Martin Luther and John Calvin and their defense lawyers, and Pope Leo X and his defense team, will require significant research and historical understanding. Some of the witnesses for the defense were long dead in 1520, but we are free to bring them back to life! There are nineteen roles for the simulation, but if the class is larger, add more defense lawyers, press, or other figures of that time such as German princes, rulers such as Henry VIII, or writers such as Erasmus.

The prosecution

Three prosecuting attorneys

Witness: Pope Leo X

Witness: Emperor Charles V

John Tetzel

The defense

German commoner

German prince

Three defense attorneys

Martin Luther

John Calvin, John Hus, and John Wycliffe (optional)

Seven cardinals who must decide the case

Press

Two or more reporters who cover the case

Martin Luther

1. He is the defendant in the trial.
2. He will testify in his defense before the tribunal.
3. He must provide answers to the questions that are consistent with his theological views and specific aspects of his life.

Prosecution team

1. The prosecution shall consist of four attorneys.
2. The prosecution will prepare its case to prove that Martin Luther is guilty under each of the three counts of the indictment listed above.
3. Each attorney for the prosecution will prepare a four-minute speech introducing and summarizing the prosecution's case against Luther.
4. The prosecution will be allowed to ask four primary questions and four follow-up questions as part of its examination of Luther, plus three primary and follow-up questions of each of the other witnesses (time not to exceed five minutes).

Defense team

1. The defense team shall consist of four attorneys.
2. The defense team will prepare its case to prove that Martin Luther and John Calvin are not guilty of any of the charges as outlined by the general indictment above.
3. Each attorney for the defense will prepare a four-minute speech, two introducing and two summarizing the defense team's case for Luther's acquittal on all three counts.
4. The defense will be allowed to ask four primary questions and four follow-up questions as part of its examination of Luther, plus three primary and follow-up questions of each of the other witnesses (time not to exceed five minutes).

Suggested witnesses

1. In addition to Luther's testimony, there will be other witnesses available for questioning; they will be witnesses for the prosecution and for the defense.
2. The prosecution witnesses will be Pope Leo X, Charles V (the Holy Roman emperor), John Tetzel, and a German commoner.
3. The defense witnesses will be Martin Luther, John Calvin, a German commoner, and a German prince who supports Luther.
4. Each witness must be familiar with the issues that would have concerned her or his character and with the general ideas and issues of the Protestant Reformation.
5. Members of both the prosecution and the defense will question each witness.

Judges

1. The seven cardinals are the judges for this tribunal. All are members of the College of Cardinals. While they are devout Catholics, they are also aware that there have been many concerns about various doctrines and practices within the Church. They are to judge Luther's case on the basis of the issues presented and decide whether or not he should be convicted of heresy and excommunicated. One of the seven judges will also act as the chief justice of the court and direct the trial.
2. The judges will preside over the trial, evaluate and rule on admissibility of evidence and arguments, maintain order in the court, and reach a verdict and impose a sentence.
3. Each judge shall read one of the verdicts for a specific charge.
4. The chief justice shall deliver the sentence agreed upon by the tribunal.

5. If the verdict is not unanimous, a majority and dissenting opinion will also be presented.

The only sentence possible in the event of a guilty verdict will be Luther's excommunication and the transfer of his case to civil authorities for a civil trial and a sentence to be administered thereafter (most likely a sentence to be burned at the stake).

News staff

1. Reporters will observe and report on pretrial, trial, and post-trial events.
2. They may interview various members of the defense and prosecution teams and speculate as to strategy, tactics, and opinion through, for example, editorials or cartoons.
3. They may choose either print or broadcast media.

Trial procedure

1. The chief justice reads the charges against Martin Luther and John Calvin.
2. Opening statement for the prosecution (8 minutes).
3. Opening statement for the defense (8 minutes).
4. Testimony of witnesses (prosecution and defense teams have five minutes for examination of each witness).
5. Closing statement for the prosecution (8 minutes).
6. Closing statement for the defense (8 minutes).
7. Judges deliberate and reach/read verdict and sentence.

Sources for students for role-play

1. Martin Luther, "The Pope Excommunicates Martin Luther," Papal Encyclicals Online. <http://www.papalencyclicals.net/Leo10/110exdom.htm>.
2. Luther's letter to Pope Leo X criticizing indulgences, Project Wittenberg. <http://www.iclnet.org/pub/resources/text/wittenberg/luther/nine5-pope.txt>.
3. Indulgences, Medieval Sourcebook, Paul Halsall, Fordham University Center for Medieval Studies. <http://www.fordham.edu/halsall/source/lutherltr-indulgences.html>.
4. Selected Works of Martin Luther, Project Wittenberg. <http://www.iclnet.org/pub/resources/text/wittenberg/wittenberg-luther.html>.
5. Calvinism, Carl Johnson, Believe. <http://mb-soft.com/believe/text/calvinis.htm>.
6. Pope Leo X, Portrait. <http://faculty.cua.edu/Pennington/ChurchHistory220/Lecture13/LeoXRaphael.htm>.

Major Differences between Catholics and Protestants

According to the Protestant reformers who shaped the Reformation, the Roman Catholic Church had over the centuries incorporated many practices that were not in the Bible. They also argued that these “pagan” practices had been officially accepted in a number of Church councils held over the centuries. The reformers alleged that in the creed adopted at the Council of Nicaea in 325, the Church first accepted such unscriptural ideas as praying for the dead, the veneration of angels and saints, the use of images, and the celebration of the daily mass.

These inclusions of nonscriptural practices continued through the Council of Ephesus in 431, where referring to Mary as the “Mother of God” became official Church doctrine. The Protestants also disputed the supremacy of the pope and argued that nine years after the Council of Ephesus, in 440, Leo, Bishop of Rome, was the first to call himself the successor of St. Peter and lay claim to the role of Universal Bishop, a forerunner of papal authority.

The Protestant reformers also argued that over the following four hundred years many more new beliefs were added to the Church: The doctrine of Purgatory (593), prayers to the Virgin, Queen of Heaven (600), the supremacy of the pope (440), the ritual kissing of the pope’s foot (709), temporal power granted to the pope (750), worship of the crucifix, and images and relics (786). Other changes included holy water mixed with a pinch of salt and blessed by a priest (850), the worship of St. Joseph (890), canonization of dead saints (995), the establishment of the College of Cardinals to elect the popes (927), the baptism of bells (965), the canonization of dead saints (995), prescribed fasts on Fridays and during Lent (998), and mass declared to be the sacrifice of Christ (1050).

The Reformers alleged that the Roman Catholic Church had continued to add even more doctrines that were not taken from the Bible. For example, in 1079, Pope Gregory VII declared that all priests must observe complete celibacy. In 1090, Peter the Hermit introduced praying with rosary beads. A few other beliefs and practices authorized by the Church were the inquisition of alleged heretics (1184), the sale of indulgences (1190), the doctrine of transubstantiation (1215), the confession of sins to a priest instead of to God (1215), adoration of the wafer (1220), the forbidding of Bible-reading by laity (1229), the forbidding of sharing the communion cup with laity (1414), and the establishment of purgatory as an irrefutable dogma (1439).

Source: Adapted from <http://www.victorious.org/churchbook/chur40.htm>.

Martin Luther and the Reformation

At the end of the fifteenth century, the Roman Catholic and Eastern Orthodox churches were the two main institutions representing Christianity. But in the sixteenth century, a wave of European reformers ushered in a series of events that would radically challenge Christian theology and practice. A Catholic monk and professor of theology named Martin Luther became convinced that the Bible was the only true authority in spiritual matters and that the Bible taught that salvation was granted only by God's grace and by faith. With these new insights, Luther sought to reform the Church and to expose its errant teachings.

Luther, who was born in Eisleben in 1483, first studied law, but in 1505 he studied theology with the Augustinian Hermits in Erfurt. Ordained in 1507, he became the professor of biblical studies at the University of Wittenberg in 1512.

After studying the Scriptures for many years, Luther came to reject the theology based heavily on Church traditions and rulings. He affirmed instead a personal relationship with Jesus Christ through faith. He believed that God chose to forgive the sinner by His sovereign grace. As Luther said, "We are justified not by our deeds, but by faith alone." In 1520 Luther wrote a letter (treatise) to Pope Leo X in which he stated: "The word of God cannot be received and cherished by any works whatever, but only by faith."



Martin Luther (1483–1546).

Luther strongly opposed the sale of indulgences. People bought special indulgences that they believed could shorten the time of their departed relatives and friends in Purgatory, a place where the soul was purged so it could enter Heaven. Luther found no foundation in Scripture, reason, or tradition for the sale of indulgences. Instead, it caused people to look to man (priests) instead of to God for forgiveness and the absolution of sins.

In October 1517, this earnest university professor posted ninety-five theses on a church door in Wittenberg stating that salvation is achieved through faith alone. Expecting only to initiate a discussion about the theology of indulgences, Luther was emboldened after his allegations spread throughout Europe.

Confronted with opposition from the archbishop of Mainz, who complained to Rome, Luther refused to honor a summons to Rome and fled town. In 1519, he denied the supremacy of the Pope and the infallibility of Church councils. In 1520, the Pope proclaimed his excommunication, and in 1521 the German Emperor Charles V outlawed him. In this dangerous atmosphere, Frederick of Saxony, a German Prince, took him to Wartburg Castle and protected him from arrest. While there, he translated the New Testament into German so that everyone might have access to the Bible.

Eight months later, in 1522, Luther returned to Wittenberg and introduced his reforms and a new form of worship. Over the next twenty-five years, he published many books in German,



written for the common people so that they could judge for themselves his teachings and disputes with Rome. After this time, many princes, sensing the opportunity to break from the emperor's power and attracted by Luther's theology, became his followers.

In 1529, Charles V tried forcefully to smother Luther's movement, but some of the self-governing German princes fought back. Because of their protest, his followers became known as "Protestants." What had started as an internal reform of Catholicism became a full-scale Protestant reformation, leading to the founding of a number of new Christian sects. In spite of his peace-seeking, non-controversial attempt to explain his views in 1530, the division between the Catholics and Protestants became more distinct.

Sources: Adapted and simplified from Dale A. Robbins, "What Is the Difference between a Protestant Church and a Catholic Church?" *What People Ask about the Church*. <http://www.victorious.org/churchbook/chur40.htm>. Introduction from <http://www.answers.com/topic/martin-luther>.

Issues Separating Luther and Protestantism from the Roman Catholic Tradition

Scripture

Roman Catholics believe that the task of authentically interpreting the word of God, whether written or handed on, is vested in the pope. The Protestant reformers insisted that the Scripture is the sole source of knowledge about the truth of God and Jesus' message and that every reader has the right to study, analyze, and reach his or her own conclusions on the meaning of Scripture.

Justification by Faith

The major issue that led to the Reformation was the issue of "justification." Justification can be defined as "the free and unmerited assistance or favor or energy or saving presence of God in his dealings with humans." A person is "justified" when she or he is "brought into right standing and into a right relationship with God." Protestants believe that humans do not have to work for justification. It comes to Christians as a free gift. One can grow in holiness but one cannot improve or add to his or her justification. That comes from faith alone. The Roman Catholic Church stated that an individual must work for justification: it depends upon one's effort, one's obedience, and one's goodness.

The Papacy

According to the canon law of the Roman Catholic Church, "The supreme or full power of jurisdiction over the universal Church both in matters of faith and morals and in matters of discipline and government belongs to the pope." Jurisdiction means the power to make laws and to compel obedience. The Church maintains that the pope's authority is absolute and immediate in all matters of faith and morals, and in matters of discipline and government. The Protestant reformers reject the pope's authority and insist that the Scriptures are the sole basis for all questions of faith, salvation, and other aspects of belief.

The Mass and Transubstantiation

For Roman Catholics, the celebration of the mass is a dramatic re-enactment of the sacrifice of Christ on Calvary. Catholics believe that when the priest pronounces the words, "This is my body", and "This is my blood," the bread and the wine before him on the altar become the actual body and blood of Christ in everything but taste, color, and texture. This is the miracle of transubstantiation. Protestants observe the act of communion (sharing the wine or grape juice and bread) as a symbolic reenactment of the Last Supper Jesus shared with his disciples. They do not believe there is any transubstantiation of the elements.

Penance

The sacrament of penance is one of the principal means of grace in the Roman Catholic Church. Catholics must confess their sins to a priest. Penance is a sacrament whereby sins, whether mortal or venial, which one has committed after baptism, are forgiven and all must go to the priest to have sins forgiven.



Purgatory

The Roman Catholic catechism states that purgatory is “the place where souls suffer for a time after death on account of their sins.” The Protestant Reformers argued that since Purgatory is not mentioned in the Scriptures, it has no validity in Christian teachings.

Mary

Many Catholics pray to Mary as a way to Christ. The Rosary, which is the most common prayer ritual of Roman Catholics, has ten prayers to Mary. Protestants value Mary as the mother of Jesus Christ but do not regard her as an intermediary between individuals and God.

Use of Images

After 786, Catholics were officially encouraged to use images as vehicles to help them reach God, especially images of Mary and the Crucified Jesus on the Cross. Protestants avoid the use of images, citing the commandment not to make graven images.

Sources: Adapted from, Dale A. Robbins, “*What People Ask about the Church*.” <http://www.victorious.org/churchbook/chur40.htm>; “Protestants or Catholics—Who Are Right?” <http://www.godonthenet.com/evidence/catholic.htm>; and “What Is the Difference between Catholics and Protestants?” <http://www.truth.info/church/catholic.vs.protestant.htm>.

Luther’s Basic Positions

Indulgences

Indulgences were granted by the pope. They forgave individual sinners not their sins, but the temporal punishment applied to those sins. These indulgences had become big business in much the same way pledge drives have become big business for public television in modern America. Luther’s *Theses*, which outlined his theological argument against the use of indulgences, were based on the notion that Christianity is fundamentally a phenomenon of the inner world of human beings and had little or nothing to do with the outer world, such as temporal punishments. It is this fundamental argument, not the controversy of the indulgences themselves, that most people in the Church disapproved of and that led to Luther’s being hauled into court in 1518 to defend his arguments against the cardinal Cajetan. When the interview focused on the spiritual value of “good works,” that is, the actions that people do in this world to benefit others and to pay off the debts they have incurred against God by sinning, Cajetan lost his temper and demanded that Luther recant. Luther ran, and his steady scission from the Church was set in motion. The Northern Humanists, however, embraced Luther and his ideas.



Faith, Not Good Works

Luther's first writing was *The Sermon on Good Works*, in which he argued that good works do not benefit the soul; only faith could do that.

I, Martin Luther, an unworthy preacher of the Gospel of our Lord Jesus Christ, thus profess and thus believe; that this article, that faith alone, without works, can justify before God, shall never be overthrown . . . This is the true Gospel . . . This is the doctrine I shall teach; and this the Holy Spirit and the Church of the faithful has delivered. In this will I abide. Amen.

Source: Qtd. in Logos Resource Page, David L. Brown and Malcolm Watts, "5 Pillars of Reformation Truth." <http://logosresourcepages.org/OurTimes/reformation.htm>.

Things took a turn for the worse: Pope Leo declared 41 articles of Luther's teachings as heretical, and Luther's books were publicly burned in Rome. Luther became more passionate in his effort to reform the Church.

In 1521, the Holy Roman Emperor, Charles V, demanded that Luther appear before the diet of the Holy Roman Empire at Worms. Luther was asked to explain his views and Charles ordered him to recant. Luther refused and he was placed under an imperial ban as an outlaw. He managed to escape, however, and he was hidden away in a castle in Wartburg where he continued to develop his new Church.

The confessions—the Augsburg Confession of 1530 and Luther's Small Catechism, along with five other supporting documents—are like the Magna Charta or the Declaration of Independence. They are not legislative, like constitutions. Rather, they are just what the name says, confessions of the freedom of the gospel in Jesus Christ that seek to orient further confessing by the people of God. At the same time, they are safeguards of the Church's freedom, protecting against the kind of abuses of power that occasioned the Lutheran reformation. For these reasons, Lutherans have given the confessions a prior status in the life of the Church. They come after the Scripture but before other authorities, like the constitution or Church-wide and synodical officers.

Source: Adapted from Augsburg Lutheran Churches. <http://www.augsburgchurches.org/Library/MoreAboutConfCrisis.htm>.

Talking Points for Participants in the Trial of Martin Luther

Students playing the roles of the prosecution and defense attorney, the pope, Luther, and cardinals can use this chart showing the major differences between Catholics and Protestants as the basis of their attack or defense.

Note: This student handout is the basis for the first part of Lesson 2. If you want to use it for that lesson, you should not distribute it to the whole class during this lesson.

PROTESTANT	CATHOLIC
The Old and New Testaments are the <i>only</i> sources of Christian teaching.	Sources of teaching include: <ul style="list-style-type: none"> • Old Testament • New Testament • Catholic Church tradition • Catholic interpretation of the Bible • Certain papal declarations • Bishops in conjunction with the pope • Apocrypha (some additions to the Bible)
We are justified (saved) by faith alone, not by good works. Good works will result in greater rewards in the afterlife but have no effect on getting saved.	When a person is baptized, her or his “original sin” is forgiven and God gives her or him some grace. This grace enables the person to do good works. God appreciates the good works and rewards them with more grace. Because the Christian has more grace, she or he can now do even better works. This pleases God even more, so He gives even more grace, etc.
Purgatory is unscriptural. Christ’s sacrifice on the cross was the only offering necessary and the only offering sufficient to provide salvation.	There are two types of punishment after death: temporal (temporary) and eternal. If a person dies with just one “mortal” sin on her or his soul, she or he will be condemned to Hell for eternity. If the person dies with only “venial” sins on her or his soul, she or he will be sent to Purgatory, perhaps for millions of years. Purgatory is exactly like Hell except that it does not last forever. Eventually, the person will be released to enter Heaven.
“Mortal” sin is an <i>extent</i> of sin, a pervasiveness of sin, sinning as a way of life, sinning as a regular practice, not a single sin, regardless of how serious that sin might be (for example, murder).	There are two types of sin: mortal and venial. A particular sin is either mortal or venial, depending on the severity. (For instance, stealing one dollar from a rich man would probably be a venial sin.) See the box above for the consequences of Catholic mortal sin.
Only God can forgive sins.	Catholic priests have been given the power to forgive sins, acting as representatives of the Holy Spirit.
The Holy Spirit is Jesus’ representative.	The pope is Jesus’ representative on Earth.
The pope speaks for no one.	The pope speaks for all Christians.



It is clear from Scripture that there was no “head” apostle in the New Testament churches. Paul expressly and publicly rebuked Peter, the alleged first pope, on one occasion. There is no biblical or historical evidence that Peter was ever the bishop of Rome.	Anyone who denies the authority of the pope despises the one who (allegedly) appointed him (i.e., Christ) and therefore despises the one who sent Christ (i.e., God the Father).
Mary had children by Joseph. In the Bible, Jesus’ brothers are expressly named: Joseph, James, Simon, and Jude.	Mary remained a virgin her entire life. The Greek word can mean either “brother” or “close relative.” The Bible is talking about Jesus’ cousins, not brothers.
Protestants believe the claim that Mary remained a virgin and was bodily assumed into Heaven is unscriptural.	Mary was bodily assumed into Heaven, like Elijah and Enoch.
Protestants believe that claiming Mary is the “spiritual mother” of all humans is unscriptural.	Mary is the “spiritual mother” of all humans.
There are no monks or nuns. Protestant ministers may marry.	Monasteries and nunneries are maintained, and priests and nuns are required to be unmarried and celibate.

Source: Adapted from Rick Reinckens, *Protestants or Catholics—Who Are Right?*
<http://www.godonthenet/evidence/catholic.htm>.

LESSON 2

The Counter-Reformation and the Religious Struggle in Europe

Preparation

This lesson follows directly from Lesson 1 on the trial of Luther. Students should be assigned relevant sections on the Counter-Reformation from their textbook.

Introduction

Initially, Luther and all the other reformers believed that they were trying to return Christianity to its original roots. However, leaders in the Roman Catholic Church quickly realized that Luther's protests were not just a disagreement within the Church over organization, but were fundamental attacks on Church doctrine and were spreading across Europe. Alarmed at the growing support his ideas were generating and at the increasing number of Protestants, the Church responded by calling for a council to meet and discuss the issues.

Protestant historians have given the name "Counter-Reformation" to the actions that culminated in the Council of Trent (1545–1563). Catholic historians see this movement as a continuation of ongoing Church reform. Pope Paul III (1534–1549) had clearly seen the need for radical reform in the Church. He worked to revitalize the College of Cardinals, supported the Jesuits, established the Holy Office as the supreme court of appeal for matters of faith and heresy, and convened the Council of Trent.

The Council of Trent that met in three sessions attempted to check and destroy the progress of the Protestant Reformation. In addressing the attacks of Luther, Calvin, and the other Protestant leaders, the council reaffirmed most of the traditional Catholic practices and beliefs, as the first part of this lesson illustrates.

For lay Catholics, the decisions of the council meant that all members of the Church were subject to powerful Church enforcement directed by the Church hierarchy. Parishioners were required to confess regularly and to participate in pilgrimages, ceremonies, and processions. Architecture, music, and art all combined to socialize the new orthodoxy in Catholic countries.

In hindsight, the early Reformation had been remarkably free from bloodshed. The Reformation and the Catholic reactions, however, spawned religious wars that swept through Europe from the mid-sixteenth to the seventeenth centuries and involved almost every fledgling state in the continent.

Support for the new orthodoxy was strongest in Italy and Spain, where inquisitions were held to purify the faith. The Spanish Netherlands was a hotbed of competition between Catholics and Protestants, as was Switzerland. France was less affected by the Counter-Reformation, and its leaders, hostile to the Habsburg dynasties, struggled to remain aloof from the more drastic implications of the Council of Trent. However, the Guises, an ultra-loyal Catholic Orthodox party that strongly supported the Council of Trent's decisions, fomented large-scale

attacks on the French Calvinists and sponsored the massacre that occurred on St. Bartholomew's Eve, August 23, 1572, when two thousand Protestants were murdered in Paris. The wars against the French Protestants, known as Huguenots, were spectacularly un-Christian.

These struggles would eventually shatter the European monarchical traditions. Protestants, unhappy with the rule of Catholic kings, challenged the monarchy, which had always seemed an impregnable political institution. Kings of the new states wanted domestic peace, and settling on either Catholicism or Protestantism seemed to be an important prerequisite for maintaining an orderly society. Those areas that emerged from these horrendous religious wars with large groups of both Catholic and Protestant subjects found it difficult to establish powerful new nation-states. Those like Spain and France (predominantly Catholic) and like England, Sweden, and the Netherlands (predominantly Protestant) were the most successful of the new states. Germany, riveted with religious conflict, would take much longer to forge a viable German state. The final result of these struggles would be the overthrow and execution of Charles I in England in the middle of the seventeenth century, a historical earthquake that permanently changed the face of Europe. The map at the end of this lesson is intended to illustrate these changes.

Another legacy of the religious wars was to demonstrate that the enormous bloodletting in the name of religion was abhorrent to the growing number of humanists throughout Europe. This disgust with the violence that the religious wars unleashed was a strong factor in the rise of reason and science in the subsequent generations in Europe.

Activities

1. The Catholic Church has just convicted Luther of heresy, but even so, a growing number of people (Protestants) agree with Luther and other Protestant leaders such as John Calvin. Ask the students to place themselves in the position of Catholic leaders in 1530 and brainstorm what the Church should do about the spread of Luther's ideas. Encourage a wide spectrum of suggestions, from executing all heretics to leaving the Protestants alone.
2. Divide the class into small groups (2 or 3 persons each) and give each group Student Handouts 6.2.1 and 6.2.2. Using the information in Student Handout 6.2.2, and any other research or sources available, have the class fill in the information for the Catholic (right-hand) side of Student Handout 6.2.1. The key to Student Handout 6.2.1 for teachers appears at the end of this lesson (Teacher Tool 6.2.1).
3. An alternate approach: Divide the class into small groups (2 or 3 persons each) and give each group Student Handouts 6.2.2 and 6.2.4. Using the information in Student Handout 6.2.2, and any other research or sources available, have them identify the information for the Catholic (right-hand) side of Student Handout 6.2.1 that reflects decisions of the Council of Trent.
4. As a class, review the information.
5. Move on to the issue of the religious wars in Europe by setting up a jigsaw lesson. Divide the class into three expert groups. For homework, give the members of each

group a copy of Student Handout 6.2.3A, 6.2.3B, or 6.2.3C. Assign students to read the handout for homework and be prepared to share the information.

6. On the next class day, have the expert groups meet briefly to be sure they have understood the reading. Then divide the class into new groups composed of one or more members of each of the expert groups. Ask the students in the new configuration to share their information as they discuss the following questions:
 - a. What role did the religious makeup of the population in various areas play?
 - b. Why did the aftermath of the Protestant Reformation and the Catholic Counter-Reformation lead to such long and bloody wars in Europe?
 - c. What were the major religious issues that separated people?
 - d. Why were the conflicts so violent?
7. You may ask the students in these groups to make a poster illustrating their information. Ask the groups to share their answers.
8. Assign students to study Student Handout 6.2.4, a map of the religious area in Europe during the seventeenth century. Compare this map with a map showing the nation-states in Europe during the same period. What conclusions can they draw?
9. Using the two maps as partial evidence, have the class discuss the outcomes of the religious wars and their enduring legacy in Europe.

Assessment

Drawing on information from Lessons One and Two on the Protestant and the Catholic reformations, write a three-page essay on one of the following:

1. Refer to the theme of conflict or synthesis. Did Luther's ideas and the Protestant Reformation result in more conflict or more synthesis?
2. How could the split between Protestants and Catholics have been prevented?
3. Why could the split between the Catholics and Protestants not have been prevented?
4. How did the religious wars in Europe from 1500–1650 help shape the national boundaries and cultures of modern Europe?

Teacher Tool: Key to Student Handout 6.2.1

PROTESTANT	CATHOLIC
The Old and New Testaments are the <i>only</i> sources of Christian teaching.	Sources of teaching include: <ul style="list-style-type: none"> • Old Testament • New Testament • Catholic Church tradition • Catholic interpretation of the Bible • Certain papal declarations • Bishops in conjunction with the pope • Apocrypha (some additions to the Bible)
We are justified (saved) by faith alone, not by good works. Good works will result in greater rewards in the afterlife but have no effect on getting saved.	When a person is baptized, her or his “original sin” is forgiven and God gives her or him some grace. This grace enables the person to do good works. God appreciates the good works and rewards them with more grace. Because the Christian has more grace, she or he can now do even better works. This pleases God even more, so He gives even more grace, etc.
Purgatory is unscriptural. Christ’s sacrifice on the cross was the only offering necessary and the only offering sufficient to provide salvation.	There are two types of punishment after death: temporal (temporary) and eternal. If a person dies with just one “mortal” sin on her or his soul, she or he will be condemned to Hell for eternity. If the person dies with only “venial” sins on her or his soul, she or he will be sent to Purgatory, perhaps for millions of years. Purgatory is exactly like Hell except that it does not last forever. Eventually, the person will be released to enter Heaven.
“Mortal” sin is an <i>extent</i> of sin, a pervasiveness of sin, sinning as a way of life, sinning as a regular practice, not a single sin, regardless of how serious that sin might be (for example, murder).	There are two types of sin: mortal and venial. A particular sin is either mortal or venial, depending on the severity. (For instance, stealing one dollar from a rich man would probably be a venial sin.) See the box above for the consequences of Catholic mortal sin.
Only God can forgive sins.	Catholic priests have been given the power to forgive sins, acting as representatives of the Holy Spirit.
The Holy Spirit is Jesus’ representative.	The pope is Jesus’ representative on Earth.
The pope speaks for no one.	The pope speaks for all Christians.



It is clear from Scripture that there was no “head” apostle in the New Testament churches. Paul expressly and publicly rebuked Peter, the alleged first pope, on one occasion. There is no biblical or historical evidence that Peter was ever the bishop of Rome.	Anyone who denies the authority of the pope despises the one who (allegedly) appointed him (i.e., Christ) and therefore despises the one who sent Christ (i.e., God the Father).
Mary had children by Joseph. In the Bible, Jesus’ brothers are expressly named: Joseph, James, Simon, and Jude.	Mary remained a virgin her entire life. The Greek word can mean either “brother” or “close relative.” The Bible is talking about Jesus’ cousins, not brothers.
Protestants believe the claim that Mary remained a virgin and was bodily assumed into Heaven is unscriptural.	Mary was bodily assumed into Heaven, like Elijah and Enoch.
Protestants believe that claiming Mary is the “spiritual mother” of all humans is unscriptural.	Mary is the “spiritual mother” of all humans.
There are no monks or nuns. Protestant ministers may marry.	Monasteries and nunneries are maintained, and priests and nuns are required to be unmarried and celibate.

Source: Adapted from Rick Reinckens, *Protestants or Catholics—Who Are Right?* <http://www.godonthenet/evidence/catholic.htm>.

Some Major Protestants Views

PROTESTANT	CATHOLIC
The Old and New Testaments are the <i>only</i> sources of Christian teaching.	
We are justified (saved) by faith alone, not by good works. Good works will result in greater rewards in the afterlife but have no effect on getting saved.	
Purgatory is unscriptural. Christ's sacrifice on the cross was the only offering necessary and the only offering sufficient to provide salvation.	
"Mortal" sin is an <i>extent</i> of sin, a pervasiveness of sin, sinning as a way of life, sinning as a regular practice, not a single sin, regardless of how serious that sin might be (for example, murder).	
Only God can forgive sins.	
The Holy Spirit is Jesus' representative.	
The pope speaks for no one.	



It is clear from Scripture that there was no “head” apostle in the New Testament churches. Paul expressly and publicly rebuked Peter, the alleged first pope, on one occasion. There is no biblical or historical evidence that Peter was ever the bishop of Rome.	
Mary had children by Joseph. In the Bible, Jesus’ brothers are expressly named: Joseph, James, Simon, and Jude.	
Protestants believe the claim that Mary remained a virgin and was bodily assumed into Heaven is unscriptural.	
Protestants believe that claiming Mary is the “spiritual mother” of all humans is unscriptural.	
There are no monks or nuns. Protestant ministers may marry.	

Source: Adapted from Rick Reinckens, *Protestants or Catholics—Who Are Right?* <http://www.godonthenet/evidence/catholic.htm>.

A Summary of Some of the Declarations of the Council of Trent

If anyone does not accept as sacred and canonical the aforesaid books in their entirety and with all their parts [the 66 books of the Bible plus 12 apocryphal books], ...as they have been accustomed to be read in the Catholic Church and as they are contained in the old Latin Vulgate Edition, and knowingly and deliberately rejects the aforesaid traditions, let him be anathema.

If anyone says that justifying faith is nothing else than confidence in divine mercy, which remits sins for Christ's sake, or that it is this confidence alone that justifies us, let him be anathema.

If anyone says that the justice received is not preserved and also not increased before God through good works, but that those works are merely the fruits and signs of justification obtained, but not the cause of its increase, let him be anathema.

If anyone says that the Catholic doctrine of justification as set forth by the holy council in the present decree, derogates in some respect from the glory of God or the merits of our Lord Jesus Christ, and does not rather illustrate the truth of our faith and no less the glory of God and of Christ Jesus, let him be anathema.

If anyone denies that in the sacrament of the most Holy Eucharist are contained truly, really, and substantially the body and blood together with the soul and divinity of our Lord Jesus Christ, and consequently the whole Christ, but says that He is in it only as in a sign, or figure or force, let him be anathema.

If anyone says that in the Catholic Church penance is not truly and properly a sacrament instituted by Christ the Lord for reconciling the faithful of God as often as they fall into sin after baptism, let him be anathema.

If anyone denies that sacramental confession was instituted by divine law or is necessary to salvation; or says that the manner of confessing secretly to a priest alone, which the Catholic Church has always observed from the beginning and still observes, is at variance with the institution and command of Christ and is a human contrivance, let him be anathema.

If anyone says that the confession of all sins as it is observed in the Church is impossible and is a human tradition to be abolished by pious people, let him be anathema.

If anyone says that God always pardons the whole penalty together with the guilt and that the satisfaction of penitents is nothing else than the faith by which they perceive that Christ has satisfied for them, let him be anathema.

If anyone says that by those words, "Do this for a commemoration of me," Christ did not institute the Apostles priests; or did not ordain that they and other priests should offer His own body and blood, let him be anathema.

If anyone says that it is a deception to celebrate masses in honor of the saints and in order to obtain their intercession with God, as the Church intends, let him be anathema.



If anyone says that there is not in the New Testament a visible and external priesthood, or that there is no power of consecrating and offering the true body and blood of the Lord and of forgiving and retaining sins, but only the office and bare ministry of preaching the Gospel; or that those who do not preach are not priests at all, let him be anathema.

If anyone says that the bishops who are chosen by the authority of the Roman pontiff are not true and legitimate bishops, but merely human deception, let him be anathema.

The holy council commands all bishops and others who hold the office of teaching above all to instruct the faithful diligently in matters relating to intercession and invocation of the saints, the veneration of relics, and the legitimate use of images, teaching them that the saints . . . offer up their prayers to God for men, that it is good and beneficial suppliantly to invoke them and to have recourse to their prayers, assistance, and support in order to obtain favors from God through His Son, Jesus Christ our Lord, who alone is our redeemer and savior and that they think impiously who deny that the saints . . . pray for men, or that our invocation of them to pray for each of us individually is idolatry, or that it is opposed to the word of God.

The holy council furthermore exhorts . . . all pastors, that, like good soldiers, they sedulously recommend to all the faithful all those things which . . . have been ordained, and . . . especially of those which tend to mortify the flesh, such as the choice of meats, and fasts; as also those which serve to promote piety, such as the devout and religious celebration of festival days.

Sources: Adapted from a list provided by David Cloud, Bible Baptist Church. http://www.biblebc.com/Roman%20Catholicism/summary_of_trent.htm. See also Hanover Historical Texts Project, Council of Trent. <http://history.hanover.edu/texts/trent.html>.

France's Religious Wars

The Wars of Religion

The latter half of the sixteenth century and the beginning of the seventeenth century brought about one of the most passionate and calamitous series of wars that Europe had ever experienced. The early Reformation had been, in hindsight, remarkably free from bloodshed; the honeymoon, however, lasted only a short while. It was inevitable that the growing division between Christian churches in Europe would lead to a series of armed conflicts for over a century. Protestants and Catholics would shed each other's blood in prodigious amounts in national wars and in civil wars. These struggles would eventually shatter the European monarchical traditions themselves. The monarchy, which had always seemed an impregnable political institution, was challenged by Protestants unhappy with the rule of Catholic kings. The final result of these struggles would be the overthrow and execution of Charles I in England in the middle of the seventeenth century, a historical earthquake that permanently changed the face of Europe.

The French Wars of Religion: 1562–1598

The first major set of wars fought over the new churches was a series of civil wars fought in France. In 1559, Francis II became king of France at the ripe old age of fifteen. Understanding that the monarch was weak, three major noble families began to struggle for control of France: the Guises (pronounced, geez) in eastern France, the Bourbons in southern France, and the Montmorency-Chatillons in central France. Of the three, the Guises were both the most powerful and the most fanatical about Catholicism; they would eventually gain control of the young monarch and, for all practical purposes, rule the state of France. The Bourbons and the Montmorency-Chatillons were mostly Catholics who—for political reasons—supported the Protestant cause.

The French Protestants were called Huguenots (pronounced, hoo-guh-no), and members of both the Bourbon and Montmorency-Chatillon families were major leaders in the Huguenot movement. The Huguenots represented only a very small part of the French population; in 1560, only seven or eight percent of the French people were Huguenots. They were, however, concentrated in politically important geographical regions; as a result, they were disproportionately powerful in the affairs of France. It is important to understand that the rivalry between the Guises and the other two families was primarily a political rivalry; this political rivalry, however, would be swept up in the spiritual conflict between the Catholic Church and the new reformed churches.

Francis II died in 1560 after only one year as king. At his death, his younger brother, Charles IX (ruled 1560–1574) assumed the throne. Because he was too young to serve as king, his mother, Catherine de Medici, became regent (a regent is the ruler of a kingdom when the king is incapable of exercising that rule). Catherine was a brilliant and powerful political thinker; she understood right off that the Guises were a threat to her and to her son. In order to tilt the political balance away from the powerful Guise family, she cultivated the Bourbons and the Montmorency-Chatillons. In the process, however, she also had to cultivate the support



of the Huguenots who were closely allied to those two families. Until this time, it was illegal for Huguenots to worship publicly (although there were over 2000 Huguenot churches in 1561). In 1562, Catherine took a great leap forward in religious toleration by allowing Huguenots to hold public worship *outside* the boundaries of towns. They were also allowed to hold Church assemblies. Catherine was a Catholic and wanted France to remain Catholic; she did not, however, want the Guises to be calling all the shots. The only way to chip away at the political power of the Guises was to increase the political power of the other major families and their Protestant allies.

The Guises, for their part, understood what this religious tolerance was all about and quickly clamped down on it. In March 1562, an army led by the Duke of Guise attacked a Protestant church service at Vassy in the province of Champagne and slaughtered everybody they could get their hands on: men, women, and children—all of whom were unarmed. Thus began the French wars of religion, which were to last for almost forty years and destroy thousands of innocent lives.

For all her brilliance, Catherine was placed in an impossible position. She did not want any noble family to exercise control over France; she simply wanted power to be more balanced. She also did not want a Protestant France. So the only strategy open to her was to play both sides, which she did with enormous shrewdness.

This balancing game came to an end, however, when Catherine helped the Guise family plot the assassination of Gaspard de Coligny, a Montmorency-Chatillon family member who was one of the major leaders of the French Huguenots. The assassination failed; Coligny was shot but not killed. The balancing game was over; the Huguenots and Coligny were furious at both Catherine and the Guises. Fearing a Huguenot uprising, Catherine convinced Charles IX that the Huguenots were plotting his overthrow under the leadership of Coligny. On August 24, 1572, the day before St. Bartholomew's Day, royal forces hunted down and executed over three thousand Huguenots, including Coligny, in Paris. Within three days, royal and Guise armies had hunted down and executed over twenty thousand Huguenots in the single most bloody and systematic extermination of non-combatants in European history until World War II.

The St. Bartholomew Massacre was a turning point in both French history and the history of the European Christian Church. Protestants no longer viewed Catholicism as a misguided Church, but as the force of the devil itself. No longer were Protestants fighting for a reformed Church, but they suddenly saw themselves fighting for survival against a Catholic Church whose cruelty and violence seemed to know no bounds. Throughout Europe, Protestant movements slowly transformed into militant movements.

In 1576, Henry III ascended to the throne; he was the youngest brother of Francis II and Charles IX. By this point, France had become a basket case. On the one hand, the Guises had formed a Catholic League, which was violent and fanatical. On the other hand, the Huguenots were filled with a passion for vengeance. Like his mother, Henry tried to stay in the middle of the conflict. Unlike his mother, he had immense popular support for this middle course; the St. Bartholomew Massacre had deeply troubled moderate Catholics and the growing conflict upset moderate Huguenots. These moderates were called *politiques* ("politicians"), since their central interest was the political and social stability of France rather than their religious beliefs.



The Catholic League was aided by Philip II of Spain who dedicated his monarchy to overthrowing the Protestant churches of other countries. By the mid-1580s, the Catholic League was in control of France and, after Henry III attempted to attack the League in 1588, the League drove him from Paris and embarked on a systematic massacre of non-combatants that rivaled the earlier St. Bartholomew's Massacre.

In exile, Henry III struck up an alliance with his Huguenot cousin, Henry of Navarre. Henry of Navarre was a *politique*; he believed that the peace and security of France were far more important than imposing his religious views. Before the two Henrys could attack Paris, however, Henry III was stabbed to death by a fanatical, fury-driven Dominican friar in 1589. Since Henry III had no children, Henry of Navarre, as next in line to the throne, became King of France as Henry IV (ruled 1589–1610).

Henry understood that the only way that France would find peace was if it were ruled by a tolerant *Catholic* king, so on July 25, 1593, he rejected his Protestant faith and officially became Catholic. On April 13, 1598, Henry IV ended the long and tiring religious wars in France by proclaiming the Edict of Nantes. This Edict granted to Huguenots the right to worship publicly, to occupy public office, to assemble, to gain admission to schools and universities, and to administer their own towns.

Source: Richard Hooker, World Civilizations, Washington State University. <http://www.wsu.edu/~dee/REFORM/WARS.HTM> (site discontinued). Thanks to Richard Law, director of general education, Washington State University, for permission to quote this website.

Religious Wars in Spain

The year 1556 saw the accession of perhaps the most important monarch of the sixteenth century: Philip II of Spain (ruled 1556–1598). Of all the monarchs of Europe, Philip was the most zealous defender of his religious faith, and his energies in pursuit of this defense greatly changed the face of Europe.

In the first half of his reign, he was instrumental in stopping the Turkish incursions into Europe. Philip's military power lay in his navy, which was the most powerful and imposing navy of the sixteenth century. Allied with Venice, his navy defeated the Turkish navy in the Gulf of Corinth near Greece and effectively halted the Turkish invasions of Europe. After this spectacular triumph, Philip then turned his efforts from routing the Muslims to routing the Protestants in Europe.

He first turned his sights to the Netherlands, a rich and prosperous merchant country that was ruled over by Spain. The Netherlands, however, had strong pockets of Calvinist resistance and the country slowly turned on its Spanish rulers. Philip responded by sending the Duke of Alba with an army to quell the revolt in 1567. Alba imposed a tribunal, the Council of Troubles, to question and sentence heretics (Protestants). The Dutch called this council the "Council of Blood," for it managed publicly to execute thousands of people before Alba was forced from the Netherlands.

Alba and his reign of terror did not quell the Protestant revolt in the Netherlands, but rather strengthened it. The central oppositional leader, William, the Prince of Orange (ruled 1533–1584), became a hero for the whole of the Netherlands, and in 1576 the Catholic provinces in the south allied themselves with the Protestant provinces in the north to revolt against Spain. The purpose of this alliance, called the Pacification of Ghent, was to enforce Netherlandish autonomy. The southern provinces, however, did not remain long in this alliance. In 1579, they made a separate peace with Spain (these southern provinces eventually became the country of Belgium) and the northern provinces formed a new alliance, the Union of Utrecht. Because Spain was overextended all over Europe, the northern provinces gradually drove the Spanish out until 1593, when the last Spanish soldier left Dutch soil. Still, the northern provinces were not recognized by Spain as an autonomous country until 1648 in the articles of the Peace of Westphalia.

Philip did not, however, want to interfere with the English, for England always seemed poised for a return to Catholicism. Elizabeth I of England also wanted to avoid any confrontation with Spain, so the war between the Spanish and the English was one of those unfortunate accidents of history—unfortunate, that is, for Spain.

In spite of Philip's reluctance to engage militarily with England, Elizabeth slowly ate away at Philip's patience. She had signed a mutual defense treaty with France after Spain had defeated the Turks. Fearful of the Spanish navy, she recognized that only an alliance with another country could protect England from Spain's powerful navy. In the late 1570s, Elizabeth allowed English ships to pirate and ransack Spanish ships sailing to and from the New World. In 1585, just as the Protestant provinces of the Netherlands were beginning to drive the Spanish from their country, Elizabeth sent English soldiers to the Netherlands to aid in the revolt.



Philip finally decided to invade England after the execution of the Catholic Mary, Queen of Scots. He was in part encouraged in this move by the Pope's excommunication of Elizabeth several years earlier; the excommunication of a monarch made it incumbent on all practicing Catholics to use any opportunity they could to assassinate or overthrow the monarch. Philip gathered his navy and on May 30, 1588, he sent a mighty armada of over 130 ships to invade England. The Armada contained over 25,000 soldiers and the ships gathered for the invasion in the English Channel south of England. The English, however, were ready. Because of their treaty with the French, the invasion barges, which were meant to transport soldiers from the Spanish galleons to the English coastline, were not allowed to leave the coast of France. When fierce channel winds scattered the Spanish fleet to the east, English and Dutch warships were able to destroy the fleet ship by ship. What few ships remained struggled around the north of England and down along the western coast, where several ships foundered.

In practical terms, the defeat of the Armada was a temporary setback for Spain. The 1590s saw impressive military victories for the Spanish. However, the defeat of the Armada was a tremendous psychological victory for European Protestants. Spain represented the only powerful military force that threatened the spread of Protestantism; when even the mighty Spanish navy could be defeated by an outnumbered English and Dutch fleet, Protestants everywhere were reinvigorated in their struggles against Spain and the Roman Catholic Church. By the end of the seventeenth century, Spain was no longer a major player in the power politics of Europe.

Source: Richard Hooker, World Civilizations, Washington State University. <http://www.wsu.edu/~dee/REFORM/WARS.HTM> (site discontinued). Thanks to Richard Law, director of general education, Washington State University, for permission to quote this website.

Major Results of the Thirty Years' War, 1618–1648

One major legacy of the Protestant Reformation was a violent period with seemingly constant warfare based, in part, on the division of Europe into Catholic and Protestant enclaves.

The conflicts began with the Peasants' War in Germany in the early sixteenth century, followed in the seventeenth century with religious wars involving many of the emerging European nation-states. In England, the Puritan Revolution sought to make England into a Protestant state.

The Dutch also experienced a revolt of Protestants against Spanish Catholic rule. In France, the Protestant Huguenots fought the Catholic League and Protestant England battled Catholic Spain on land and sea.

The rise of national states such as England, France, Sweden, Denmark, and Spain, together with the rise of the Habsburg Empire centered in Germany, culminated in thirty years of bloody religious conflict. The battles occurred mostly in German states, where Luther's new Protestant religion attracted a number of small states and principalities, while other areas remained loyal to the Catholic Church.

The battles of the Thirty Years' War were particularly brutal. Protestants looted Catholic cathedrals. The Catholic Inquisition burned many persons at the stake. Assassinations, atrocities, and mob violence were common on both sides. After fierce fighting and five years of negotiations, the Thirty Years' War ended in compromise with the Peace of Westphalia of 1648. This important set of treaties established the broad outlines of modern Europe and set the precedent for states to have either a Catholic or a Protestant majority. Germany, however, remained divided between the two faiths, a fact that contributed to postponing the unification of that country into a single nation-state for more than two centuries.

The following European states were involved in the religious wars:

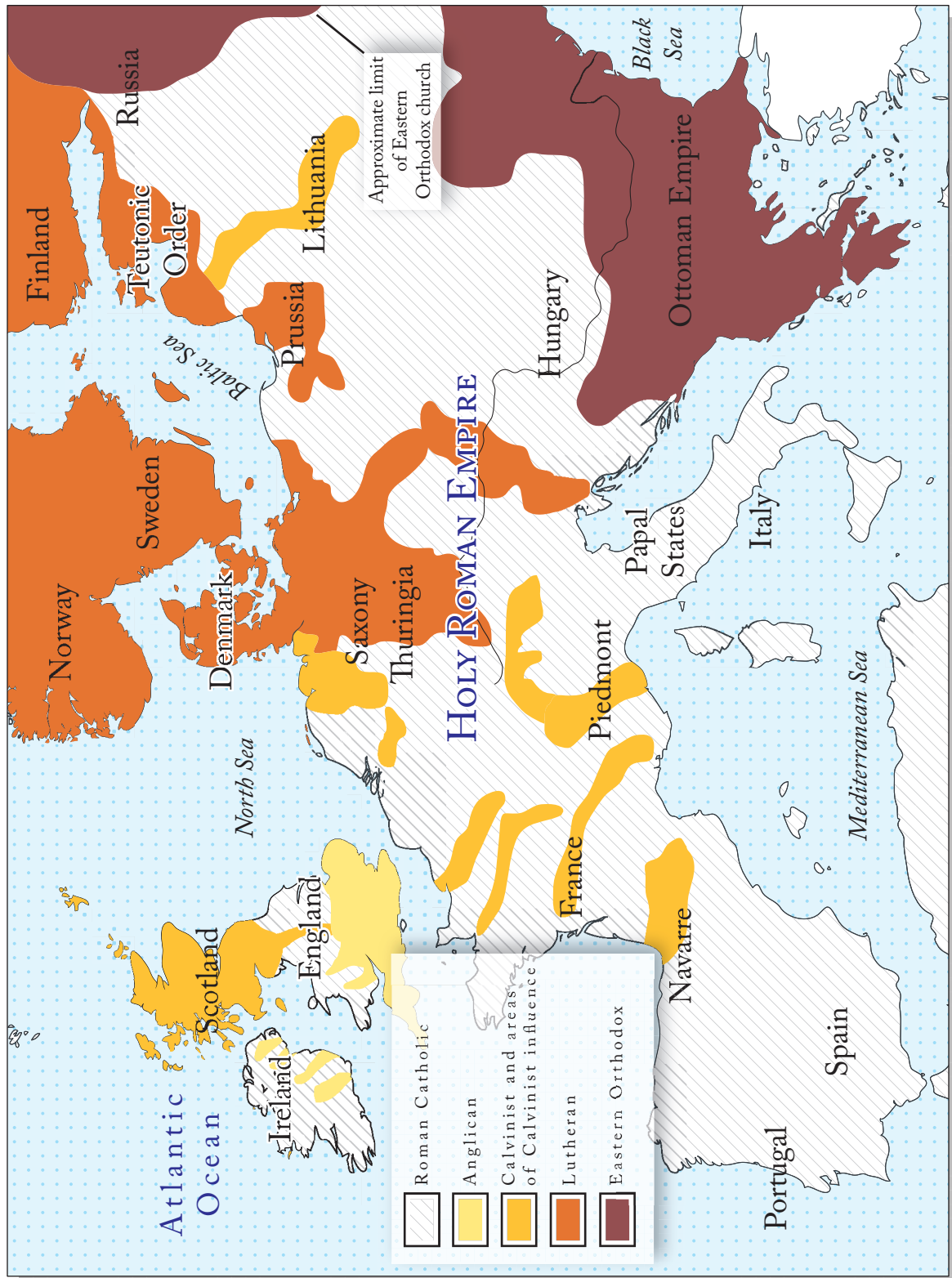
Ireland	Roman Catholic
Scotland	Calvinist
England	Protestant Church of England with strong Calvinist minority
France	Roman Catholic with a Huguenot, or Calvinist, minority
Spain, Portugal, Italy, Poland, Belgium, and Austria	Roman Catholic
The Netherlands	Calvinist
Switzerland	Catholic with strong Calvinist minority
Germany	Lutheran in northern sections, mostly Catholic in South
Bohemia (Czech Republic-area today)	Catholic and Protestant
Balkan states	Catholic, Eastern Orthodox Christian, or Muslim
Russia	Eastern Orthodox Christian
Norway, Sweden, Finland, and Denmark	Lutheran



By the terms of the Treaty of Westphalia, the Habsburgs accepted the independence of Switzerland and the separation of the United Provinces from the Spanish Netherlands. The sovereignty of the German states was also recognized, marking the failure of the Holy Roman emperor to turn Germany into a centralized Catholic monarchy. France clearly came out of the war as a major power in Europe. The Netherlands was now independent of Spanish rule, and Sweden emerged as a rising power. The treaty also recognized Calvinism as a legitimate religion in Europe.

Like most major wars, the Thirty Years' War left significant legacies in its wake. The Catholic Church's long-standing dream of one universal Church was shattered, and the goal of an all-encompassing Holy Roman Empire under Church control, long more symbol than political reality, also ended. Instead of European unity, the religious wars ushered in an age of small nation-states, most of which embraced either Catholicism or some branch of Protestantism. The Treaty of Westphalia also introduced the beginnings of the idea of religious toleration.

The war was especially costly for Germans. The various German states lost 7 million people out of a population of 21 million, a higher percentage of its population than they lost in World War II. The war, fought mostly in territories of the German states, visited pillage, famine, disease, and chaos upon an entire generation. After the war, Germany returned to a feudal system. The German people's enormous sufferings remained in the German consciousness for many generations.



LESSON 3

The Spread of Christianity in the Western Hemisphere

Preparation

Students should be assigned relevant sections from their textbooks on the Spanish missions in the Western Hemisphere as well as Student Handout 6.2.1. Teachers should review the era of European Christianization of the Americas by consulting relevant books or films.

Introduction

The Reformation ushered in new efforts on the part of Europeans to spread Christianity in the world. In this quest, however, the Roman Catholic Church had a decided advantage. Because it claimed that anyone could be saved, its missionaries were free to convert any human being anywhere regardless of race, culture, or location. On the other hand, early Protestants, particularly Calvinists, were constrained by their notion of the “elect.” Calvinists believed that God only chose a few people to be saved and all the rest were damned, no matter what they did or how they acted.

The Spanish, Portuguese, and French Catholics who colonized the Americas in the sixteenth century enthusiastically endeavored to spread Catholicism to the Native Americans they found there. The Society of Jesus, known as the Jesuits, played a major role in these conversion efforts.

One strong reason for the creation of the Society of Jesus was to counter Protestantism. Ignatius Loyola (1491–1556), who initiated the society, combined fierce piety and a military organization. Although the Jesuits were organized as an army with military ranks under the pope, all of its members were encouraged to think for themselves as “companions of Jesus.” The Jesuits’ goal was to halt the spread of Protestantism and to extend the reach of the Church by converting the “heathen.”

The Jesuits stressed education and an intellectual approach as the means of conversion. Jesuit colleges, staffed by Jesuits who learned local languages and tried to adapt to the local culture in each place they served, grew up all over the world. One of their axioms was “Give us a boy at the age of seven, and he will be ours forever.” During the sixteenth century, the Jesuits carried the Church’s message throughout Europe and the Americas, as well as to India, Japan, and China.

In the seventeenth century, the English and Dutch joined the race for colonies in the Western Hemisphere. Both the Anglicans (Protestant Church of England), in what later became the southern states, and the Puritans in New England were ambivalent about the conversion of Indians. In general, Protestants did not encourage conversions, although a few Protestant missionaries did venture into native lands to convert small numbers. It would not be until the early nineteenth century, when most Protestants accepted the concept of universal salvation, that Protestant missionaries undertook major efforts in Africa and Asia.

Christian missionaries who traveled far from their home bases in Europe faced a daunting dilemma. Should they follow St. Paul's dictum that they "Be all things to all people," or should they insist that converts strictly follow established doctrines and practices? Generally, most of the missionaries believed that they alone had the keys to salvation and that their world-view was absolutely true. These assumptions frequently led to unrestrained violence against those "heathen" who resisted the word of God.

This lesson asks students to consider Protestant and Catholic missionary efforts and to analyze in what ways religion in the Western Hemisphere evolved into an elaborate synthesis of Amerindian and Christian beliefs and practices.

Activities

1. Start the class by telling students that you have an important announcement. Then read a statement written in a foreign language that they cannot understand. (Teachers might consult language teachers for a short command such as, "In five minutes stand up and face the back or the room—or else I will deduct 10 points from your next quiz score," or some other suitable command and sanction.) Then start the class as if nothing had been said. Do not read the announcement again.
2. Introduce the topic by reading Student Handout 6.3.1 with the students, and help them understand the connection between the formation of the Society of Jesus and both the Protestant and Catholic Reformations. Tell students that this lesson will focus on Spanish efforts to convert Native Americans.
3. Have two students read the statements by Pope Alexander and by Columbus from Student Handout 6.3.2. Ask students to speculate, on the basis of these statements, how the Spanish will treat the Native Americans in the New World.
4. Now inform the class about whatever penalty you warned them about when the class started. After they react, make the comparison between the instructions you read and a *requerimiento*, a document that the Spanish were to read to the Native Americans in the Western Hemisphere (from Student Handout 6.3.2). Be sure the students understand what the *requerimiento* is threatening. Point out that the proclamation was read in Spanish or Latin, languages the Native Americans could not understand.
5. Have students discuss how the Spanish used the *requerimiento* to justify their actions in the Americas. How do they think the Native Americans, who did not speak Spanish and could not understand the directions, might react? Would it be fair if students lost 10 points from a quiz because they did not follow directions they could not understand?
6. Have students brainstorm effective tactics that the Spanish might use to get Native Americans interested in a new faith. Then have students briefly evaluate the different ideas they suggested: How practical are they? Were they likely to be successful?

7. For homework, assign Student Handouts 6.3.3 and 6.3.4 and have students note the Spanish strategy for converting Native Americans. Then make a list of what some of the missionaries actually did. Encourage students to analyze the contradictions among 1) Christian principles, 2) Spanish policies, and 3) the implementation of these policies as described by Las Casas. Students could be assigned to develop a three-column chart to record these points.
8. Refer to the “conversion spectrum” introduced earlier this chapter. Where on that schema do you think Catholic conversion efforts in the Americas fell?

Assessment

1. Create a portfolio of pictures depicting Spanish and/or French efforts to convert Native Americans. Write captions that express your interpretation of the meaning of these pictures.
2. Write an essay that evaluates the methods Spanish missionaries used to convert Native Americans. Have them include the results of these efforts in their assessment.
3. Have students whose parents or grandparents have come from another country research the ways in which they have incorporated customs from the lands of their birth into their present beliefs and actions.
4. Create a display of artifacts and/or pictures of artifacts and architecture illustrating the way Christianity and religious beliefs and practices in the Americas blended together.

The Origin of the Society of Jesus

Ignatius Loyola was born in a feudal castle in Spain in 1491. His first job was in the Spanish army where, during a battle, one of his legs was shattered. While he was recuperating, he began to read religious literature, and he was soon dreaming of becoming a crusader to the Holy Land. This mixture of religious and military zeal impelled his commitment to “mystical militarism.”

Soon Loyola was trying to convince others to join him in his dream of a spiritual conquest of the Holy Land. In 1538, he and his followers created a permanent organization, the Society of Jesus, to carry reform and spiritual enlightenment to all Catholic countries and beyond. Many began to join this new mendicant order that soon acquired a reputation for piety, saintliness, and military-style discipline. Jesuits begged for bread in the streets, slept in the poorhouse, cared for prisoners in the jails, and engaged in other acts of charity.

But the society’s distinguishing characteristic was that its members cultivated close contacts with the nobility, especially men and women in important positions. It was not long before its influence spread from Spain to Italy and France. At the time when the Church was suffering from Protestant attacks, the Jesuits brought new vitality, enthusiasm, methods, and spiritual outlook to the Church.

The Jesuits became the leading instruments of the Catholic Reformation. The religious reconquest of southern and western Germany for the Church, and the preservation of the Catholic faith in France and other countries, were due primarily to their efforts. From the very beginning, the Jesuit missionary efforts in India, Japan, China, Canada, and Central and South America were as important as their activity in Christian countries.



Ignatius of Loyola (1491–1556),
Founder of the Society of Jesus.

Spreading Christianity in the Americas

Excerpt from Pope Alexander VI, Papal Bull *Inter Caetera*, May 4, 1493.

Wherefore, as becomes Catholic kings and princes, after earnest consideration of all matters, especially of the rise and spread of the Catholic faith, as was the fashion of you ancestors, kings of renowned memory, you have purposed with the favor of divine clemency to bring under your sway the said mainlands and islands with their residents and inhabitants and to bring them to the Catholic faith.

Source: Marvin Lunenfeld, ed., 1492, *Discovery, Invasion, Encounter: Sources and Interpretations* (Lexington, MA: D. C. Heath, 1991), 187.

Excerpt from Letter from Christopher Columbus to Ferdinand and Isabella.

In the Name of our Lord Jesus Christ. . . . In consequence of the information which I had given your Highnesses respecting the countries of India and of a Prince, called Great Can, which in our language signifies King of Kings, how, at many times he and his predecessors had sent to Rome soliciting instructors who might teach him our holy faith, and the holy Father had never granted his request, whereby great numbers of people were lost, believing in idolatry and doctrines of perdition. Your Highnesses, as Catholic Christians, and princes who love and promote the holy Christian faith, and are enemies of the doctrine of Mahomet, and of all idolatry and heresy, determined to send me, Christopher Columbus, to the above-mentioned countries of India, to see the said princes, people, and territories, and to learn their disposition and the proper method of converting them to our holy faith; and furthermore directed that I should not proceed by land to the East, as is customary, but by a Westerly route, in which direction we have hitherto no certain evidence that any one has gone.

Source: Paul Leicester Ford, ed., *Writings of Christopher Columbus Descriptive of the Discovery and Occupation of the New World* (New York: Charles L. Webster, 1892), 27–9.

Requerimiento

When the conquistadors encountered a Native American community they hoped to convert, a priest would read a *requerimiento* to them in Latin or Spanish, languages Indians did not understand. Sometimes the declaration was read even when no Indians were present. The *requerimiento* was the only warning the natives had to convert or otherwise suffer.

Requerimiento written by the jurist Palacios Rubio of the Council of Castille in 1510.

On the part of the King, Don Fernando, and of Doña Juana, his daughter, Queen of Castille and León, subduers of the barbarous nations, we their servants notify and make known to you, as best we can, that the Lord our God, Living and Eternal, created the Heaven and the Earth, and one man and one woman, of whom you and we, all the men of the world, were and are descendants, and all those who came after us. But, on account of the multitude which has sprung from this man and woman in the five thousand years since the world was created, it was necessary that some men should go one way and some another,

and that they should be divided into many kingdoms and provinces, for in one alone they could not be sustained.

Of all these nations God our Lord gave charge to one man, called St. Peter, that he should be Lord and Superior of all the men in the world, that all should obey him, and that he should be the head of the whole human race, wherever men should live, and under whatever law, sect, or belief they should be; and he gave him the world for his kingdom and jurisdiction.

And he commanded him to place his seat in Rome, as the spot most fitting to rule the world from; but also he permitted him to have his seat in any other part of the world, and to judge and govern all Christians, Moors [Muslims], Jews, Gentiles, and all other sects. This man was called Pope, as if to say, Admirable Great Father and Governor of men. The men who lived in that time obeyed St. Peter, and took him for Lord, King, and Superior of the universe; so also they have regarded the others who after him have been elected to the pontificate, and so has it been continued even till now, and will continue till the end of the world. . . .

So their Highnesses are kings and lords of these islands and land of Tierra-firme by virtue of this donation: and some islands, and indeed almost all those to whom this has been notified, have received and served their Highnesses, as lords and kings, in the way that subjects ought to do, with good will, without any resistance, immediately, without delay, when they were informed of the aforesaid facts. And also they received and obeyed the priests whom their Highnesses sent to preach to them and to teach them our Holy Faith; and all these, of their own free will, without any reward or condition, have become Christians, and are so, and their Highnesses have joyfully and benignantly received them, and also have commanded them to be treated as their subjects and vassals; and you too are held and obliged to do the same. Wherefore, as best we can, we ask and require you that you consider what we have said to you, and that you take the time that shall be necessary to understand and deliberate upon it, and that you acknowledge the Church as the Ruler and Superior of the whole world, and the high priest called Pope, and in his name the King and Queen Doña Juana our lords, in his place, as superiors and lords and kings of these islands and this Tierra-firme by virtue of the said donation, and that you consent and give place that these religious fathers should declare and preach to you the aforesaid.

If you do so, you will do well, and that which you are obliged to do to their Highnesses, and we in their name shall receive you in all love and charity, and shall leave you, your wives, and your children, and your lands, free without servitude, that you may do with them and with yourselves freely that which you like and think best, and they shall not compel you to turn Christians, unless you yourselves, when informed of the truth, should wish to be converted to our Holy Catholic Faith, as almost all the inhabitants of the rest of the islands have done. And, besides this, their Highnesses award you many privileges and exemptions and will grant you many benefits.

But, if you do not do this, and maliciously make delay in it, I certify to you that, with the help of God, we shall powerfully enter into your country, and shall make war against you in all ways and manners that we can, and shall subject you to the yoke and obedience of the Church and of their Highnesses; we shall take you and your wives and your children, and shall make slaves of them, and as such shall sell and dispose of them as their Highnesses may command; and we shall take away your goods, and shall do you all the mischief and damage that we can, as to vassals who do not obey, and refuse to receive



their lord, and resist and contradict him; and we protest that the deaths and losses which shall accrue from this are your fault, and not that of their Highnesses, or ours, nor of these cavaliers who come with us. And that we have said this to you and made this Requisition, we request the notary here present to give us his testimony in writing, and we ask the rest who are present that they should be witnesses of this Requisition.

Source: *Requerimiento* qtd. in Marcelo J. Borges, History 130–10 (Latin American History to 1825), 2004, Dickinson College. <http://www.dickinson.edu/~borges/Resources-Requerimiento.htm>.

Spanish Strategies for Converting Native Americans

The New World people the Spanish encountered were not without culture. Several Native American civilizations were complex and productive and in many ways equal to those in Europe. Tenochtitlán, the major city of Mesoamerica, was a huge city with great temples and beautiful gardens.

The Incas of Peru controlled an empire of thousands of square miles and practiced a sophisticated form of agriculture that was more varied than any European nation could equal.

Although Native Americans built empires, cities, and a complex agricultural system, they did not have the weapons or the knowledge of steel that the Europeans did. The superior European power, combined with the Spanish religious zeal to convert the world to Catholicism, impelled a major effort to bring the Native Americans to Christianity. The institutions for this massive conversion were the schools, churches, and energetic missionaries, who often used force in their conversion project.

The orders from the Spanish Church dictated that Native Americans be gathered into villages and that each village open a school for young children, where they would be taught Christian doctrine. These schools, where around fifty students learned the new faith, produced teachers to instruct other children. By 1500, there were many such schools in Mexico and Peru.

Fray Martin de Valencia, the “St. Patrick of Mexico,” sums up the general Spanish reasons for the mass conversion of Native Americans. “God has brought us here . . . to seek . . . your salvation. Wherefore, beloved brethren, it is necessary that you put your young children into our hands that they may be taught. . . . Furthermore, they, being but children, will understand more easily the doctrines we teach. . . . Afterward, they will aid us in teaching you what they have learned.”¹

By 1525, the Spanish began systematically to destroy the Aztec cultural and religious heritage. The colonizers destroyed Aztec temples, religious images, and manuscripts. Native American students were required to march through the streets of Mexico City on Sundays to smash all pagan objects. Student converts were encouraged to spy on their parents so that priests could go to their homes and smash idols. . . .

The Catholic priests used both punishment and rewards to achieve their goal of conversion. Sometimes they whipped the Native Americans with a lash and then gave out gifts of grain and meat to facilitate conversion.

Because the Native American societies were so diverse, the Catholic leaders began to require that people learn Spanish. The Spanish produced simple books that explained concepts such as the Trinity and Grace, concepts not found in the local languages.

Source: R. V. Farrell, *The Conquest of Minds: Lessons and Strategies from Latin American Educational History*, Florida International University. <http://www.cedu.niu.edu/blackwell/farrell01.htm> (site discontinued).

1. C. S. Braden, *Religious Aspects of the Conquest of Mexico* (Durham, NC: Duke University Press, 1930), 143.

Spanish Conversion Policy in Practice

Misunderstandings.

The core of the religion [of the Tainos who lived on the eastern end of Cuba] centered on the cult of *cemies*, figures in animal and human form or in three-pointed shapes, formed from stone, wood, clay, and cotton. The objects contained spiritual power, which worshippers believed they could draw on with the figures' aid. The unhappy consequences of a lack of mutual understanding by the Christians and the islanders of each other's religious principles is evident in an incident that would be richly comic save for the result. When the Spanish gave the Tainos crucifixes and statues of the Virgin, the Tainos added these objects to their store of *cemies*. In keeping with their agrarian cult of fertility, they urinated on the sacred objects and buried them in the fields to ensure bountiful crops. The Spanish thought this blasphemy and so executed the offenders.

Source: Marvin Lunenfeld, ed., *1492, Discovery, Invasion, Encounter: Sources and Interpretations* (Lexington, MA: D. C. Heath, 1991), 143.

Profile of the Spanish Franciscan Missionary.

Back in the 1960s, at the old Spanish Mission Concepción in San Antonio, I met a young priest, a Jesuit, as I recall, who had just arrived in the area. He came from Cincinnati. He spoke perfect Castilian Spanish. I could see in his eyes his enthusiasm for the history of the missions. "As soon as I can get time," he said, "I'm going to research the archives at the archdiocese to see if I can learn why the Indians kept running away from the missions during the days of the Franciscans."

"Father," I said, having just read the history, "the Indians came to the missions hoping for protection from the Apaches and a dependable source of food. The friars tried to force them to become Christians and Spanish subjects. They tried to destroy their old religions and rituals and customs. They tried to make them worship a new deity, learn the catechisms, sing new religious songs and attend the masses. They tried to make them work in the mission fields and workshops and give up old traditions and freedoms. If the Indians escaped the missions, the friars sent soldiers to recapture them. They punished and jailed and beat those they could catch. They made slaves of the Indians."

"Yes," the young priest said without a trace of irony, "but look what the Franciscans gave them: Christianity and civilization."

Source: Jay W. Sharp, "Profile of the Spanish Franciscan Missionary," DesertUSA. <http://www.desertusa.com/ind1/franciscan.html>.

Bartolomé de Las Casas, Report on Treatment of Native Americans in Hispaniola.

The Christians punched them, boxed their ears and flogged them in order to track down the local leaders, and the whole shameful process came to a head when one of the European commanders raped the wife of the paramount chief of the entire island.



Their (Taino) weapons, however, were flimsy and ineffective both in attack and in defense (and, indeed, war in the Americas is no more deadly than our jousting or than many European children's games) and, with their horses and swords and lances, the Spaniards easily fend them off, killing them and committing all kind of atrocities against them.

They forced their way into native settlements, slaughtering everyone they found there, including small children, old men, pregnant women, and even women who had just given birth. They hacked them to pieces, slicing open their bellies with their swords as though they were so many sheep herded into a pen. They even laid wagers on whether they could manage to slice a man in two at a stroke, or cut an individual's head from his body, or disembowel him with a single blow of their axes. They grabbed suckling infants by the feet and, ripping them from their mothers' breasts, dashed them headlong against the rocks. Others, laughing and joking all the while, threw them over their shoulders into a river, shouting: "Wriggle, you little perisher." They spared no one, erecting especially wide gibbets on which they could string their victims up with their feet just off the ground and then burn them alive thirteen at a time, in honor of our Savior and the twelve Apostles, or tie dry straw to their bodies and set fire to it. Some they chose to keep alive and simply cut their wrists, leaving their hands dangling, saying to them: "Take this letter"— meaning that their sorry condition would [serve] as a warning to those hiding in the hills. The way they normally dealt with the native leaders and nobles was to tie them to a kind of griddle consisting of sticks resting on pitchforks driven into the ground and then grill them over a slow fire, with the result that they howled in agony and despair as they died a lingering death.

Source: Bartolomé de Las Casas, *A Short Account of the Destruction of the Indies*, trans. Nigel Griffin (New York: Penguin, 1999), qtd. in "The Slaughter that Came with the Arrival of Christopher Columbus," International Tribal Charter, the Native American Indian Taino Tribe of Turabo. <http://www.indio.net/aymaco/slaughter.htm>.

LESSON 4

Hindus and Muslims and the Development of the Sikh Religion in India

Preparation

Ask students to review the information they studied in earlier classes about Hinduism, the major belief system in India. Briefly review the ways Islam reached the Indian subcontinent. Make sure the students understand that the majority of persons in the Mughal Empire (1526–1757) were Hindu, though the Mughal rulers were Muslims.

Introduction

This lesson examines the interaction among various religious faiths in the Indian subcontinent in the fifteenth through the seventeenth centuries. It starts with a comparison of Hinduism and Islam and two devotional expressions of these faiths: Bhakti and Sufism.

Bhakti was a reform movement in Hinduism that started in south India in the eighth century. Its leaders emphasized the fundamental equality of all religions. Sufism was a reform and spiritual movement within Islam, which started in Persia as a reaction to the constant feuds between the Sunni and the Shia sects of Islam. It emphasized toleration and universal brotherhood. Sufis believed in the equality of all human beings, whether they were Sunni or Shia, or followers of any other religion.

Students are presented with the differences between Hinduism and Islam and the similarities between Bhakti and Sufism. They then examine Sikhism, a new religion that developed from both of these faiths. Students then consider the strategies two Mughal rulers employed to handle their Hindu subjects, including trying to create yet another new faith. The lesson ends with a look at what happened to change Sikhism from a tolerant to a militaristic faith. Students should be left with questions about what these experiences say about conflict and synthesis.

Activities

1. Distribute Student Handout 6.4.1. Ask students what problems these differences might present to a Mughal ruler who is ruling over a land that is predominantly Hindu.
2. Have students brainstorm different ways that a Mughal ruler might treat the various religious groups in his kingdom, ranging from unquestioning toleration of any and all religions to imposing one faith on all subjects on pain of death. Pair students and have them evaluate these various options. Have students share their assessments with the rest of the class, and have the class evaluate the pros and cons of each option.

3. Divide the class into two groups. Have one half read Akbar's actions and statements about the importance of religious toleration and his attempts to create a new religion (Student Handout 6.4.2, Akbar's Attitudes toward Religion). Have the other half read about Aurangzeb's actions and attitudes toward other faiths, especially Hinduism (Student Handout 6.4.3, Emperor Aurangzeb's Attitudes toward non-Muslims). Ask each group to evaluate the actions described in its reading.

Either as a whole class or in groups of six to eight students, evenly divided between the students from the two original groups, ask students to debate the wisdom of the various ways these two leaders handled pluralism. They may discuss:

- a. Which approach would best help a ruler maintain control over the kingdom and why?
- b. Which approach would the majority of the people probably prefer and why?
- c. Which would be most conducive to peace within the empire, and why?

Have students share their conclusions with the rest of the class. Ask students whether Akbar really started a new religion; was he a type of Sufi Muslim? How many of them thought Akbar's idea of a religion was a good idea and why? Ask the class why they think the faith he preached was never followed. Why did Nanak start a new faith?

4. Give students a copy of the poems in Student Handout 6.4.4. Help students understand the information about Sufism and Bhakti beliefs contained in the handout. Ask selected students to read them aloud. Ask students to decide which ones were written by Hindu poets and which ones by Muslim poets. Stress that the poems are very similar (Key: A-Sufi, B-Bhakti, C-Bhakti, D-Sufi, E-Sufi, F-Bhakti, G-Bhakti). Then discuss with students the part of Student Handout 6.4.4 that identifies Bhakti and Sufi beliefs. What do these poems suggest about the difference and similarities between Sufism and Bhakti?
5. Assign Student Handout 6.4.5. Discuss questions such as What was Nanak's attitude toward Hinduism and Islam? What motivated him to start a new religion? How might Hindus and Muslims have reacted to this new community? Might they have been drawn to join it? Why or why not? Discuss with students what impact Sikhism might have had on relations between Hindus and Muslims on the Indian subcontinent at that time.
6. Assign Student Handout 6.4.6. What was the reason the Sikhs became a militant group? What does their experience suggest about conflict and synthesis among religious groups?
7. Referring to the "conversion spectrum" introduced in the Historical Context of this chapter, ask students where on the spectrum Nanak and Akbar's teachings fell.

Assessment

1. Have students prepare a conversation among a Hindu, a Muslim, and a Sikh in which they compare and contrast their faiths. Have them focus on how they react to one another.
2. Have students create a photo essay of Hindu-Islamic architecture that illustrates characteristics of both faiths and how the two faiths might have influenced each other.
3. Have students write an essay comparing and contrasting the religious toleration of either:
 - a. Hinduism, Islam, and Sikhism
 - b. Nanak, Akbar, and Aurangzeb
4. Have students develop a three-column chart comparing Hindu, Muslim, and Sikh beliefs and practices. Have them write a one-page essay on the question, “Is Sikhism more like Hinduism or more like Islam?”

Summative Assessment

Option 1:

Assign students to identify some local customs in their own communities that were not part of original Christian, Muslim, Jewish, or Buddhist teachings, such as trees, exchanges of gifts, or the eating of special foods. They could ask relatives or neighbors who have come from other areas of the world to help them identify local customs that have been incorporated into festivals. Encourage students also to recall examples from previous classes on how religions have changed to adapt to local societies. Assign them to make a presentation, with visuals, to the class based on what they have researched.

Option 2:

Select any two areas of the world where new religions spread during the period 1500–1800. Write an essay that compares and contrasts their historic experiences in dealing with the issue of orthodoxy and synthesis. Examples might be Christianity in the Western Hemisphere or Islam in India and Southeast Asia.

Option 3:

Compare and contrast the efforts of the Roman Catholic Church after the Protestant Reformation to spread its faith with the way Islam spread in South and Southeast Asia during the same period.

Comparison of Beliefs and Practices of Hindus and Muslims

Islam	Hinduism
Monotheistic: Only one God (Allah in Arabic)	Polytheistic: many gods and goddesses; divinity may be conceived with form or without
Building from Judeo-Christian heritage but with specific starting date of 622 (the year the Prophet Muhammad moved from Mecca to Medina)	Amalgamation of a variety of religious traditions in the Indian subcontinent; an ongoing process
Mosque = place of prostration	Temple = home of the gods
Built around an open courtyard	Inner sanctum is secluded, dark, moist, the womb of the world
No representation of natural forms; much use of calligraphy	Much representation of living forms: animals, plants, humans, and divine forms
Arches, vaults, and domes	Pillars, post, and lintel
Dome represents Heaven; square base represents Earth	
Bury the dead and build tombs	Dead are cremated, so no tombs; cremation site is sometimes marked
Revealed religion from God	No single revelation; multiple texts, both "remembered" and told
Obligation to spread the faith	Cannot convert to Hinduism, rather one must be born a Hindu
Jihad: a holy war in which all must participate; struggle against evil in oneself as well as evil in the world, especially that which threatens Islam	Only one caste (<i>varna</i>) has military responsibility; this is the <i>kshatriya</i> caste; other castes try to practice noninjury to life (<i>Ahimsa</i>)
One law for all: Sharia based chiefly on the Koran and the <i>hadith</i> (traditions of the prophet)	Dharma governs all actions; each caste, gender, and age group has its appropriate dharma
Equality of all believers	Hierarchy: Society is divided into communities called <i>varna</i> , castes, or <i>jati</i> , ranked by purity and pollution
Mecca and Ka'ba as main pilgrimage site	Multiple pilgrimage sites all over India; any spot may become sacred
Worship is often communal, with set times for prayer	Worship is personal, involving care of images of the deity, meditation, and prayer
Men are circumcised	No circumcision
Individual goes to Heaven or Hell based on actions in this world	Reincarnation of the individual based on karma

Akbar's Attitudes toward Religion

Akbar was the third ruler of the Mughal Empire in India. He ruled from 1558 to 1603. Akbar and the other Mughal emperors were Muslims. The vast majority of the Indian subjects in the empire were Hindus.

In facing the challenge of ruling a multireligious state, Akbar appears to have been strongly influenced by Sufism. He regularly visited the tomb in Ajmir of a renowned Sufi saint, who had established the Chishti order in India at the end of the thirteenth century. In 1569, Akbar, who was childless, visited Sheikh Salim Chishti, a Sufi saint from the same order who was living in a hermitage in Sikri. Akbar wanted to get the saint's blessing, and he was gratified that the saint promised him three sons. Akbar's wife, who was a Hindu, soon became pregnant. When she was about to give birth a year later, the emperor sent her to the saint's hermitage. When the child was born, Akbar named the baby Salim, after the saint. He then ordered a new capital built at the small village of Sikri where Salim lived. He used Fatehpur Sikri as his capital from 1571 to 1584.

In 1578, at the age of thirty-six, Akbar was reportedly sickened by the slaughter of animals during a hunt. Calling off the hunt, he appeared to have had a religious experience very much like the Sufi sense of achieving oneness with God. That same year he began to invite learned Hindu, Parsi (followers of Zoroaster), Jain, and Christian scholars to debate religious issues with one another. He was so open and tolerant during these debates that the Jesuit missionaries who attended dared hope they might be able to convert the emperor.

Akbar also instituted a number of reforms intended to placate his Hindu subjects and make them more loyal to him. He showed his tolerance by allowing Salim's mother to worship a sacred tulsi tree she had placed in the center of her courtyard at Fatehpur Sikri. She also placed images of various Hindu deities in her courtyard walls. Many of Akbar's wives were Hindu, and while most of these marriages had been arranged for political purposes, their influence on him must have been considerable.

In 1562, Akbar abolished the practice of enslaving prisoners of war and their families and no longer made them convert to Islam. In 1563 he repealed the tax on pilgrims. The next year he did away with the humiliating tax on non-Muslims, making Hindus and Muslims equal.

Akbar also established a translation department and ordered scholars to translate the Hindu epics into Persian so that non-Hindus could come to understand and appreciate them. He encouraged the use of Hindi as well as Urdu and Persian at the court. He adopted a semivegetarian diet, meat only during a few months of the year. He forbade the consumption of beef and other red meat. If a Hindu had been converted to Islam in childhood, he was given the option of becoming Hindu again if he wished. He discouraged child marriage but encouraged voluntary marriages between Hindus and Muslims. He awarded jobs in his government on the basis of merit and service to him, and he also appointed Hindus to prominent positions. Out of 137 high officials (*mansabdars*), 14 were Hindu. He also allowed Christians to try to convert people in India.

In 1581, Akbar proclaimed himself the head of a new faith, which he called Din-i-Ilahi (Divine Faith). He proclaimed that it would include the best elements of Islam, Hinduism, Zoroastrianism, and Christianity. The next year he held a council whose purpose was to take the



best ideas from all these faiths and create that true religion, “not losing what is good in any one religion while gaining whatever is better in another.” He meant to have the scholars determine those “good things.”

Borrowing ideas from Zoroastrianism in creating his new faith, he tried to make the sun the center of worship, arguing that worshipping the sun was a means to worship Allah. When his subjects came into his presence, they cried out “Allah Akbar” which means “God is great,” but which can also be interpreted as “Akbar is God.” Picturing Akbar sitting at dawn in the public audience hall at Fatehpur Sikri as the rising sun fell on his face, we can almost hear him proclaim, “The very sight of kings has been held to be a part of divine worship. They have been styled conventionally the shadow of God, and indeed to behold them is a means of calling to mind the Creator, and suggests the protection of the Almighty.”

Din-i-Ilahi never materialized as an organized religion. Many of the leaders in his court may have feared that Akbar’s main motivation was neither tolerance nor religion, but an attempt to strengthen his own position as the unquestioned ruler of India. In addition, the *ulama*, that is, the Muslim religious leaders who were the guardians of Islamic law, objected to what appeared to them Akbar’s attempt to take over their authority. In addition, other groups that had come into the subcontinent had eventually been absorbed into Hindu society. The *ulama* feared that Akbar’s policies of religious tolerance might result in Islam meeting the same fate.

Emperor Aurangzeb's Attitudes toward Non-Muslims

When Aurangzeb became ruler of the Mughal Empire in 1658, Mughal India was still very much a multicultural society. Emperor Aurangzeb, like Akbar, had to decide what policy he would employ with the various groups of different faiths under his rule. Personally, Aurangzeb was a strict Muslim. He avoided pleasures of the senses, ate no animal food, and drank only water. Since the prophet Muhammad had said everyone should have a trade, Aurangzeb made skullcaps. He knew the Koran by heart and copied it twice. Although he could not make the pilgrimage to Mecca (hajj), he provided facilities for pilgrims.

The Indian Rajputs were the pick of the warrior class of India. It was up to Aurangzeb to decide whether he would invite them to serve him as loyal servants or treat them as his foe. Aurangzeb felt he had to curb any possibility that Rajput power would increase, as well as strive to keep the provincial governors from giving their prestige to their sons and trying to found competing dynasties. He may also have felt he should try to breathe new life into the Mughal army, whom many felt had become pale copies of the Muslim warriors who had originally invaded India in the early sixteenth century.

To Aurangzeb, Hinduism and the other sects, the religions of the majority of his subjects, were mischievous and idol-worshipping and should be stamped out. He employed a variety of methods, some of which are listed below:

- He suppressed music and dancing at court.
- He ordered the destruction of Hindu temples (1659).
- He banned the celebration of Hindu festivals.
- He ordered all provincial governors “to destroy with a willing hand the schools and temples of the infidels and put an entire stop to their religious practices and teaching” (1669).
- He reimposed the *jizya*, a tax that all non-Muslims had to pay personally, but not if one converted (1679).
- He gave converts to Islam special recognition and, sometimes, influential government jobs.
- He removed hundreds of Hindus from their government positions when they refused to convert.
- When there was a quarrel over land between a Muslim and non-Muslim, he decreed that the Muslim should get the non-Muslim's property.
- He reimposed the pilgrim tax.
- He proclaimed that Hindus should not dress like Muslims, nor ride a horse or elephant or be transported in a palanquin.

Bhakti and Sufi Poetry

Bhakti, a form of Hindu devotion, originated in South India almost two thousand years ago. Its followers emphasized the fundamental equality of all religions. Bhakti poets express devotion to God and use the metaphor of love as a means of experiencing oneness with divinity. Bhakti worshippers seek a personal, loving relationship to a particular god or goddess and give their devotion much as a lover would bring gifts to his or her beloved. They believe that the dignity of humans depend on their actions, not on their birth. They protest against religious formalities and ritualistic practices by priests. When Muslims came to the subcontinent, Bhakti worshippers advised their followers to respect other religions and live in peace and harmony with the Muslims.

Sufism was a reform movement within Islam that started in the eighth century as a reaction to the constant feuds between the Sunni and the Shia Muslims. It emphasizes toleration and universal brotherhood. Sufis believe that all humans are equal and all distinctions based on caste, color, and creed should be condemned. The Sufis seek a mystical union with God, achieved through intense devotion.

Many of the Muslims who first came to India were Sufi teachers. They impressed local Indians by their simple, austere, spiritual lives; their mystical devotion; their healing powers; and the many village ceremonies they performed. Devotees gathered around master Sufi teachers who instructed through parable, allegory, metaphor, and example. The tombs of Sufi saints became sacred sites to many Hindus and Muslims, who prayed at them in hopes that they would have children, recover from illness, or find relief from other hardships of everyday life.

The Indian poet Kabir was deeply influenced by both Hindu Bhakti poetry and Sufi mysticism. Born in the early fifteenth century into a Muslim family, Kabir taught that the path to divinity was neither Hindu nor Muslim. He tried to reconcile the teachings of both faiths. For example, he wrote:

O servant, where doest thou seek Me? Lo! I am beside thee
I am neither in temple nor in mosque;
Neither am I in rites and ceremonies, nor in Yoga and renunciation

Here are some Bhakti and Sufi poems. Which ones do you think were written by Sufi poets? Which by Bhakti poets?

A.

The Lover and the Beloved are in reality one;
Idle talkers speak of the Brahman as distinct from his idol.

B.

... Forget not
that the body contains the whole of existence.

**C.**

I love the Handsome One:

he had no death decay nor form no place or side

no end nor birthmarks

I love him, O mother. Listen

I love the Beautiful One with no bond nor fear no clan no land

no landmarks for his beauty.

So my lord, white as jasmine, is my husband. . . .

D.

Neither Hindu nor Mussalman, let us sit and spin, abandoning the pride of religion.

Neither Sunni nor Shi'a, I have taken the path of peace and unity.

Neither hungry nor full, neither naked nor clothed

Neither weeping nor laughing, neither exiled nor settled

Neither a sinner nor pure, I do not walk in the way of sin or virtue. Bullhe! In all hearts I feel the Lord,

So I have abandoned both Hindu and Muslim.

E.

When I grasped the hint of love,

I beat and drove out all senses of "I" and "You," Both my heart and vision became clear,

Now in whatsoever direction I look, I see only the Lord.

F.

Better than meeting

And mating all the time Is the pleasure of mating After being far apart.

When he's away

I cannot wait

To get a glimpse of him.

Friend, when will I have it both ways,

be with Him

yet not with Him,

my lord white as jasmine?

G.

O swarm of bees

O mango tree O moonlight O koilbird

I beg of you all one

favor:

If you should see my lord anywhere my lord white as jasmine

call out

and show him to me.

Identification key for teachers:

A–Sufi

B–Bhakti

C–Bhakti

D–Sufi

E–Sufi

F–Bhakti

G–Bhakti

Sources: A. Source unknown.

B. Gosain Gopal, qtd. in Deben Bhattacharya, trans., *Songs of the Bards of Bengal* (New York: Grove Press, 1969), 63.

C. A. K. Ramanujan, trans., *Speaking of Siva* (New York: Penguin Books, 1979), no. 283.

D. Bullhe Shah, qtd. in Ainslee Embree, *Sources of the Indian Tradition* (New York: Columbia University Press, 1988), 486.

E. Waris Shah, qtd. in Ainslee Embree, *Sources of the Indian Tradition* (New York: Columbia University Press, 1988), 487–8.

F. Mahadeviyakka, A. K. Ramanujan, trans., *Speaking of Siva* (New York: Penguin Books, 1979), no. 324.

G. Mahadeviyakka, A. K. Ramanujan, trans., *Speaking of Siva* (New York: Penguin Books, 1979), no. 74.

Guru Nanak and the Origin of Sikhism

By the fifteenth century, many of the Muslims living in India were observing caste distinctions, visiting Hindu temples, and adapting many Hindu customs and conventions associated with marriage and other events. The stage was set for the emergence of a faith that merged the principles common to Islam and Hinduism.

Like the Reformation in Europe, this Indian movement, known in history as Sikhism, was basically a protest against religious dogma, ritual, and intolerance. Its believers taught that personal ethics were the kernel of religion and that the form and place of worship were of little consequence. They also taught that Hinduism and Islam had the same basic values; only the terminology was different. They evolved a form of religious poetry with a vocabulary that borrowed liberally from the sacred texts of both Hindus and Muslims. These teachings had a spontaneity that appealed to the masses. The founder of the Sikh faith was Guru Nanak (1469–1539).

Guru Nanak was more concerned with spreading religious tolerance than with founding a new community. His teaching, however, fired the imagination of Punjab peasants, and even during his lifetime, a large group of followers gathered around him. At first, they were just known as his disciples (“shish” in Sanskrit). Sometime later, these disciples became a homogeneous people whose faith was based exclusively on the teachings of Nanak. The Shish became the “Sikhs.”

Guru Nanak was content to be a teacher. He laid no claims to divinity. He did not claim his writing to be prophecy nor his words to be a sacred message. His teaching was against insincerity and humbug, and his life was patterned after what he taught.

Guru Nanak ignored religious and caste distinctions and took as his associates a Muslim musician and a low-caste Hindu. He personally went to the Hindu places of pilgrimage and demonstrated to worshippers the absurdity of these rituals. Likewise, he went on a pilgrimage to Muslim shrines and reprimanded religious leaders who transgressed the injunctions of the Qur'an. He was acclaimed by both communities, and on his death both clamored for his body—the Muslims wanting to bury him and the Hindus wanting to cremate him. Even today, he is regarded as a symbol of harmony between Hindus and Muslims.

In fifty years of travel and teaching, Guru Nanak had attracted followers who primarily dissented from both Hinduism and Islam. It was left to his successors to mold this group into a community with its own language, literature, institutions, and traditions.

Source: Adapted from the introduction to Khushwant Singh, *Jupji, the Sikh Prayer* (London: Royal Indian, Pakistan, and Ceylon Society, 1952), 1–23.

Sikhs Move from Integration to Defensive Separatism

Instead of bringing Indians into the Muslim fold, Aurangzeb's policy of persecution and intimidation of non-Muslims made many of them more militant. Lucille Schulberg, author of *Historic India*, suggests that in the face of a less tolerant religious policy, "most Hindus responded to the alien force with what is called ghetto psychology: they burrowed deeper into their Hinduism." Mystical communities, once intent on loving devotion to God, became militant counter-forces, interested in revenge for past persecution rather than peaceful coexistence. Changes in the Sikh community offers the most obvious example of this transformation.

When Guru Nanak died in 1539, his successor became the Second Guru. By 1658, there had been nine gurus. When Aurangzeb instituted a policy of forced conversions in Kashmir in 1675, Hindus were given the choice of conversion to Islam or death. After several thousand had been killed, a delegation of Kashmiri Hindus went to the Ninth Guru, Tegh Bahadur, and asked him for help.

When Guru Tegh Bahadur tried to protect the Hindus, the Mughal authorities arrested him, and when he would not convert to Islam, they tortured and beheaded him. Hindus regarded his execution as a sacrifice for their faith because he invited it, knowing he would be killed if he did not convert. He offered his life for people who were not members of his own community.

The transformation of the Sikh community into a militant group was a direct outgrowth of Tegh Bahadur's martyrdom. Guru Gobind Singh, Tegh Bahadur's nine-year-old son who became the Tenth Guru, swore to avenge his father's death. Guru Gobind Singh stated: "I shall make men of all four castes into lions and destroy the Mughals."

In 1699, Guru Gobind Singh told a crowd of faithful followers: "My sword wants today a head. Let any one of my true Sikhs come forward. Isn't there a Sikh of mine who would sacrifice his life for his Guru and the dharma (right action)?" At first, his words numbed the audience. Finally, five men came forward and he took each man into the tent; returning a few minutes later, he displayed his sword dripping with blood. Soon the Guru came before the crowd with all five men, whom he had not really killed. Instead, he baptized them into his new brotherhood, the order of the Khalsa, meaning God's Own. Each was reborn—from jackals to lions, from sparrows to hawks—and given the surname "Singh," meaning lion.



Guru Nanak (1469–1539).



Each was to wear the five emblems:

- kasha—long hair and beard
- kangha—a comb to keep the hair tidy
- kara—a steel bracelet
- kachh—short breeches worn by soldiers
- kirpan—a sword

They were also to abstain from tobacco and alcohol and not eat kosher meat.

Every Sikh youth is initiated into the Khalsa and the suffix “Singh” is attached to his name. Thereafter, he has no caste save one, the fraternity of the Khalsa.

When his followers said, “They’ll laugh if we leave our hair long,” Guru Gobind Singh replied: “Then carry a sword and use it if they laugh.” Members of the Khalsa, which he opened to all Sikhs, were to help the helpless, fight the oppressor, have faith in the one God, and consider all humans equal, irrespective of caste and creed. They were to be ready to protect their faith and the faithful, by the sword when necessary.

Source: Adapted from “Sikh Saints,” Sikh World. <http://www.sikhworld.co.uk/page12.html>.

LESSON 5

Islam Spreads in Southeast Asia

Preparation

Review with students the trading patterns in the Indian Ocean imposed by the monsoon winds. Review how merchants created far-flung trading communities as they waited for the winds to reverse course. Review with students their understanding of the kinds of exchanges taking place in the Indian Ocean since 2000 BCE. Explain why ports such as Malacca became critically important in the Indian Ocean trading network.

Assign students to read the relevant sections of their textbook on Southeast Asia during the period 1500–1800 CE.

Introduction

This lesson moves to Southeast Asia and focuses on the role of Islam in that area. Review with students any earlier study of Southeast Asia they may have had. Highlight the Buddhist-Hindu influences in Cambodia and the islands that make up present-day Indonesia. Stress the synthesis of local forms with imported beliefs and practices and the way that the princely courts used Hinduism and Buddhism to promote the ruler's legitimacy.

If necessary, review the role of Hinduism in India and the major differences between Hinduism and Islam discussed in Lesson 4. Introduce the idea that Islam came to Southeast Asia from South Asia, so it was already influenced by Buddhism and Hinduism. Review Sufism from the earlier readings in Lesson 4 or give students some background on Sufism.

Activities

1. Divide students into pairs and give them Student Handout 6.5.1. Have them trace the progress of Islam through Southeast Asia on the map, locating the ports, cities, and areas indicated in the reading. This assignment can be given as homework at the start of the lesson. Have students share their maps.
2. Using Student Handout 6.5.2, help students identify examples of Islamization. Highlight the difference between Islamization and personal conversion, and compare Islamization with Christian efforts at conversion in other parts of the world. Discuss possible reasons why leaders in port cities in Southeast Asia were receptive to Islam.
3. Distribute Student Handout 6.5.3. Assign students to identify the various reasons Islam successfully spread to the region. Discuss the difference between a “unifying rather than a uniform faith.”
4. Give a brief introduction to the Indian epic the Mahabharata, stressing that it concerns a conflict between cousins in which both sides feel they have the right to rule. Introduce Southeast Asian shadow puppets (*wayang*), and stress how popular they have been for

centuries. Discuss Student Handout 6.5.4 with students and help them identify ways in which *wayang* performances could address current issues or offer veiled criticism of the government. How did performances incorporate Islamic ideas into the performance of a Hindu epic? Have students speculate on why the clowns became so important.

5. Referring to the “conversion spectrum” introduced in the Historical Context for this chapter, ask students where on the spectrum Islam in Southeast Asia falls. Based on the evidence presented in the readings, have students discuss Islam’s adaptation in Indonesia. How does its reception in Southeast Asia compare with the ways Islam spread in the Indian subcontinent?
6. For homework, assign students to create a scene, either from the Mahabharata or some other story, using clowns or other humorous characters to reveal or comment on contemporary issues, such as the teacher giving too much homework or some school rule that the student feels is unfair. The clowns might also surreptitiously evaluate the teacher or school. Note that a sample episode from the Mahabharata is included at the end of Student Handout 6.5.3.

Assessment

1. Assign students to write an essay comparing the spread of Islam to India and to Southeast Asia.
2. Have the class explore how architecture in India and Southeast Asia symbolizes the synthesis of Islam and local religions in each society. Small groups might work on a single architectural monument and make it part of a larger art exhibit on the adaptation of Islam to Asia. Some examples might be:

India

- Taj Mahal
- Audience Hall at Fatepuhr Sikri
- Humayun’s tomb
- Agra Fort
- Red Fort in Delhi

Indonesia

- Prambanan Temple
- Grand Mosque of Medan
- Pagaruyung Palace
- Banda Aceh’s Grand Mosque

Outline Map of Southeast Asia



Islam Spreads through Southeast Asia

The spread of Islam in Southeast Asia was largely peaceful and voluntary. Through the area, Muslim merchants, sailors, and Sufi teachers brought their faith to the urban entrepôts along the coast of Sumatra and the northern coast of Java. Islamization and urbanization went hand-in-hand as new trading cities sprang up on both the mainland and the archipelago.

By 1500 there was a significant Islamic presence along the coasts of Sumatra, Malaysia, and Java, and during the next century-and-a-half, the new faith moved inland. Under the rule of the central kingdom of Majapahit, which the Javanese consider their golden age, the kings had remained steadfastly Hindu-Buddhist. However, after Javanese Muslims conquered Majapahit in 1527, the spread of Islam to the interior accelerated.

Although political and economic factors contributed to the spread of Islam in Southeast Asia, its acceptance in the region, as in the Indian subcontinent, was largely due to Sufi mystics and the way that the Sufi brand of Islam resonated with local, particularly Javanese, mysticism.

By 1600, Makasar, a major trading city in eastern Indonesia, had mushroomed from a small village into an urban center of some fifty thousand people. A Dutch observer wrote in 1607 of a city where “goats, buffaloes, and pigs abound ...[and] where women walk naked above the waist.”¹ Only forty years later, another visitor wrote that in Manaskara “there were no hogs” and “the women are entirely covered from head to foot, in such fashion that not even their faces can be seen.”² Clearly ritual aspects of Islamization, in the short span of forty-seven years, had taken hold among these local people. However, in many ways, “the old culture grew and lived on in a more- or-less Islamic garb.”

On a deeper level, the process of Islamization was far slower and took many generations. Mystical Sufi Islam, especially in Java, gradually blended with the existing Hindu-Buddhist mystical traditions. In this process, the local elite would adopt Islamic rituals and practices such as burial customs, circumcision, ritual prayers, the hajj, and certain dietary restrictions, but also maintain their earlier beliefs in spirits, and especially their reverence for Ratu Kidul, the goddess of the Southern Ocean, a decidedly non-Islamic belief. At the same time, as the Javanese and other indigenous groups were experiencing a process of Islamization, Arab and other foreign Muslims living in the ports were going through a process of Javanization. These dual processes resulted in an amalgamation of the identities: The Javanese thought of themselves as both Javanese and Muslim.

1. Anthony Reid, *Charting the Shape of Early Southeast Asia* (Bangkok, Thailand: Silkworm Books, 1999), 25.

2. Ibid.



Mataram in central Java, one of the strongest states during the late sixteenth and seventeenth centuries, exemplifies the blending of indigenous and Islamic beliefs. Senapati (1584–1601), the first Mataram ruler, is said to have spent three days before he began to rule in Ratu Kidul’s underwater palace. Sultan Agung (1613–1645), the most famous Mataram ruler, made a pilgrimage to the burial site of a *wali* (one of the Muslim holy men who are believed to have Java) probably to “harness to his purpose the supernatural powers of Islam.”³ . . . When he revised the calendar, he adopted the Muslim year of 354–55 days but retained the existing Javanese starting date. This slow process of Islamization reached its height in Southeast Asia between 1550 and 1650.

Source: Qtd. from Donald Johnson, “Rethinking the Rise of European Hegemony: Asia in World History, 1450–1750,” *Education about Asia* 12 (Spring 2007): 20–1.

3. M. C. Ricklefs, “Six Centuries of Islamization in Java,” in Nehemia Levtzion, *Conversion to Islam* (New York: Holmes & Meier, 1979), 105.

Why Did Islam Spread through Southeast Asia?

Many factors contributed to the spread of Islam in Southeast Asia. Geography, trade, and history all contributed to the development of unique forms of the faith in this area.

The pattern of the monsoons, the regular winds that seasonally blow northeast and then southwest, facilitated trade, and Southeast Asia was an integral part of the active commerce among areas in West, South and East Asia. The Strait of Malacca was a critical avenue, and Malacca and ports on the island of Sumatra were particularly active.

The monsoons brought not only traders from West Asia and India to Southeast Asia, but the pattern of the winds meant that traders had to wait for the reverse monsoons to return home. As a result, they developed diaspora communities in the ports where they traded, and many of them permanently settled in these areas. Local people interacted with these merchants, learning about life and beliefs in their home countries.

For centuries, Muslims, whether from West Asia or South Asia, were major traders in the Indian Ocean. This was true, in part, because Muslim attitudes are supportive of commerce as the following quote suggests:

Islam is a portable, legalistic faith, attractive to and suitable for merchants. Islamic values . . . placed honest merchants beside martyrs in the faith. Commerce and even specifically maritime trade enjoyed prestige in the Qur'an and *hadith* literature. . . . Rituals (everything from the avoidance of pork to the *hajj*), social regulations such as those governing marriage and inheritance, and architectural expressions epitomized by the mosque all drew longtime and convert Muslims together, despite their disparate backgrounds. The law called upon Muslims to avoid imposing interest and to favor coreligionists. . . . Arabic, the language of the Qur'an, had some degree of impact everywhere Muslims settled. . . . The success of Muslims attracted—even sometimes economically necessitated—conversion. Thus, success encouraged the further spread of a unifying, though not uniform, culture.

Source: Patricia Risso, *Merchants and Faith: Muslim Commerce and Culture in the Indian Ocean* (Boulder, CO: Westview Press, 1995), 104–5.

Many of the merchants traveling to and from ports in Southeast Asia were in repeated contact with Islamic centers such as Mecca and Medina as well as the Mughal court in India. This contact kept them apprised of the tenets and rituals of their faith. These traders shared not only their goods but also their customs and beliefs.

The psychic power of Sufi teachers resonated with earlier beliefs. People began to link the power associated with Sufi saints with their belief in the power of ancestor spirits and the charismatic power of certain individuals. Further, the graves of Muslim saints as well as ancestral graves became important pilgrimage sites. On the political level, the Islamic idea of the king as “shadow of God” fit well with Javanese belief that the king was an incarnation of the Buddha or Siva.

History also influenced the development of Islam in this area of the world. Indigenous beliefs, as well as the influence of Hinduism and Buddhism, affected the forms Islam took in different areas. The earliest settlers in Southeast Asia revered their ancestors, mountains,

and sacred spirits, especially serpents. They believed that legitimate rulers were “big men,” who had a special spiritual ability to guarantee the well-being of their subjects by ensuring that the rains came and the sun shone.

Starting in the Common Era, Hinduism and Buddhism had spread from the Indian subcontinent to ports in the western part of the archipelago. Hindu-Buddhist ideas influenced life in the courts and among the rulers, and stories about the Hindu gods and goddesses and the two main Hindu epics—the Ramayana and the Mahabharata—became popular. Information about Hindu mystical teachings and the power Indian holy men were reported to have seemed impressive. Bhakti, a devotion form of Hinduism that focuses on the worshiper’s union with the divine, spread as well.

Muslim traders coming from West Asia brought Sufi mystics from India to the archipelago. Sufi Islam also focuses on a believer’s inner faith, and its followers emphasized the mystical union of the believer and God (Allah). Sufis rejected the Indian concept of reincarnation, the caste system, and the Buddhist denial of the existence of the soul, but they accepted many Indian practices, such as the miraculous powers of yoga, the rosary, and breath-control exercises. Instead of attacking the existing beliefs or trying to impose their faith on others, these devout holy men sang moving poetry and stressed one’s internal quest for union with the divine.

The fact that this message struck a familiar chord with existing beliefs helped Islam spread throughout both mainland and island Southeast Asia. As early as the start of the Common Era, the ruling elites had successfully incorporated Hindu and Buddhist religious concepts and practices with their local beliefs and rituals. Hindu deities, such as Shiva and Vishnu, as well as the Goddess of the Southern Ocean, were especially popular, as were the Hindu epics. And ancestral spirits were believed to intervene in the lives of the living.

Material considerations contributed to the spread of Islam in the region. Merchants, many of whom were Muslims who were in direct contact with Mecca and other important West Asian centers of Islam, played an important role in the spread of Islam in the coastal ports. Local political leaders and merchants may have recognized the advantages of aligning themselves with the prosperous Muslims. Malacca, commanding the strait between Sumatra and the Malay Peninsula, is a case in point. Its initial ruler was a prince from Palembang in Sumatra, who had counted on Chinese support for his reign. However, in 1433, when the Ming decided to reduce their overseas presence and end the voyages of their “treasure” ships, he recognized the futility of expecting Chinese aid. Instead, perhaps in an effort to attract Muslim merchants to his port, he converted to Islam. After the Portuguese conquered Malacca in 1511, many Muslim merchants sought other ports in the Java Sea and western part of the archipelago. In addition, new ports had less connection with earlier, well-established beliefs. Further, local rulers, hoping to increase their power, were not adverse to using Islam to rally their subjects against the Europeans, who often supported one local ruler or another.

In Southeast Asia, information about Islam spread relatively quickly from merchants to others in the ports and from there to the local people. In India, conversion to Islam implied a loss of caste, isolating the convert from his community. Southeast Asia had not adopted the Indian caste system, so adapting Muslim practices did not present this obstacle. In addition, the Javanese



continued to follow many of their earlier customs, including veneration of saints and graves and searching for magical powers.

Another reason for the spread of Islam may have been that the Hindu-Buddhist beliefs and practices had thrived mainly in the courts, but had had little effect on the average person. In Java, as the Majapahit rulers in the central part of the island weakened after 1400, there was no longer an effective government that patronized Hinduism and sponsored Hindu rituals, and no government that tried to discourage adaptation of Islam.

Instead, local rulers, especially in some of the major port cities along the northern coast of Java, used the faith as a rallying call to support their efforts to extend the areas they controlled, as had happened already in Aceh on Sumatra. If they were successful, they promoted Islam. In addition, once Europeans began posing a threat, local rulers also used the faith as a vehicle for rallying opposition to the Portuguese, Dutch, and British colonialists.

The *hajj* (pilgrimage to Mecca) also played an important role in the spread of the faith. Making the *hajj* fundamentally changed people's lives and impressed them with the vast sweep of Islam and its importance in many areas of the world. Muslims who made the *hajj* brought Islam to the various areas through which they traveled, connecting local people with the wider world of Dar al-Islam.

Source: Adapted from Donald Johnson, "Rethinking the Rise of European Hegemony: Asia in World History, 1450–1750," *Education about Asia* 12 (Spring 2007): 17–22.

How Does a Hindu Epic Reflect Muslim Beliefs?

Shadow puppet performances, called *wayang*, have had a long history in Southeast Asia, where they are still extremely important, especially in Thailand and Indonesia. These performances often portray episodes from the Hindu epics, the Ramayana and Mahabharata. *Wayang* performances give viewers an intimate, if fictional, view of how the kings lived. Rulers were especially fond of performances of the Ramayana, which focused on the ideal king.

Even more popular have been performances of the Mahabharata, the vast storehouse of stories collected around the great war between cousin families, the Pandavas and the Kauravas, over the question of who had the right to rule. *Wayang* performances repeatedly feature scenes of the great battle, the central event in the epic. The puppeteer could suggest that the feuding cousins represent the court against its enemies.

Indonesian puppeteers introduced several new characters into the performances. For example, the clown characters were a totally new, Southeast Asian addition to the Mahabharata performances. They illustrate how Islamic motifs were added and how they transformed the original story.

These humorous, ridiculous-looking clowns, who bawdily banter back and forth, are supposed to be servants of the Pandavas and Kurawas. In the course of the performances, they often make local gossip or comment on disputes and scandals or on Islam. They also make thinly veiled criticism of public figures.

Semar is perhaps the most important character in the Indonesian *wayang* Mahabharata, and he represents the coincidence of opposites. He not only serves Arjuna, the major Pandava, but he is also his mystical guide. As a servant, he is inferior to Arjuna, but as a mystic, he is superior and must be given the utmost respect. Semar's appearance is also ambiguous: He is short, fat, ill-mannered, crude, and has both female and male characteristics. He speaks in Low Javanese, belches, passes gas, and makes off-color jokes about kings and nobles. The following quote suggests how Semar and the *wayang* Mahabharata performances offer examples of how Islam in Indonesia incorporated many non-Islamic elements:

Owning to his coarse character, Semar is often associated with the peasantry. Peasants and the urban poor believe him to be one of their own and to represent the "real" Javanese culture, as opposed to the artificially refined culture of the court. Many upper-class and noble Javanese see Semar as a representation of the romanticized simplicity of rural life, which they view (incorrectly) as being free of concern and worry. Members of both groups believe him to be the original guardian spirit of the island and, as such, to be more concerned with the problems and dealings of the Javanese than the "imported" Hindu and Muslim deities. However, when Semar is viewed from the perspective of the Javanese identification of the social hierarchy with the Sufi mystical path, he is interpreted as a personification of the mystical and social dimensions of the doctrine of the union of servant and lord, and the unity of humanity with respect to Allah . . .



Semar's unique position in Javanese mysticism derives from the fact that he transcends the social order, which is viewed as an integral part of the mystical path. He is "beyond" even such basic human characteristics as gender. His coarse nature is not a consequence of ignorance of polite behavior (which is said to be true of peasants) but of mystical attainment. Semar represents perfection of humanity and transcends social conventions in exactly the same sense that mystics transcend the *Shari'a* (Islamic law). He assumes the form of a servant because, with respect to Allah, all other beings in the cosmos are servants.

It is also for this reason that Semar is the ideal spiritual guide for kings. He is a teacher, and in that sense a superior, but does not challenge the king's social or political position because he has totally transcended the human condition . . . Semar could be Arjuna's teacher because only he would not wish to become king in his place.

Source: Mark Woodward, *Islam in Java: Normative Piety and Mysticism in the Sultanate of Yogyakarta* (Tucson: University of Arizona Press, 1989), 234.

The *wayang* not only adds Muslim characters and imparts information about Islam; it has all but transformed the whole epic into an expression of Sufi mysticism.

What is remarkable is not the fact that traces of the Hindu past have endured, but the degree to which they have been Islamicized. These aspects of contemporary (and historical) Javanese religion are the product of a sophisticated, intensely intellectual attempt to harmonize two very different religious traditions.

In this respect, Javanese Islam can be called syncretic. But it is a syncretism in which Muslim, and more specifically Sufi, elements predominate.

Source: Mark Woodward, *Islam in Java: Normative Piety and Mysticism in the Sultanate of Yogyakarta* (Tucson: University of Arizona Press, 1989), 242.

The unique transformation of the Mahabharata in the Javanese *wayang* is one reason that scholars have suggested that Javanese Islam "is among the most dynamic and creative intellectual and spiritual traditions in the Muslim world."

Source: Mark Woodward, *Islam in Java: Normative Piety and Mysticism in the Sultanate of Yogyakarta* (Tucson: University of Arizona Press, 1989), 242.

Glossary

Afroeurasia: The land masses of Africa and Eurasia, together with adjacent islands, as a single spatial entity. The concept of Afroeurasia is useful in the study of both historical and contemporary social phenomena whose full geographical contexts overlap in one way or another the conventionally defined continents of Africa, Asia, and Europe.

agrarian society: A society where agriculture, including both crop production and animal breeding, is the foundation of both subsistence and surplus wealth. To be distinguished from hunter-forager and pastoral nomadic societies.

agriculture: The intentional cultivation of domesticated plants and animals. Beginning about twelve thousand years ago, the development of agriculture permitted unprecedented growth of human population and the emergence of towns, cities, and the centralized state. Scholars generally agree that agricultural economies developed in several parts of Afroeurasia and the Americas independently of one another.

Amerindian: A member of any of the native populations of the Americas; an American Indian or Native American.

archaeologist: A professional scholar in a branch of anthropology that documents similarities, differences, and change among various human societies of the past. Archaeologists work with the material (physical) remains of societies. Their work provides the major source of information available on societies that did not have writing systems. Archaeologists also provide evidence that supplements written sources.

barter: The mutual transfer of goods or services not involving the exchange of money. Used as the common form of exchange before the invention of currency. The practice of bartering continues to one degree or another in all modern societies.

belief system: A combination of ideas, values, and practices that serve a society's cultural needs. Belief systems include all religions, as well as philosophical, ethical, and moral systems.

Black Death: An infectious disease pandemic that spread from Inner Eurasia to China, the Mediterranean basin, and Europe in the mid-fourteenth century. The pandemic may have taken the lives of a quarter to a third of the populations of Europe, North Africa, and Southwest Asia. Scholars have conventionally attributed the pestilence to the infectious microorganism *Yersinia pestis*, which causes plague in both bubonic and pneumonic forms. Recent research, however, has challenged this theory, arguing that modern plague and the disease causing the Black Death are not identical.

bourgeoisie: Literally, people of the bourg, or town. Men and women of the middle class, the mostly urban, affluent, business-oriented class. Historically, this group was situated socially between the landowning, aristocratic ruling class and the common population.

cartographer: A person who designs or constructs maps or charts.

civilization: See *complex society*.

clan: A form of social and political organization in which the fundamental principle of solidarity is kinship. Clans typically constitute two or more kinship groups within a tribe. Clan organization is common among pastoral nomadic and stateless societies.

collective learning: The view that the human species has a unique capacity to accumulate and share complex knowledge and to transmit this knowledge from one generation to the next.

colonialism: The systematic exercise of political and military authority of an intrusive group of foreign origin over the population of a given territory. Often involves the colonizer asserting social and cultural domination of the indigenous population.

Columbian Exchange: The transoceanic transmission of plants, animals, microorganisms, and people that followed the establishment of regular contact between Afroeurasia and the Americas in the late fifteenth and the sixteenth centuries. Because life-forms evolved separately in the Eastern and Western hemispheres for millions of years, these transmissions had far-reaching biological, economic, cultural, and social effects on both American and Afroeurasian societies.

commercial diaspora: A network of merchants of common origin and shared cultural identity who lived as aliens in foreign towns to serve as agents and cross-cultural brokers for fellow merchants who moved along the trade routes connecting these towns. Examples are the ancient commercial diaspora of the Phoenicians and the medieval diaspora of Jewish merchants in the Mediterranean Sea and Indian Ocean. Also trade diaspora. See *diaspora*.

complex society: A type of society characterized by all or most of the following features: dense population, agricultural economy, cities, complex social hierarchy, complex occupational specialization, centralized state, monumental building, a writing system, and a dominant belief system. To be distinguished generally from hunter-forager, pastoral nomadic, and small-scale agricultural societies. Also civilization.

constitution: The fundamental laws, either written or unwritten, of a political body or state.

demography: The study of the size, growth, density, and other characteristics of human populations.

diaspora: The scattering of a people of distinct regional, ethnic, or religious identity from the original homeland to other parts of the world. A diaspora may result from either voluntary or forced migration. Examples include the Jewish diaspora and the dispersion of people of African descent to the Americas and other regions as a result of slave trade. See *commercial diaspora*.

divine right: The theory that the legitimacy of a monarch or other head of state derives from God or other supernatural power. Contrasts with the modern theory that political sovereignty is determined by the will of the people.

domestication: The process whereby humans changed the genetic makeup of plants and animals by influencing the way they reproduced, thereby making them more appealing in taste, size, and nutrition, as well as easier to grow, process, and cook. Humans could not invent new plant species, but they could select plants that possessed certain observable mutations, that is, characteristics that made them desirable. Farmers could tend these mutants in ways that ensured their survival. The domestication of animals through selective breeding followed a similar process.

ecology: The aspect of biology concerned with the relations between organisms and their environment.

endemic: Prevalent in or peculiar to a certain area, region, or people—as an infectious disease.

entrepôt: A city whose commercial activity includes the transshipment or distribution of trade goods.

entrepreneur: An individual who organizes, runs, and takes responsibility of a business or other enterprise; a business person; an employer; from the French verb *entreprendre*, meaning “to undertake” some task.

epidemic: An outbreak of contagious disease affecting a significant portion of the population of a locality. See also *pandemic*.

extensification: “An increase in the range of humans without any parallel increase in the average size or density of human communities, and consequently with little increase in the complexity of human societies. It involves the gradual movement of small groups into new lands, usually adjacent to and similar to those they have left” (David Christian, *Maps of Time: An Introduction to Big History* [Berkeley: University of California Press, 2004], 190). Processes of extensification were characteristic of the Paleolithic era in world history. See also *intensification*.

farming: The process of growing and harvesting domesticated plants and animals for food, fiber, and other commodities. Farming is characteristic of agrarian societies.

Fertile Crescent: An arc of cultivable land characterized by wooded hillsides and alluvial valleys which runs northwestward along the Zagros Mountains of Iran, loops around the northern rim of the Syrian Desert, and extends southward parallel to the eastern shore of the Mediterranean. The Tigris-Euphrates and Jordan river valleys are also conventionally considered part of the Fertile Crescent. The earliest physical traces of farming settlements in the world are located in this region. The American scholar James Harvey Breasted invented the term in 1916.

globalization: The process by which peoples around the world have become increasingly interconnected through rapid communication and transport. Globalization involves the intensification of economic, social, cultural, political, and biological interchange worldwide, resulting on the one hand in a general acceleration of change and on the other in efforts to strengthen the bonds of identity and community on the local and regional levels.

government: An organization having the power to make and enforce laws and to maintain social order over a territory or a group of people. A government may regulate society through a consensus of leaders, through democratic elections and decision making, or through authoritarian force. In a state, the government is the central decision-making authority.

Great Arid Zone: The belt of arid and semiarid land that extends generally northeastward across Afroeurasia from the Sahara Desert in the west to Manchuria (northern China) in the east. The Great Arid Zone has been home to both pastoral nomadic communities and to farming societies where water from rivers, wells, and periodic rainfall is available. In addition to the Sahara, the large deserts of the Great Arid Zone include the Arabian Desert, the Great Indian Desert, the Takla Makan Desert, and the Gobi Desert.

Great Dying: 1. An extinction event that occurred about 250 million years ago and that wiped out many marine and land species. 2. The massive die-off of American Indian peoples that followed contact with humans from Afroeurasia beginning in the late fifteenth century. This mortality, which in some areas may have reduced populations by 90 percent, followed the introduction from Afroeurasia of infectious disease microorganisms for which American Indians lacked immunities. Warfare, enslavement, and social disorder associated with European conquests in the Americas also contributed to high mortality. Only in the seventeenth century did indigenous populations begin partly to recover.

hajj: The Arabic term for the formal pilgrimage to the city of Mecca undertaken by Muslims as a religious duty. Islamic teaching enjoins Muslims to make the hajj at least once in their lifetime if they are physically and financially able.

hegemony: The dominance or preponderant influence of one state or group over others. Hegemony may take military, political, economic, or cultural forms. Also “hegemonic,” as in “hegemonic power.”

hunter-gatherers: Also hunter-foragers. Humans that rely on naturally occurring sources of food, obtained by scavenging, gathering, or hunting. Because hunter-gatherers require much more extensive land areas from which to secure food than do farmers or stock-raisers, their communities have necessarily been small. Hunter-gatherer communities were the exclusive form of human economic and social organization until the emergence of farming about twelve thousand years ago. Today, hunter-gatherer groups account for only a tiny percent of the human population.

indentured servant: A person who has contracted to perform labor for another for a specified period of time; an institution commonly used to acquire labor for service in European colonies in the Americas between the sixteenth and eighteenth centuries; the “indenture,” a form of contract, often included a provision to transport the laborer to the place of service free of charge.

Inner Eurasia: The huge interior land mass of Eurasia, whose dominant features are flat, semiarid regions of steppe and forest. Inner Eurasia generally corresponds to the territories

ruled by the Soviet Union before its collapse, together with Mongolia and parts of western China. Poland and Hungary to the west and Manchuria (northeastern China) to the east may be thought of as Inner Eurasia's borderlands. The northern margins are boreal forest and Arctic tundra. To the south are the Black and Caspian seas and the Himalayas and other mountain ranges. A mountain-free corridor connects Inner Eurasia to Iran.

intensification: “New technologies and lifeways that enabled humans to extract more resources from a given land area” (David Christian, *Maps of Time: An Introduction to Big History* [Berkeley: University of California Press, 2004], 207). Intensification is associated with the emergence of agriculture about twelve thousand years ago and with the subsequent unprecedented increase in the size and density of human populations in some regions. See also *extensification*.

khan: The title of a Turkic or Mongol tribal leader; a common title of sovereigns in Inner Eurasia. The feminine form is khatun, typically carried by wives and daughters of khans.

life expectancy: The probable life span, or the expected age at death, of an individual; a statistical determination of the probable life span of an individual or category of persons.

lineage: A form of social and political organization in which the fundamental principle of solidarity is kinship. A lineage is typically a local kinship group of several generations, both living and deceased individuals. Several lineages may constitute a clan.

logographic writing system: A system of writing in which signs, or characters, represent meanings rather than the sounds of speech, as in an alphabetic writing. In logographic systems a single character may represent an entire word or phrase. Chinese is the most widely used logographic system today.

Mecca: A city in the western Arabian Peninsula and birthplace of Muhammad, the Prophet of Islam, in the seventh century CE. Although Mecca never became a large city, it is Islam's holiest center and the principal destination of Muslim pilgrims making the hajj.

Mesoamerica: The part of North America that includes modern Mexico and the states of Central America. Mesoamerican civilizations included the Olmec, Oaxacan, Teotihuacan, Maya, Toltec, and Aztec. The combining word “mesos,” meaning “middle,” is from the Greek.

mestizo: A person of mixed Spanish and Native American ancestry.

monotheism: The doctrine or belief that there is one God.

monsoon: A rainy season that endures for several months in a particular region. The term also typically refers to the seasonal winds that dominate the Indian Ocean basin. These winds blow generally from southwest to northeast in the summer months (April to October) and from the northeast to the southwest in the winter months (November to March). For thousands of years, knowledge of the monsoon wind cycle has allowed mariners to sail from one part of the Indian Ocean to another with fair speed and predictability.

nation: A community of people who believe they share a common culture, history, and future destiny. The members of the nation typically believe that they share rights, including the right to occupy a territory and to constitute a sovereign government to rule that territory.

nation-state: A sovereign state that generally coincides with, or aspires to coincide with, a single national community or nation. A state, on the other hand, may also be multinational (for example, an empire).

nationalism: The modern ideology based on the principle that an individual's loyalty and dedication to the national community or nation-state surpasses loyalty to any other group interest. The scholar Benedict Anderson characterized the national community as an "imagined community": Its members do not for the most part know one another but nonetheless have common bonds of aspiration and loyalty.

natural philosophy: The study of nature and the physical universe. The intellectual discipline that prefigured modern science.

pagoda: A typically multistoried memorial structure built in connection with a temple or monastery, usually Buddhist.

paleontologist: An expert on animal life of the distant past, studied mainly from evidence of fossilized remains.

pandemic: An outbreak of contagious disease that is not confined to a single locality but spreads from one locality to the next, possibly over a great distance. The Black Death of the mid-fourteenth century was a pandemic that reached across Afroeurasia. The influenza pandemic of 1918 was worldwide. See also *epidemic*.

patriarchy: A society in which males are socially and politically dominant over women. All complex societies have been more or less patriarchal, though since the nineteenth century women have in many parts of the world gained legal and civil rights that have helped to constrain patriarchal attitudes and behaviors.

Pax Mongolica: Mongol Peace; the period from approximately 1260 to 1350 when Mongol states maintained order in a large part of Eurasia and when commercial and cultural exchange across Afroeurasia intensified.

periodization: In the study of history, periodization is the dividing or categorizing of time into separate sections. Historians periodize the past for a number of reasons. "One is simply to identify and isolate chunks of time in order to study them one by one, since all periods cannot be studied simultaneously. A second is to distinguish one cluster of interrelated historical events from another in order to discover patterns of change. A third is to identify significant shifts in those patterns in terms of discontinuities or turning points, which serve as the start and end of periods. A fourth is to highlight trends or events that appear dominant or important during a particular span of time" (Ross E. Dunn, ed., *The New World History: A Teacher's Companion* [Boston: Bedford St. Martin's, 2000], 359.)

populism: A political or social ideology emphasizing advancement of the rights and interests of common people. From the Latin word *populus*, the people.

pre-Columbian America: The period of North and South American history before Christopher Columbus initiated sustained intercommunication between the Americas and Afroeurasia; history of the Western Hemisphere up to 1492; sometimes labeled the pre-contact period.

primary and secondary sources: Primary sources are items of historical evidence, including both written documents (legal contracts, government papers, personal letters, bills of sale, biographies) and artifacts (material objects, works of art, elements of language) that were generated during or relatively close to the historical period being studied. Secondary sources are documents—mainly books, articles, and illustrations—based on primary sources and generated some time after the historical event they describe or interpret.

primates: The order of mammals that are large-brained, live mostly in trees, and have the ability to see three-dimensionally. This order includes humans, all hominids, apes, chimpanzees, and monkeys.

protectionism: An economic philosophy or policy advocating government protection of domestic agriculture and industries from foreign competition by institution of tariffs, quotas, or other restrictions on foreign imports.

revolution: A drastic change in a political system, institution, condition, or idea. A revolution may be political, social, economic, or cultural.

secularism: Pertaining to worldly, as opposed to supernatural or religious, beliefs, values and behavior. Any movement that questions or rejects religious faith or the social influence of religious organizations and hierarchies. Secularization is any social process that strives to imbue society with secular values. In the Christian tradition, the term “secular” is also used to refer to members of the clergy who live “in the world,” that is, who have not taken monastic vows or live in a monastery.

shaman: An individual believed to have power to communicate with supernatural forces and through these interventions to heal, bring blessings, or foretell the future. Belief in the power of shamans, or shamanism, has been a mark of traditional religion among pastoral nomadic peoples of Inner Eurasia, though the term has been applied throughout the world to local healers, doctors, diviners, and others believed to have the ability to communicate with the world beyond.

silk roads: A 4,000 mile-long complex of trade routes that ran generally east and west across Inner Eurasia and that carried goods, people, technologies, and religious ideas between major centers of complex society. The term refers to the silk textiles that constituted an important item in overland trade from China to India, Persia, and the Mediterranean lands. Also Silk Road.

slavery: The state of an individual held in servitude as the property, or chattel, of another individual, a household, or the state; the practice of owning slaves. The legal, economic, moral, and personal condition of slaves have varied widely in history from one society to another.

Southwest Asia: The region of Afroeurasia extending from the eastern coast of the Mediterranean Sea to Afghanistan, including Turkey and the Arabian Peninsula. The common term for this region has conventionally been the Middle East or Near East. Many scholars, however, now regard these expressions as obsolete, except in the context of the history of the past century or so, because these terms evoke a specifically European perspective on the world, that is, that all of Afroeurasia may be thought of as constituting two primal zones, the West (Europe) and the East (all lands east of Europe).

sovereignty: A state's authority, claimed to be absolute in matters of law within its own borders. Member states of the United Nations, for example, are sovereign states. A monarch is also sometimes referred to as the "sovereign."

standard of living: The level of subsistence or comfort that a group or individual is able to maintain in daily life; an economy's ability to produce the material goods and services that individuals want or need; a society's average per-capita gross domestic product.

state: A population and territory over which a central government holds authority.

steppe: Flat or rolling grassland characterized by semiaridity. Equivalent to what Americans call "prairie" and Argentineans call "pampas."

sultan: A title designating rulership of a Muslim state, usually implying administrative and military authority as opposed to religious leadership. A sultanate is a state headed by a sultan.

syncretism: A blend or combination of different beliefs and practices, usually religious; the adoption of one group's religious or other cultural beliefs and practices by another group.

tribe: A form of social and political organization in which the fundamental principle of solidarity is kinship. The members of a tribe claim to be descended from a common ancestor. A tribe is typically the largest group in a region claiming shared descent. Tribal organization is common among pastoral nomadic and stateless societies. In tribal societies, individuals identify primarily with kinship groups rather than with a specific geographical territory.

urbanization: The growth of urban areas, or cities; the movement of people from rural communities to cities.

world religion: A belief system that embraces people of diverse languages and cultural traditions and that has had significant influence on the course of human history. The major world religions are Buddhism, Christianity, Daoism, Hinduism, Islam, and Judaism. Confucianism is a major belief system, though some scholars reject classifying it as a religion because it addresses mainly moral and ethical issues rather than the spiritual or supernatural realm.

Image Credits

Cover. **Painting of Ships.** thinkstockphotos.com.

Page 17. **A ship on the Baltic Sea.** photos.com.

18. **A two-masted dhow of a type that sailed in the Persian Gulf.** By Ji-Elle (Own work) (CC-BY-SA-3.0-2.5-2.0-1.0, via Wikimedia Commons, or GFDL), <http://creativecommons.org/licenses/by-sa/3.0> or <http://www.gnu.org/copyleft/fdl.html>.
19. **Sailing ship mounted on table with neutral background.** photos.com.
19. **Seventeenth-century woodblock print of fifteenth-century Chinese treasure ships.** Unknown (Public domain, via Wikimedia Commons).
25. **The T/O Pattern.** Reprinted from E. G. Ravenstein, *Encyclopaedia Britannica*, 11th ed., vol. 17 (Cambridge: Cambridge University Press, 1911).
26. **World map by Muslim scholar and geographer Abu Abdallah al-Idrisi, 1154.** Reprinted from E. G. Ravenstein, *Encyclopaedia Britannica*, 11th ed., vol. 17 (Cambridge: Cambridge University Press, 1911).
27. **English world map of the thirteenth and fourteenth centuries.** Reprinted from E. G. Ravenstein, *Encyclopaedia Britannica*, 11th ed., vol. 17 (Cambridge: Cambridge University Press, 1911).
28. **World map of 1320.** Reprinted from E. G. Ravenstein, *Encyclopaedia Britannica*, 11th ed., vol. 17 (Cambridge: Cambridge University Press, 1911).
29. **1457 Italian world map.** Reprinted from E. G. Ravenstein, *Encyclopaedia Britannica*, 11th ed., vol. 17 (Cambridge: Cambridge University Press, 1911).
30. **Fifteenth-century world maps.** By Samuel Butler (Public domain, via Wikimedia Commons).
31. **Knowledge of the world now so much greater than Ptolemy's (1457).** Reprinted from E. G. Ravenstein, *Encyclopaedia Britannica*, 11th ed., vol. 17 (Cambridge: Cambridge University Press, 1911).
32. **Reconstruction of Toscanelli's 1474 map showing the Atlantic Ocean.** By Justin Winsor (Public domain, via Wikimedia Commons).
33. **Changes of the view of the world in 1515.** By Johannes Schöner, cartographer, and Joh. Gebhard, lithographer (Public domain, via Wikimedia Commons).
76. **Map of the Atlantic Ocean with dates and places claimed by Spain and Portugal.** By Kristopher Morris. Data from J. H. Parry, *The Age of Reconnaissance* (Berkeley: University of California Press, 1981).
77. **Map of the Indian Ocean with dates and places claimed by Spain and Portugal.** By Kristopher Morris. Data from J. H. Parry, *The Age of Reconnaissance* (Berkeley: University of California Press, 1981).
140. **Carbon.** By W. Oelen (CC-BY-SA-3.0, via Wikimedia Commons), <http://creativecommons.org/licenses/by-sa/3.0>.
142. **Illustration from the Petersburg manuscript (left).** Courtesy of History of Science and Technology in Islam.
142. **Illustration from the Petersburg manuscript (right).** Courtesy of History of Science and Technology in Islam.
142. **First illustration of fire lance and a grenade.** Public domain, via Wikimedia Commons.
146. **Earliest known depiction of a European cannon.** By Walter de Milemete (Public domain, via Wikimedia Commons).

147. **Early small bombard.** Illustration by Albert Manucy, *Artillery through the Ages* (Washington DC: U. S. Government Printing Office, 1956).
148. **Light artillery of Gustavus Adolphus.** Illustration by Albert Manucy, *Artillery through the Ages* (Washington DC: U. S. Government Printing Office, 1956).
148. **Fifteenth-century breechloader.** Illustration by Albert Manucy, *Artillery through the Ages* (Washington DC: U. S. Government Printing Office, 1956).
148. **Trace italienne.** Unknown, (Public domain, via Wikimedia Commons).
149. **Offensive artillery and its use in attacking fortifications.** Adapted by Kristopher Morris. Illustration by Albert Manucy, *Artillery through the Ages* (Washington DC: U. S. Government Printing Office, 1956).
149. **Firestick.** By Oliver H. (Public domain, via Wikimedia Commons).
150. **Siege of Orleans in 1428.** Unknown (Public domain, via Wikimedia Commons).
150. **Musket parts.** By Engineer comp geek at en.wikipedia (Public domain, via Wikimedia Commons).
153. **Manual exercise of the musketeer.** Unknown (Public domain, via Wikimedia Commons).
160. **France under Louis XI.** Reprinted from James Harvey Robinson, *An Introduction to the History of Western Europe* (Boston: Ginn & Co., 1903).
160. **Europe in the mid-sixteenth century.** Reprinted from James Harvey Robinson, *An Introduction to the History of Western Europe* (Boston: Ginn & Co., 1903).
164. **Philip II, Spain.** By Sofonisba Anguissola (Public domain, via Wikimedia Commons).
164. **Elizabeth I, England.** photos.com.
164. **Louis XIV, France.** By Hyacinthe Rigaud (Public domain, via Wikimedia Commons).
164. **Xizong, Ming Emperor.** Unknown (Public domain, via Wikimedia Commons).
165. **Shah Abbas the Great, Safavid Empire of Persia.** By Bishn Das (Public domain, via Wikimedia Commons).
165. **Sultan Sulayman, Ottoman Empire.** By Titian (Public domain, via Wikimedia Commons).
165. **Jahangir, Mughal Empire of India.** By Abu al-Hasan (Public domain, via Wikimedia Commons).
165. **Catherine the Great, Russia.** By Ф. С. ПОТОКОВ (Public domain, via Wikimedia Commons).
168. **States and Empires in 1519.** By Kristopher Morris.
169. **States and Empires in 1600.** By Kristopher Morris.
170. **States and Empires in 1714.** By Kristopher Morris.
171. **States and Empires in 1804.** By Kristopher Morris.
185. **Modifications of the beaver hat.** By E. Stanford Londres (Public domain, via Wikimedia Commons).
191. **Dyeing batik textiles with indigo.** By Tropenmuseum of the Royal Tropical Institute (CC-BY-SA-3.0, via Wikimedia Commons), <http://creativecommons.org/licenses/by-sa/3.0>.
191. **Tuaregs at the Festival au Desert near Timbuktu, Mali 2012.** By Alfred Weidinger from Vienna, Austria (CC-BY-2.0, via Wikimedia Commons), <http://creativecommons.org/licenses/by/2.0>.
192. **Key parts of the indigo production process.** By Jean-Baptiste du Tertre (Public domain, via Wikimedia Commons).

-
192. **Flowering Indigofera frutescens.** By Paul Venter (CC-BY-SA-3.0, via Wikimedia Commons, or GFDL), <http://creativecommons.org/licenses/by-sa/3.0> or <http://www.gnu.org/copyleft/fdl.html>.
197. **Wedgwood tea and coffee service.** By Valerie McGlinchey (CC-BY-SA-2.0-uk, via Wikimedia Commons), <http://creativecommons.org/licenses/by-sa/2.0/uk/deed.en>.
227. **Sir Isaac Newton.** Courtesy of the Library of Congress.
232. **Al-Khwarizmi.** By Chris 73 at en.wikipedia (Public domain, from Wikimedia Commons).
234. **René Descartes.** Courtesy of the Library of Congress.
236. **Galileo Galilei.** Courtesy of the Library of Congress.
252. **Martin Luther.** Courtesy of the Library of Congress.
275. **Distribution of Christian Denominations in Europe, 1648.** By Kristopher Morris.
279. **Ignatius of Loyola.** photos.com.
297. **Guru Nanak.** By Dulaysinghb ([CC-BY-SA-3.0, via Wikimedia Commons), <http://creativecommons.org/licenses/by-sa/3.0>.

About the Authors

ESTHER ADAMS

Esther Adams became a social studies teacher in 2001. She spent her first two years of teaching at the Walworth Barbour American International School in Tel Aviv, Israel. Upon moving back to the United States, she began teaching in Bethesda, Maryland. She has taught Advanced Placement World History, American Government, and Model United Nations.

DR. ANNE CHAPMAN

Dr. Anne Chapman served for many years as history teacher and academic dean of Western Reserve Academy in Hudson, Ohio. She has been a history education consultant to the College Board, the Educational Testing Service, and the National Center for History in the Schools. She also edited *World History: Primary Source Readings*.

SUSAN DOUGLASS

Susan Douglass has been a principal researcher and analyst for the Institute on Religion and Civil Values and an author of numerous teaching units and books on Islam and world history. She joined the World History for Us All development team in 2001.

DONALD JOHNSON AND JEAN JOHNSON

Donald Johnson taught world history and Asian studies at New York University for many years. Jean Johnson taught world history at Friends Seminary in New York City. Don also served as Director of Asian Studies at NYU, conducted an NYU summer graduate study program in India and China, and served on the National Commission for Asian Education in Our Schools. Jean served as a member of the world history TORCH Program of the Woodrow Wilson National Fellowship Foundation, and she was the Director of TeachAsia for the Asia Society. She also participated in writing the National Standards for World History. The Johnsons have authored several books including *Through Indian Eyes*, *The Human Drama: A World History* (2 vols.) and *Universal Religions in World History: The Spread of Buddhism, Christianity, and Islam*. Special thanks to David Sedivy, Highlands Ranch High School in Highlands Ranch, Colorado, for permission to adapt one of his teaching units.