

TABLE OF CONTENTS

FLIGHT

Purpose	1
Overview	2
Setup Directions	3
Pre/Post Test Answer Key	4
Unit Time Chart	6
Daily Directions	
Day 1	7
Day 2	8
Day 3	9
Where Is It? rules	10
Day 4	11
Race Day 1	12
SG page 2	13
Race Day 2	16
SG page 8	17
Race Day 3	18
Race Day 4	20
Race Day 5	21
Scoring for Diary Entries	22
Day 10	23
MAP OF ANDORANIA	25
FATE CARDS	26
PRE/POST-TEST	32
FLIGHT TEAMS ROSTER	33
FLIGHT PLAN	34
DIARY ENTRY	35
Air Miles Chart	36
WINNER’S CERTIFICATE	38

CONTENTS

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FLIGHT

In this simulation student teams fly small planes in an air race across an imaginary continent. Students plan their strategies, figure out specific flight plans, react to the vagaries of fate, make new decisions, and record what happens to them. As they participate, they specifically experience the following:

Knowledge

- What map symbols mean
- What a distance scale means
- The purpose of latitude and longitude
- The hazards of flying light planes

Skills

- Reading maps
- Figuring distances and direction
- Reading latitude and longitude
- Cooperating in order to make group decisions
- Writing diary entries

Attitudes

- Appreciation of the skills needed in navigating an airplane
- Respect for light airplane crews flying in hazardous weather

PURPOSE

OVERVIEW

FLIGHT

OVERVIEW

FLIGHT begins with a PRE-TEST which demonstrates the map-reading skills of your students. Students then form flight teams of three persons: Pilot, Co-pilot, and Navigator. You may spend up to three days to review essential map reading skills to ensure student success: legend, latitude and longitude, and scale. Students then discuss the ANDORANIA MAP, review job descriptions, and study the **Rules** of the simulation.

The race begins and continues until one team completes the course (approximately five days are necessary). Each team files for your approval a daily FLIGHT PLAN. Once it is approved, the Pilot draws a FATE CARD and the team completes the action indicated. The team members draw the plotted course on their small maps in their Student Guides and move their team marker on the large classroom map. The day ends with the writing of the diary entry describing the day's happenings.

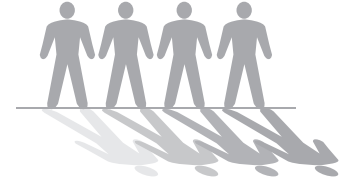
FLIGHT concludes when one team successfully completes the flight from Karuz to Morgan Town. Once you declare the winner, administer the POST-TEST, and conduct an oral evaluation of the simulation, encouraging students to discuss what they learned.

SETUP DIRECTIONS

FLIGHT

1. **Before you begin:** Read all materials in this Teacher Guide and in the Student Guide.
2. **Grouping students:** Either by chance or by dictation place your students into flight teams of three members each. If your class size is not exactly divisible by three, allow one team to have two members or one team to have four members.
 - a. **Chance:** Make three small lettered slips for each team (three A's, three B's, three C's, etc.). Students draw slips to determine their flight team.
 - b. **Dictation:** Assign students to teams, balancing personalities, gender, and/or ability levels.
 - c. **Option:** You may require that students rotate their role responsibilities beginning on Day 3 to allow each student the opportunity to experience each role.
3. **Preparing your classroom:** Make a display copy of the MAP OF ANDORANIA and project it onto a large sheet of butcher paper in order to make a bulletin board-size map. Consider having students help you with this task several days in advance; doing so will create interest. Copy the FATE CARDS, cut apart and place in an envelope for use later.
4. **Duplication:** Duplicate the following in the number indicated in *Italics*:
 - DIARY ENTRY — *four per flight team*
 - FATE CARDS — *one set (cut apart)*
 - FLIGHT PLAN — *five per flight team*
 - FLIGHT TEAMS ROSTER — *one*
 - MAP OF ANDORANIA — *display copy*
 - PRE/POST-TEST — *two class sets*
 - WINNERS CERTIFICATE — *three or more as needed*
5. **Other materials**
 - Envelope — *one (for FATE CARDS)*
 - Hat or basket — *one (optional)*
 - Paper — *class set*
 - Pencils — *class set*
 - Pushpins (various colors)* — *one per flight team*
 - Ruler — *class set*
 - Scrap paper — *enough for students*

*You may devise another type of marker for each team.



You may elect to laminate the FATE CARDS to prolong their usefulness.

SETUP DIRECTIONS

FLIGHT



These by no means cover all types of maps available. You may obtain three-dimensional maps from the U.S. Army Topographic Command, Washington, D.C.

6. **Team markers:** Obtain colored pushpins or thumbtacks. A second option is to have students make small, colored airplanes from poster board—one color for each team. Pin these markers on the large classroom map. Flight team pilots move their team markers to show their progress across Andorania.
7. **Resource maps:** Obtain for display during the simulation as many of the following maps as possible. Your school librarian, geographical organizations, travel agencies, or government offices are excellent sources.
 - a. Elevation maps (Lowlands, highlands, and mountains are given in different colors.)
 - b. Contour maps (Contour lines show elevations.)
 - c. Three-dimensional maps (Molded relief maps printed on plastic sheets)
 - d. Photo maps (Images obtained from the air or space)
 - e. Statistical maps
 - f. Weather maps
 - g. Road maps
8. **Evaluating the PRE/POST-TEST:** Questions 1, 2, and 3 deal with *scale*, questions 4 through 14 deal with *legend*, and questions 15 through 18 deal with *latitude* and *longitude*. The remaining questions are general questions about the race itself.



1.	F	11.	F	21.	T
2.	T	12.	T	22.	F
3.	F	13.	T	23.	T
4.	T	14.	T	24.	T
5.	T	15.	T	25.	F
6.	F	16.	T		
7.	T	17.	T		
8.	T	18.	F		
9.	T	19.	T		
10.	F	20.	T		

SET-UP DIRECTIONS

FLIGHT

9. **Using the PRE/POST-TEST:** Student performance on the Pre-test will determine how you prepare for the first race day of the simulation.
 - a. If student answers on the PRE-TEST indicate that the students have very little background knowledge of map legends, latitude and longitude, and scale, cover these map skills more thoroughly using your own resources. You may need to spend three or four days on each lesson.
 - b. If student answers on the PRE-TEST indicate some basic knowledge of map legends, latitude and longitude, and scale, use the FLIGHT lessons to review and reinforce map skills knowledge.
 - c. If student answers on the PRE-TEST indicate mastery of map legends, latitude and longitude, and scale by the class, you may elect to begin the race immediately.
10. This simulation is designed for students with a preliminary knowledge of how to read maps. The map lessons in Days 2, 3, and 4 are primarily a review.
11. FLIGHT is designed for use by flexible, creative teachers who desire a participatory classroom. You may modify, add or delete materials to fit the needs and interests of your students or to satisfy your own requirements. Consider the following suggestions to modify FLIGHT:
 - a. Require that students compute their distances each day in both miles and kilometers.
 - b. Add additional FATE CARDS for other situations.
(You may encourage creative students to write new FATE CARDS for a second FLIGHT race.)
 - c. Conduct a return race across the Andorania continent.
Require a stopover so that the race covers more of the map.
For example: Race from Morgan Town to South Stor, with a mandatory stopover at Dellor.
 - d. Conduct an air race over a map of a real area of the world.



If your students cannot read maps, plan some in-depth lessons for your students prior to beginning the actual simulation. The review lessons taught on Days 2, 3 and 4 include too much material for students to assimilate in one lesson if they have no previous knowledge of how to work with maps.

To convert miles to kilometers, multiply the number of miles times 1.60934.

To convert kilometers to miles, multiply the number of kilometers times 0.62137.

UNIT TIME CHART

FLIGHT

Pre-Flight Preparations				Race
DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
PRE/POST TEST FLIGHT TEAMS ROSTER Student Guide: Introduction Introduce simulation Organize flight teams	Student Guide: Map Legends Review map legend symbols Map Symbol Bingo	Student Guide: Latitude and Longitude Review latitude and longitude Where Is It?	Student Guide: Scale of Distance Review scale of a map Make individual scales for race Discuss geographic features of Andorania map	<u>Race Day 1</u> Student Guide: Pre-Flight Preparation Student Guide: Rules of the Race Student Guide: Sample Flight Plan Introduce FLIGHT PLANS Announce departure and destination cities Announce weather conditions Teams file FLIGHT PLANS
Race Days				Finish
DAY 6	DAY 7	DAY 8	DAY 9	DAY 10
<u>Race Day 2</u> Pilots draw FATE CARDS Teams move markers on class map Co-pilots write DIARY ENTRIES for previous day Announce weather conditions Teams file FLIGHT PLANS	<u>Race Day 3</u> Pilots draw FATE CARDS Teams move markers on class map Co-pilots write DIARY ENTRIES for previous day Announce weather conditions Teams file FLIGHT PLANS	<u>Race Day 4</u> Pilots draw FATE CARDS Teams move markers on class map Co-pilots write DIARY ENTRIES for previous day Announce weather conditions Teams file FLIGHT PLANS	<u>Race Day 5</u> Pilots draw FATE CARDS Teams move markers on class map Co-pilots write DIARY ENTRIES for previous day Announce weather conditions DIARY ENTRIES for Bonus Round (optional)	PRE/POST TEST WINNERS CERTIFICATES Announce Bonus Round distances Teams move markers on class map Announce the winning team Student debriefing