

High School Food Court

Analyzing Revenue and Demand to Recommend New
Campus Eateries

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About the Buck Institute for Education

The Buck Institute for Education (BIE) is dedicated to improving 21st-century teaching and learning by creating and disseminating products, practices, and knowledge for effective Project Based Learning. Founded in 1987, BIE is a not-for-profit 501(c)3 organization that receives operational funding from the Leonard and Beryl Buck Trust, and funding from other education organizations, foundations, schools and school districts, state educational agencies, and national governments for product development, professional development, and research.

Project Based Economics

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Students learn more when they care about what they are learning. Students understand concepts better if they see how these concepts apply to the world outside of school. Students retain information longer if they are actively engaged in discussion and demonstration of what they are learning.

These are hardly new ideas, but too much of what happens in American classrooms does not meet this ideal. *Project Based Economics (PBE)* is built upon these principles. It addresses the concepts and content defined by the *Voluntary National Content Standards in Economics*, but does it in such a way that this material becomes meaningful and involving to students. *PBE* reverses the traditional method of “teach the concepts first, then give students the opportunity to apply them.” Instead, *PBE* places students in an interesting scenario with an open-ended problem to solve and asks them to arrive at a justifiable solution using economic concepts. The project thus “pulls” students through the content. The teacher’s role is to clarify, facilitate, and guide, rather than “push” unmotivated students toward the learning objectives.

Additionally, the *PBE* methodology helps teachers build valuable interdisciplinary “21st-century skills” including collaboration, critical thinking/problem solving, and making a presentation. We have found that *PBE* works well for diverse students in a variety of school settings. Research comparing students’ economic knowledge gained from *PBE* versus that gained by students who received traditional instruction has demonstrated that the *PBE* students learn more, and that this difference is statistically significant.

These units were developed collaboratively by the Buck Institute for Education, and the HIRE Center, California State University–East Bay. They have been pilot-tested and critiqued by a group of energetic and insightful teachers throughout California. Although too many teachers have been involved in the development of these units to thank each teacher by name, we are extremely grateful for their time, insight, and contributions to making these units successful. In addition, there have been a number of university professors, staff developers, and school district staff who have contributed to unit development. We have benefited from their observations and suggestions, and offer a collective “Thank you!”

Please visit the Interact website (www.teachinteract.com) to find out about professional development offerings and conference presentations.

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Chapter Four

Purpose and Overview

Time required

5–6 class periods

5–6 class periods

Project scenario

In a market economy, consumers and producers allocate resources according to the laws of demand and supply. Consumers make decisions about what goods and services they are willing and able to purchase based on price and taste. Producers set prices based on their costs, expected revenue, and profit. However, sometimes other, noneconomic factors influence what is produced and for whom goods are produced. To explore how economic and non-economic factors might interact, students are presented with the following problem-solving scenario in this project:

Oak Grove High School is constructing a new food court on its campus. The school board has asked the student council to recommend which restaurants should be awarded contracts to serve food to students. The student council will be given 20% of the profits from the restaurants to fund its activities. The student council first must decide which restaurants will earn the most profit, balancing their potential funding against student demand for the various entrees to be offered. Complications arise when the school principal forwards voicemail messages from interest groups in the school community who advocate for certain restaurants. Since the school board members also hold varying views about which restaurants are appropriate, students must present convincing arguments based on both economics and political considerations.

Concepts to be learned

To successfully resolve the problem and complete the products required in this project, students need to understand and be able to apply the following economic concepts.

- Costs (of production)
- Demand
- Demand schedule
- Fixed costs
- Opportunity costs
- Profit
- Scarcity
- Total cost
- Total revenue
- Tradeoff
- Variable costs

Although an understanding of the following economic concepts is not essential to complete project tasks, teachers can use the unit to explain additional economic concepts including:

- Demand curve
- Elasticity
- Law of demand

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NCEE Content Standards addressed

High School Food Court addresses the following *Voluntary National Content Standards in Economics* codified by The National Council on Economic Education, in partnership with the National Association of Economic Educators and the Foundation for Teaching Economics. For more information see www.ncee.net/ea/standard.

Standard #	Economic Concept
1	Scarcity
2	Opportunity cost
3	Market systems (allocation of goods and services)
4	Economic incentives

Sequence of the unit

Like the other BIE *Project Based Economics* units, *The High School Food Court* is designed so that students follow a standard set of activities in a proscribed order. But within these activities, there will be variation in the timing and in the way students complete them.

The sequence of instructional activities is described below. This sequence is logical, and is based upon extensive pilot testing in high school economics classrooms. It is also informed by research into effective instruction. Although changes may be necessary to meet time constraints, address the needs of specific student populations, or include additional instructional materials and learning opportunities, we strongly encourage teachers to adhere to the sequence of activities as closely as possible—at least during the first several times *The High School Food Court* is taught. Each instructional activity is discussed in more detail in the following section, the *Step-by-Step Teaching Guide*.

Pre-project planning

0. **Prepare** for successful project implementation.

Launching the project

1. Students receive Entry Document, the **memo from the principal**, and discuss it as a whole class.

Framing the inquiry

2. Students develop **initial “Know” List** with you (whole-class discussion).
3. Students develop **initial Driving Question** with you (whole-class discussion).
4. Students develop **initial “Need-to-Know” List** with you (whole-class discussion).

Problem-solving and learning activities

5. Students form small groups, receive **list of restaurant applicants** and discuss the pros and cons of each restaurant (in small groups).
6. Students receive **Table 1**, “Demand for Entrees,” and review it with you (whole-class discussion).
7. Provide **Clarifying Lesson #1** on *demand and total revenue*.

8. Students individually write **first Project Log entry**.
9. **Review individual Project Log entries** to assess understanding of economic concepts.
10. Students receive **Table 2**, "Total Revenue," and review it with you (whole-class discussion). *Optional:* Students complete Table 2 by performing calculations.
11. Students receive **Table 3**, "Cost Data," and review them with you (whole-class discussion).
12. Students receive **Table 4**, "Daily Costs," and review them with you (whole-class discussion). *Optional:* Students complete blank Table 4 by performing calculations.
13. Provide **Clarifying Lesson #2** on *costs*.
14. Students individually write **second Project Log entry**.
15. **Review individual Project Log entries** to assess understanding of economic concepts.
16. Students receive **Table 5**, "Daily Profits," and review it with you (whole-class discussion). *Optional:* Students complete blank Table 5 by performing calculations.
17. Provide **Clarifying Lesson #3** on *profit*.
18. Students individually write **third Project Log entry**.
19. **Review individual Project Log entries** to assess understanding of economic concepts.
20. Students **revise Know/Need-to-Know List** with you (whole-class discussion).
21. Students **begin making restaurant choices** (in small groups).
22. Students receive **voicemail messages** from the principal, and discuss them as a whole class.
23. Students receive **second memo from the principal**, and discuss it as a whole class.
24. Students **finalize the Driving Question** (whole-class discussion).
25. Students **finalize Know/Need-to-Know List** (whole-class discussion).
26. **Share supplied rubric with students** to guide their work.

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Presentation, assessment, and debrief

27. Students **decide upon recommendation and plan presentation** (in small groups).
28. Students **present recommendations** to school board (in small groups).
29. Use supplied rubric to **assess presentations**.
30. Conduct **debrief to clarify and consolidate** students' understanding of key economic concepts (as necessary).
31. Manage **student reflection** on the 21st-century skills practiced, and the process of learning in PBL.
32. Make **notes on adjustments to the unit** to improve student learning for the next time the unit is taught.

Each of the above instructional activities is discussed in more depth below, with tips for successful classroom implementation.

Pre-project planning

0. Prepare for successful project implementation.

There are a number of issues that must be considered before embarking on a project with students. These include:

- How much time will be devoted to the project?
- What economics content resources need to be prepared in advance?
- Do all students have the basic skills (i.e., noneconomics content, such as reading, working in groups, etc.) they need to tackle the project? If not, is it necessary to pre-teach some of these skills, establish student mentor relationships, or deal with these challenges in other ways?
- How will student groups be formed?
- How will groups report on their progress and be held accountable? Do report forms or other tools need to be developed?
- Is it necessary to arrange access to the media center or computer lab?
- Do parents or administrators need to be informed about the process of Project Based Learning and be assured that time spent on the project is focused on standards-specific learning goals?

In addition to considering the above issues, be sure student handouts and clarifying lesson/mini-lecture materials are ready—or at least underway.

Important Note About Recordings: This unit features voicemail messages as part of the scenario. The recordings may be found on the accompanying CD-ROM. As an acceptable alternative, you and/or students may simply do a “dramatic reading” of the voicemail messages using the transcript provided in *the Student Materials*.

Important Note About Guest Panel Members: If you wish to include other adults as members of the “school board” panel hearing student presentations near the end of the unit, be sure to **contact these guests well in advance**. Let them know the location, day, and time presentations will be held. Prepare them for playing their role by providing the appropriate set of “School Board Member Questions” found in the *Teacher Materials*. You may also want to give them key handouts from the unit, such as the Entry Document (memo from the principal), Table 1 (“Demand for Entrees”), and Table 5 (“Daily Profit”).

Launching the project

1. Students receive Entry Document, the memo from the principal, and discuss it as a whole class.

*The memo from the principal may be found in **Student Materials**.*

Have one or more students read aloud the Entry Document while the whole class focuses on it. The memo can be projected so it can be read by the whole class. Alternatively, copies of the letter can be duplicated and handed out to students.

Potential Hurdle: As this memo sets up the scenario and the problem to be solved, it is essential that the entire class be able to read and comprehend the text. If necessary, employ the same literacy-building strategies you would normally use for this kind of reading material.

Synopsis of memo:

The memo from the high school principal tells the student-council members they have been asked by the school board to choose the five restaurants for the food court in the new student center. The student council's entire operating budget will come from 20% of the profits generated by the restaurants. The principal notes the parameters for the selection of restaurants and explains details regarding the students' oral presentation, with visual aids, to the school board. He reminds the council that they should use economic arguments and also must represent the interests of all students in the school.

Framing the inquiry

2. Students develop the initial "Know" list with you (whole-class discussion).

Students must now assess what they already know about the problem posed in the Entry Document. This should be done as a whole class by creating a "What Do We Know?" list on chart paper or a computer projector. Ask students to carefully review the Entry Document and offer items for the list, making sure to *only record what is in the text, not what might be inferred*. Students should be coached to identify all of the information that the Entry Document provides. They should conclude that this information is insufficient to solve the problem, and they need to know (learn) additional things.

Example of initial Know List

What do we know?



Potential Hurdle

It is essential that the entire class be able to read and comprehend the text. If necessary, employ regular literacy-building strategies.

Demand

Table 1, which shows the comparison of the demand curves for different restaurants, can be used to illustrate movement along the demand curve, shifts in curves, and computations of elasticity. For example, you could:

- Draw a demand schedule for all (or selected) restaurants from Table 1. (See discussion below.) Discuss the relationship between price and *quantity demanded* that occurs as one moves up and down an individual curve.
- Discuss changes in demand that might occur with differing student demographics. (See description below.) For example, if the student body is “rich,” the demand for Fleur-de-Lys or the Roastery might be greater. The demand for Taco Villa might be reduced should students discover that the cornmeal in taco shells is carcinogenic.
- Compute elasticities. This will show students how consumers respond to price changes at each initial price. This should be done only for advanced students or classes. Simply pick two prices and associated quantities for a particular restaurant and plug into the following formula for an arc elasticity:

$$\frac{Q_1 - Q_2}{(Q_1 + Q_2)/2} \cdot \frac{P_1 - P_2}{(P_1 + P_2)/2}$$

where:

P_1 = the first price selected

P_2 = the second price selected

Q_2 = the quantity associated with the second price

Q_1 = the quantity associated with the first price

Changes in Quantity Demanded

A fundamental characteristic of demand is the law of demand: *all else being equal, as price falls, the quantity demanded increases*. There is an inverse relationship between price and quantity demanded, and this is shown for each restaurant in Table 1. Because the total amount of money brought into the firm (i.e., total revenue) is the number sold (quantity) times the price, the law of demand means that total revenue will change as price changes. This is shown for any particular restaurant in the Total Revenue computations on Table 3.

The curriculum is designed to teach the following concepts:

Competing needs: Because resources are scarce, the redistribution of goods often means that one group (or individual) often gains only at another's expense (that is, to make someone better off, someone else must be made worse off because individuals are competing for the same resources)

Costs (of production): The measure of what has to be given up in order to achieve or produce something. Total costs include both opportunity costs, or the cost of alternative uses of resources, and direct costs, or total money outlays.

Demand: Purchases of a good or service that people are actually able and willing to make, given price and choices available to them. The **law of demand** states that there is a negative (or inverse) relationship between price and quantity demanded. That is, as price increases (decreases) the amount of a good purchased decreases (increases). Consumers' demand is determined by their tastes, income, and price of other goods. The **demand schedule** is a table showing the quantities of a good that will be purchased at various prices. The **demand curve** is a curve that relates the price of a product and the quantity of the product that individuals are able and willing to purchase. **Aggregate demand** is the total demand for goods and services in the economy by households (for consumer goods), by firms and government (for investment goods), and by other countries (exports).

Economic profit: A firm's total revenue (price times number of items sold) minus the total cost of production, which includes both direct and opportunity costs. Negative economic profits are called losses. Economic profits indicate that a firm is generating revenue above and beyond the next best use of its productive resources.

Equilibrium price: The price at which the quantity of the product that buyers are able and willing to purchase exactly equals the quantity of the product that sellers will sell

Equilibrium quantity: The quantity at which the amount that buyers are able and willing to purchase exactly equals the amount of the product that sellers will sell. This occurs at the equilibrium price.

Opportunity costs: The real sacrifice involved in achieving something. The value of the next best opportunity that would have to be foregone in order to achieve a particular thing.

OAK GROVE CITY HIGH SCHOOL

TO: Student Council
FROM: Dr. Stanley Campbell, Principal
RE: Food court in new student center

As you know, our school board would like the student council to select the restaurants for the food court in our new student center. Twelve local restaurants have applied for the five spaces available. The board has set the following parameters to help you make your decision:

1. Each restaurant will be required to give 20% of its profits to the student council. These funds will be the entire annual budget for the council—to pay for student activities, clubs, social events, and whatever else the council may wish to do that costs money. If the restaurants do not generate enough profits, you will have to cancel events or charge fees.
2. Your selections will be in effect for four years, according to the contract to be signed by each restaurant.
3. All restaurants will have the same space allocation. They will not be charged any set-up fees.
4. Each restaurant guarantees it will be able to serve food quickly enough to accommodate our student population and lunch schedule.

Also keep in mind the following:

- While you are free to use any criteria you wish in making this decision, remember that you represent ALL the students at this school. You need to take into account the needs of our diverse student body—and because we have a closed campus, students must either use the food court or bring a lunch from home.
- The president of the board has an economics degree, so be sure your decision is grounded in sound economic thinking.
- To approve your recommendation, the board will need to reach a consensus decision—all members must agree. Give them convincing reasons as to why the restaurants you have chosen are both profitable and meet the needs of students.

The board will hear your recommendation at their meeting next week, so plan a five-minute oral presentation with posters and graphs. Please note that you will not be allowed to exceed your time limit, and be prepared to answer questions from board members.

The school district has prepared some information about the restaurants to help guide your decision, which you will receive soon.