

**ECONOMIC PRINCIPLES
ACROSS THE K – 8 CURRICULUM**

**FINAL GRANT REPORT TO THE
CALIFORNIA STATE UNIVERSITY, INSTITUTE FOR TEACHING AND LEARNING**

Jim Charkins
Department of Economics
California State University, San Bernardino

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Course Outline

Economic Principles in Action Across the K-8 Curriculum

The purpose of this course is to help students:

- Demonstrate their understanding of 9 economic principles
- Define and give examples of economic concepts
- Use appropriate technology to teach economics to children
- Address the issue of diversity in their teaching
- Relate the economic concepts to their personal and social lives
- Use appropriate pedagogy to teach the economics strand of the 1998 California History/Social Science Standards

Week 1

Concepts: What is economics and why is it important? What is an economy? How do we depend on each other?

Teaching: Anticipatory set for the unit. KWLH (What do I know, want to know, learn, how do you want to learn it?) What is economics? Let them answer the question in groups. Assignment: Find an example of choice based on scarcity in the news and how it affects you.

Technology: KWL, Anticipatory set, unit

Children's Literature: Angel, Dragon Child

Diversity: Yarn game – interdependence, international, students tell their own story, children express the concept of scarcity by writing a poem or song of their culture.

Week 2

Concepts: Specialization and exchange. Every choice involves cost

Teaching: Valentine simulation. Personal production frontier in class. Cross blocking. Assignment: personal production frontier, allocating teacher's human capital for a low-achieving reading group compared to all other groups. Valentine simulation.

Technology: Cross blocking. Interview teachers on Web site.

Children's Literature: How to Make an Apple Pie and Travel Around the World, Saturday Sancocho

Diversity: What do other cultures eat instead of an apple pie, how does the price of an apple pie compare to the price of whatever other cultures have in place of apple pie?

Week 3

Concepts: Cost/Benefit Analysis

Teaching: In class, 5-step decision-making method applied to a personal decision. In class, apply the 5-step decision-making model to the 3 little pigs.

Assignment: In pairs, create a lesson applying the 5-step decision-making model to another children's story

Technology: PACE, 3 little pigs

Children's Literature: Helga's Dowry: A Troll Love Story, Uncle Jed's Barbershop
Diversity: How does a person's cultural background affect their perception of benefits and cost? Explore one particular issue from different cultural perspectives.

Week 4

Concepts: Incentives

Teaching: Don's lesson. Tragedy of the Commons. Assignment: Identify positive and negative incentives that you have experienced within a classroom setting.

Technology: Web exercises giving range of examples of property rights. Students must identify how these property rights affect them.

Children's Literature: La Mariposa, Tomas and the Library Lady, Richard Wright and the Library Card

Diversity: Identify positive and negative incentives within different cultures.

Week 5

Concepts: Voluntary exchange, money as a medium of exchange

Teaching: Bag game. Uninformed exchanges. Examples of spectrum of voluntarism. "I had no choice." "It's not fair." O'Henry, Gift of the Magi, Brandi's Braids. Find examples of exchange of school lunches.

Assignment: Give and explain a personal or historical example of voluntary exchange and one of exchange. Barter game

Technology: Identify a Web site that you would be willing to purchase from and explain what criteria you used to choose that Web site. Then identify one you would not use and explain why.

Better Business Bureau Web site: www.bbb.org

Children's Literature: Don't Leave an Elephant to Go and Chase a Bird

Diversity: Money from different countries; value of money in different countries

Week 6

Concepts: Markets, demand

Teaching: Transition, scaffolding, building on prior knowledge

Technology: Econed Web – demand section: http://ecedWeb.unomaha.edu/Dem_Sup/demand.htm

Children's Literature: Amazon Boy, Market, To Market, To Market

Diversity: Describe the different physical forms of markets in different countries, ranging from barter activities and open air markets to Ebay.

Week 7

Concepts: Supply, price determination, measure of relative scarcity

Teaching: The Baseball Game

Technology: Econed Web, prices: http://ecedWeb.unomaha.edu/Dem_Sup/supply.htm

Children's Literature:

Diversity: Why do prices of the same goods differ in different countries? (Econ minute) Poison fish in Japan. We the People, Peter Spears

Week 8

Concepts: Entrepreneurship, profits, market types

Teaching: Ruth's store

Technology: National Council on Economic Education: www.nationalcouncil.org

Kaufmann Foundation: <http://www.emkf.org/>

Junior Achievement: <http://www.ja.org/>

Foundation for Teaching Economics: www.fte.org

Children's Literature: [Arthur's Honey Bear](#), [Jalapeno Bagels](#), [Mel's Diner](#), [Mr. Blue Jeans](#), [Once Upon a Company](#), [Snowflake Bentley](#)

Diversity: Comparisons of profits in imported products from different countries and the native products. The concept of entrepreneur in different cultures.

Week 9

Concepts: Income distribution, labor markets

Teaching: Kelvin and Iris Lesson Plan

Technology: Scavenger Hunt: www.survivalpath.org

Children's Literature: [Art Lessons](#), [At the Crossroads](#), [Calling the Doves](#), [Career Day](#), [Daddies that Work](#), [Day Court with Mrs. Trinh](#), [Mommies that Work](#), [Mothers Can Do Anything](#), [Oh, the Places You'll Go](#), [Oliver Button is a Sissy](#), [Robert the Rose Horse](#), [Story Painter](#), [Voices from the Fields](#)

Diversity: Describe different kinds of work that people do in different parts of the world; how many of your grandparents lived on a farm?

Week 10

Concepts: Economic Indicators

Teaching: Students develop a price index, distinguish between real and nominal data

Technology: www.Dismal.com, www.cnnfn.com, www.census.gov, <http://www.calmis.cahwnet.gov/>, <http://ca.rand.org/>, www.worldbank.org, www.undp.org and other economic indicator Web sites.

Children's Literature: [Fly Away Home](#), [Tight Times](#)

Diversity: Compare and contrast earnings throughout the world (CIA fact book) [People](#), Peter Spears

Week 11

Concepts: Monetary Policy

Teaching: Bill's SF Fed game, Cup game, Wizard of Oz

Technology: Concord Coalition: <http://www.concordcoalition.org/>

ERP "Citizen's Guide to the Budget":

<http://www.iatp.unibel.by/USAInfo/trade/govdocsi.htm>

National Budget Simulation: <http://socrates.berkeley.edu:3333/budget/budget.html>

<http://www.frbsf.org/currency/index.html>

<http://www.mpls.frb.org/economy/calc/cpihome.html>

<http://www.mpls.frb.org/econed/curric/money.html>

<http://www.atl.frb.org/publica/brochure/fundfac/html/home.html>

<http://www.moneyfactory.com/currency/index.cfm>

Children's Literature:

Diversity: Bring physical examples of money from different countries. Allow the students to compare and contrast the different monies. How do they differ from U.S. currency?

Week 12

Concepts: Fiscal Policy

Teaching: Concord Coalition Penny Game

Technology: Fed Fiscal Policy Simulation

Children's Literature:

Diversity:

Week 13

Concepts: Government policy, market failures, public goods, regulation, price controls, government failures.

Teaching: Rap, or rock, orNCEE: Focus, high school economics.

Technology: Federal Trade Commission Web site: www.ftc.gov

Children's Literature:

Diversity: Compare and contrast the economic roles of government in three different types of economies – subsistence agriculture, poor mixed, and industrial.

Technology Plan Economic Principles in Action Across the K-8 Curriculum

Teaching and learning of economics in the proposal for a blended course features modern electronic communication methods. Shared access to common materials requires electronic delivery and presentation method, so computerized support is a core part of the instructional plan. Basic computer proficiency among all users is assumed throughout this plan. A range of technological usage begins with regular use of computers to generate instructional materials and extends to Web-based instruction. Print media continue to support the process and content of teaching economics to future teachers. Multimedia features build on the core print materials by introducing the Internet, CD ROMs and computer-assisted classroom delivery of the curriculum.

Video-based enhancement of instruction is familiar to everyone, since low cost playback machines have been in classrooms for a score of years. Removed from the classroom visual tool kit are the 12" laser disk player, 16-millimeter and filmstrip projectors. Every class has access to a VCR and every teacher knows how to use them. Computers, while present in many classrooms, have no such well-defined use. Participants in the blended course are expected to be able to access the Internet as a part of their computer competencies. Librarians on every campus have staff that will assist both teachers and learners engage in more efficient searching of the Web and begin instruction in the proper citation and use of copyrighted materials. Course syllabi direct students to the proper resource librarians on their campuses and require student feedback or performance on these Web issues.

Distance interaction among the teachers and learners necessarily includes asynchronous tools, such as e-mail and the electronic delivery of batched material, but it may include synchronous communication such as chat rooms and whiteboard presentations. Every participant needs an e-mail account at his or her campus, computer and printer access, and familiarity with word processing software. Teachers need to be familiar with electronic presentation tools, such as PowerPoint, so basic skills will be improved with assignments in this course. Assessment of outcomes may include on-line testing using multiple choice, matching and short answer questions. On-line tests, hosted by major publishers, may be taken without charge or user identification. Higher-level users may develop portfolios through course shells such as Web CT as an extension of their own Web page.

Over the past year, improvements in video streaming technology have brought video quality to an acceptable minimum standard. Some lecture material will be generated in campus studios and distributed through Web CT or similar course shell. This low-cost technique brings experts to the classroom or computer of every pre-service learner. An expert in children's literature can read and interpret the economics of the Three Little Pigs; a specialist in learning theory can lay out frequently asked questions about methods; and an economist can use Occam's Razor to cut through the dense thicket of theory. Best practice lessons, in other words, may be assembled in video streaming modules. Extension of these modules will be the focus of future grants. All of the video-streamed material will also be copied onto CD ROMs for individuals with minimal bandwidth on the Internet.

Paper and pencil assessment of student work is retained, but additional techniques include on-line testing and portfolio presentations. Every student will be required to go

beyond the bubble' of fixed response testing. Some students will develop their own Web pages, without the aid of a course management shell, by requesting campus addresses to place their work. Others will develop games or video products that demonstrate their mastery of the subject material. Still others will engage in original work and present their results in conventional classroom settings. All of this work will include some piece of technology that was nonexistent 30 years ago. Digital cameras may be checked out of most university Media Centers, so students can simply take snapshots and export them to a computer presentation slide. Reports from K-12 classrooms by the pre-service learner can include digital still shots or videotaped clips that are imported into PowerPoint or comparable product for reports back to the classroom. Overall, the intent of assessment includes a demonstration of competence and or growth in competence in the course.

Recapitulation of computer competencies

Minimum computer skills to enter the class include the ability to:

- Use a word processor
- Send and receive email
- Find and run a CD on a computer

Computer skills expected at the end of the blended economics class include the ability to:

- Conduct Internet searches of the Web for specific material
- Assess the quality of a Web site, whether primary or secondary material is presented, and to judge the fair use of the material in a classroom
- Locate lesson plans online
- Prepare a computer presentation slide show with a program such as Power Point or a word processing program such as Word or Word Perfect
- Find and load 'a plug in' such as Adobe Acrobat and Real Player on the computer

Optional high-level skills:

- Prepare a document for loading on the Web, including Claris Home Page or Microsoft Front Page
- Use a spreadsheet program, adjust the font size for preparation of an overhead slide or illustration within Home Page or Front Page
- Convert spreadsheet data into graphical forms
- Import digital images onto a printed or electronic page

Resources developed for the blended economics class

A Web -course shell will be created for this course. It can be hosted by one campus where the course rosters from several campuses are loaded into it. Known as a Web -enhanced course, materials loaded here will be used at the discretion of each instructor among using instructors. Every student will have access to tools that each instructor wishes to enable for student viewing.

A design team from the ITL group will consult with campus Web -based instruction personnel to generate a course template. From the template, Front Page lessons will be designed as modules. For instance, a K-2 literature element will be assembled from the bibliography and a model lesson developed. This module will be uploaded into the Course Contents section of Web CT. Viewable by the designers, the actual course content released to students can be quite different. Model modules for K-2, 3-4, 5-6, middle school and high school levels will appear in the Course Content section of the class. Each module will feature video streaming from campus studio-developed presentations of the ITL design team. All content includes static presentation software, although some presentation will include dynamic and interactive lessons. This development Web class will be populated only by professor/designers. Instructors who want to populate a Web CT course with live students will do so on their local campuses. The entire designer course will move to the local campus for unique course identification numbers and integration with the local student information system databases.

ITL designers will benefit from the built-in tutorials of the features of Web CT v. 3. Designers will access and operate 'course content,' 'bulletin board,' 'private mail' and the 'quiz' functions of Web CT. Initial training on Web CT operations will be conducted by CSU Sacramento. On-going training will occur on local campuses with the help of appropriate staff. CSU Sacramento will host the development course on Web CT.

San Jose, Stanislaus and San Bernardino will select among a menu of sample books that are commonly found in public schools, with hyperlinks to lesson plans and supplemental materials. Frank Baum's allegory, the Wizard of Oz, boasts many Web sites, but this team will point students to sites that encourage exploration with a minimum of distracting notions. They will extend the Web, not as a place where electronic scavenging occurs, but as a roadmap to the places where the best instructional materials reside. These sites will be summarized on the CD ROM.

Members of this ITL project share responsibility to produce this CD ROM. It will include relevant public domain material, original material, and links to the Web for proprietary material. The ROM begins with the State Standards. Text, graphics, streaming video, and Power Point animations will be included to model good instructional practices in the teaching of economics in accordance with the California Standards in Economics. The Center Director at CSU Fresno will provide editorial overview. Approximately 50 CD ROMS will be produced for distribution without additional charge to campuses that request them.

SAMPLE LESSONS

**ECONOMIC PRINCIPLES
ACROSS THE K – 8 CURRICULUM**

Lesson 1
Economic Principles in Action Across the K-8 Curriculum

**Opportunity Cost and
The Three Little Pigs**

A Primary Lesson

Objectives:

Upon successful completion of this lesson, students will:

- Recognize the opportunity cost of decisions
- Use the concept of opportunity cost in making decisions

Prior Knowledge:

Scarcity, choice, alternatives, advantages and disadvantages, personal responsibility, resources, human capital

Economic Principle:

Principle 3: Every Choice Involves Cost

California History/Social Science Standards:

1.6 - Students understand basic economic concepts and the role of individual choice in a free-market economy

3.5 Section 3 - Understand that individual economic choices involve trade-offs and the evaluation of benefits and costs

Materials:

- A copy of the Story of the Three Little Pigs (Activity 1-1)
- A piece of paper per child and art supplies to enable the children to draw two pictures

Motivation:

Ask the children if they have heard the story of the three little pigs. If so, ask one of the children to tell the story to the class. If not, give the class a brief explanation of the story. "Three little pigs build houses. The first builds a house of straw and the big bad wolf blows it down. The second pig builds his house of sticks and the big bad wolf blows it down. The third pig builds a house of bricks and the big bad wolf can't blow it down." Explain to them that they are going to hear a slightly different version of the story today. Explain that a version is a different way of telling a story.

Teaching procedure:

1. Write the words "**opportunity cost**" on the board. Say the words and have the children repeat them. Ask a few children to say the words by themselves. Explain that opportunity cost is what you give up when you make a decision. It is what you would have chosen--the next best alternative.
2. Tell the children that you are going to read them a version of the three little pigs story. Ask the children to identify the choices that each pig makes as you read the story.

3. Read the story, emphasizing the choices that each pig makes.
 - Luke chose to use his money and pig capital to build a small house of straw and go to Disneyland. His alternative was to use his money and pig capital to build a strong house and not go to Disneyland. He also chose to use his money and pig capital to go Disneyland instead of going to college.
 - Bo – same as Luke, only he went to Magic Mountain instead of Disneyland
 - Sadie – same alternatives as Luke and Bo except that her favorite amusement park is Knotts Berry Farm. She chose to use her resources to build a strong house and did not go anywhere. She chose to use her money and resources to go to college instead of an amusement park.
4. Each Pig made two choices: (1) type of house and amusement park and (2) college or amusement park. Use Activity 1-2 to answer the following questions:
 - In each case, which alternative did Luke and Bo choose and what was their opportunity cost? In each case, which alternatives did Sadie choose and what was her opportunity cost?
 - What were the advantages and disadvantages of the choices made by Luke, Bo, and Sadie?
5. Ask the class which pig or pigs made a good choice and why? Use their responses to lead them to a conclusion that more education (whether college or occupational training) provides human (or pig) capital that is useful on the job.
6. Ask the children to identify some decisions that they have made recently. What resources were involved, and what was the opportunity cost of each choice?
7. Ask the children what they would be doing if they weren't listening to the teacher. (Answers will vary) Explain that that is the opportunity cost of their choosing to listen.
8. Distribute one piece of paper and art supplies to each child. Have each child draw a picture of one of the houses on one side of the paper and an amusement park on the other. Ask the children which side of the paper they would like to display on the wall--the play side or the house side. After they have all chosen and the pictures are on the wall, explain that the side they don't display is the opportunity cost of their decision.

Closure:

Put the following signs on bulletin boards around the room:

- Opportunity cost is opportunity lost.
- To choose is to refuse.
- Every choice has a cost.

From time to time, help the children explain what each sign means. Help them identify the opportunity cost of decisions they make but be sure that the opportunity cost is the best alternative **they** would have chosen, not one that you would have liked them to have chosen.

Assessment:

Help the children develop a three little pigs play that uses the concepts of scarcity, resources, human (pig) capital, alternatives, choice, and opportunity cost. Have them present the play to a younger class or to parents at parents' night.

Related Activities:

When you read other stories to the children, or when they read stories, help them identify choices that the characters make, resources that are used in their decisions, and the opportunity cost of each decision.

The Story of the Three Little Pigs

Once upon a time, there were three little pigs that lived with their widowed mother in a small town in Tennessee. The pigs' mother and father had been successful entrepreneurs who had invented WolfSafe locks for pig houses. Unfortunately, their dad had died not long ago, and now it was just the four of them.

As the pigs grew, Mama Pig knew that her children would have to leave her one day and make it on their own. She and her husband had worked very hard to save enough money to send their children to college. So, when the day came that they must leave, she sat them all down at the kitchen table.

"Now children," she said, "the time has come for you to go out into the world and seek your fortune. Your father and I have saved enough money for each of you to be able to build a safe house and go to college."

She went to her purse and pulled out her checkbook. She sat down at the table and wrote a check to each of them. "Now Luke," she said, looking at the oldest (but certainly not the wisest), "you and your brother and sister are to take these checks, deposit them in your accounts, and use the money to build a safe house and go to college. Luke, you are the oldest, so I trust that you will see that your brother and sister use this money wisely."

Luke peered up at Mama Pig from under droopy eyelids. "Ah, sure Mom, we will do exactly as you suggest." Sadie, the youngest pig, just shook her head. She didn't expect much from Luke.

So the three little pigs took their checks with them, kissed Mama Pig goodbye, and promised to come home every Sunday for supper. Mama Pig shed a little tear as her children left. It would be lonely with them gone, but her water skiing club and her skateboarding friends would probably keep her company during the lonely times.

Luke did as Mama Pig told him. He went to the bank and deposited his money. Then he got to thinking, which was always a dangerous thing with Luke. They had never feared the Big Bad Wolf because their Mama had built their house from bricks and installed their very safe WolfSafe locks on all the doors. He was never sure that was really necessary. If he used his money to buy some straw for the house, put off college for a year while he got settled, and used just some of the money to go to Disneyland a few times, he would be in good shape. And besides, straw houses would take much less of his valuable pig capital to build. After all, he was out of the house and he could do whatever he wanted. "Let's see," he thought, "two alternatives. A big safe house that costs lots of work and money, and no Disneyland. Or a small, crumbly house and not much work or money and lots of Disneyland. Hmmm!" He pondered and pondered, which was a hard thing for Luke to do. Finally, he shouted with great glee, "I'm going to Diiiiiiiiiiiiisneyland!" So he did.

He went to the straw seller, bought enough straw to build a one-bedroom bungalow, built the house, and put a WolfSafe lock on the door. (Since it was only a one-bedroom

house, he didn't need more than one door.) Then he took himself and some of his money and went to Disneyland.

When he returned from Disneyland, the house was a disaster. Someone had been there, gone through the refrigerator and eaten everything, and torn the place apart. Whoever it was must have been very angry that he had not been there. On the floor lay the WolfSafe lock, fallen from its proper spot on the door. Evidently the rubber bands that Luke had used to hold it hadn't done the job. Luke was in trouble. So he went to visit his brother Bo.

Bo had been a little smarter than Luke, but not much. He had had thoughts much like Luke. No reason to go to all of that trouble building a brick house, when sticks would do. He could use less of his money and less of his precious pig capital, and go to Magic Mountain. And college could wait until he was settled. The problem was much like Luke's however. While Bo was at Magic Mountain, someone had done the same thing to his house. All the sticks were in a huge heap, and underneath were the remains of his furniture, TV, stereo, and computer. All destroyed. And there on the floor, was the WolfSafe lock. Maybe the string that Bo had used to tie it to the stick door wasn't strong enough.

"Who could have done this?" They both asked.

"I know," said Luke, "it was that rotten wolf. Ooooooh, I don't like that measly wolf, never have, never will. He's always causing trouble."

"Yes," said Bo. "It's a good thing we weren't home. He would have eaten us! I guess Mama and Daddy's WolfSafe locks weren't so wolfsafe after all. Wonder why they worked all those years in our house."

Now they were both in trouble.

So away they ran to Sadie's house. Sadie had had a hard time deciding what to do with her resources. She really wanted to spend most of her time at the Titan's games, but she knew the tickets cost lots of money and would use up a lot of her pig capital so she decided to use her resources to build a very safe house. She also knew that if she used her resources for the football games, she wouldn't be able to go to college. So Sadie made two choices – a good, safe, strong house and college.

Luke and Bo stared at a sign on the door. "Go away, don't bother me, I'm studying for a test. Sadie"

Unfortunately, they hadn't paid attention in school so they couldn't read it.

They stood outside the door and marveled at the house. Built of sturdy bricks, big, and strong looking. When Bo pushed on the door, he knew that a WolfSafe lock was holding it shut and that there was no way they would be able to get in. Fearing that their enemy, the Wolf, would show up at any time, they pounded and pounded, but to no avail.

They ran to a pay phone and called Sadie. Her answering machine gave the same message as the note on her door. What to do? Frantically, they ran home to their Mama.

There she was, as usual, sitting rocking on the front porch, playing her video games. It was a reassuring sight!

“Mama, Mama, you’ve got to help us. Someone blew down our houses and we’re afraid the Wolf will eat us!”

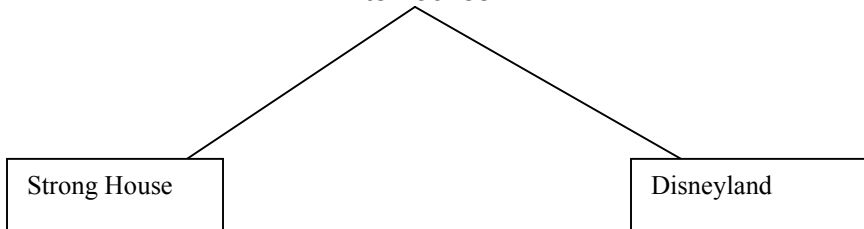
“Well, you silly children,” smiled Mrs. Pig. “ You have nothing to fear. Sadie and Mr. Wolf have worked it all out. They are taking an architecture course together in college and plan to go into business together. Mr. Wolf is so busy with school, that he just can’t allocate his wolf capital to blowing down houses anymore. So he has become a vegetarian. He and Sadie have actually started an organic farm and they are doing very well. It is helping them earn cash for college. You know, things go so well when you plan properly and allocate your limited resources wisely.

“How are your houses and why haven’t you invited me over to see them? You know, it’s probably a good thing you have some of our WolfSafe locks. Mr. Wolf is no threat anymore, but I heard there were some dogs in the neighborhood that have been getting in everyone’s trash and running wild, even going into people’s homes and getting into their refrigerators. Sure glad you have those locks; they could never get past a WolfSafe lock.”

Luke never did get the picture. He ended up working in a barbecue restaurant, constantly in debt, and often evading the law. Bo did better. He struggled for a while, working at low paying jobs. Finally, he went to carpenter’s school at night and earned a good living building dog safe houses. Sadie and Mr. Wolf became business partners in a very successful architectural firm. They go to the Titan games a lot now. With the children gone, Mama Pig became bored. She sold the house in Kentucky and moved to California where she opened her own surf shop. She is doing very well!

Luke's Choices

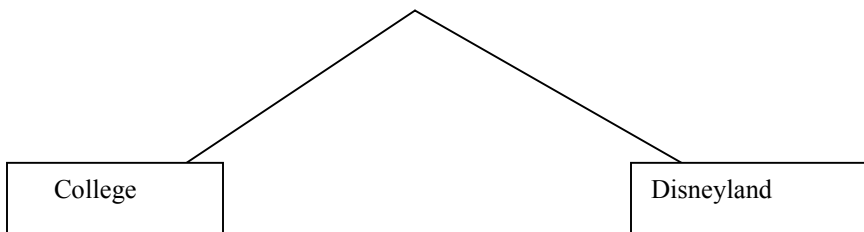
Alternatives



His Choice _____

His Opportunity Cost _____

Alternatives

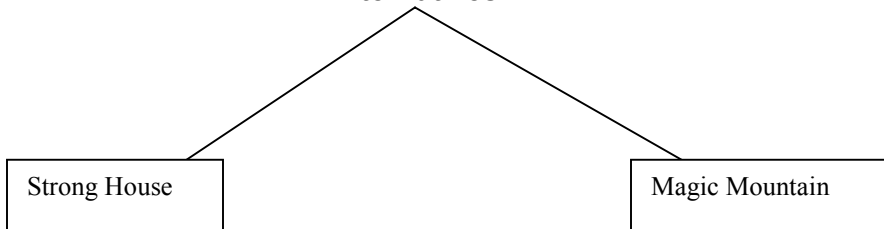


His Choice _____

His Opportunity Cost _____

Bo's Choices

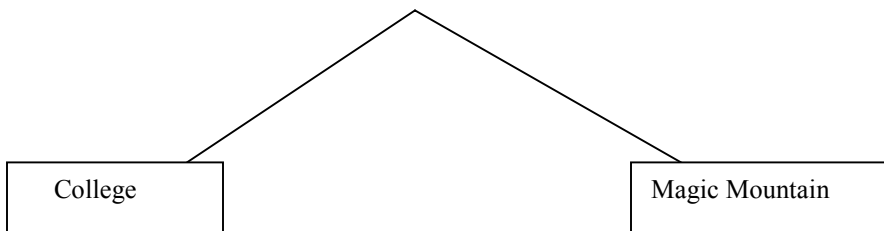
Alternatives



His Choice _____

His Opportunity Cost _____

Alternatives

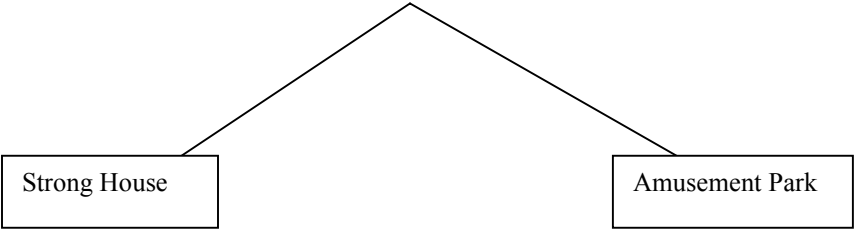


His Choice _____

His Opportunity Cost _____

Sadie's Choices

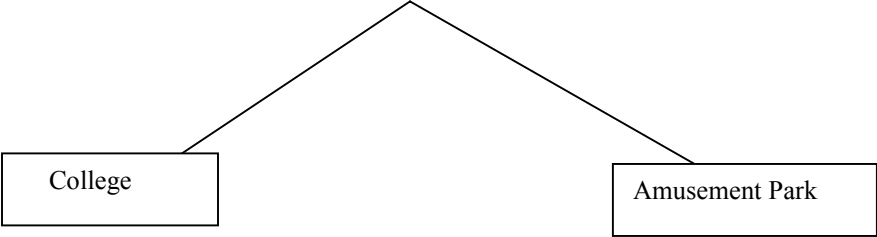
Alternatives



Her Choice _____

Her Opportunity Cost _____

Alternatives



Her Choice _____

Her Opportunity Cost _____

Lesson 2
Economic Principles in Action Across the K-8 Curriculum

Linking Education and Skills to Income

A Grade 3 Lesson

Objectives:

Upon successful completion of this lesson, students will:

- Understand how the choices they make now will affect their future
- Recognize the different jobs people do
- Identify the earnings associated with particular occupations
- Explain how skills and education affect earnings
- Use > and < to identify who makes the highest and lowest earnings levels

Prior Knowledge:

Work, occupation, choice, opportunity costs, personal responsibility, alternatives, resources, money, exchange, investment

Economic Principle:

Principle 7: People's skills influence their income.

California History/Social Science Standards:

3.5 Section 3 - Understand that individual economic choices involve tradeoffs and the evaluation of benefits and costs.

3.5 Section 4 - Discuss the relationship of students' "work" in school and their personal human capital.

In addition to using economic concepts, this lesson plan is meant to complement the grade three mathematics content standards, which can be found on pages 11-14 of the *Mathematics Content Standards for California Public Schools*.

Materials:

- Catalogs with products that interest children (make sure they have the prices of items advertised)
- Paper and pencils for performing calculations
- Overheads
- 8-1/2 x 11 cards for drawing
- Crayons and markers for drawing

The teacher will need the following information:

- Earnings data for different occupations (<http://www.calmis.cahwnet.gov/>)
- Occupation descriptions including education and experience requirements [http://www.calmis.cahwnet.gov/file/occup\\$/oes\\$.htm](http://www.calmis.cahwnet.gov/file/occup$/oes$.htm)

Motivation:

Ask the students why they are going to school and learning to read, write, and do math problems. What do the students get out of this knowledge? Ask the students to share what they know about high school and college. What do the people going to high school and college get out of those experiences? Tell students that they are going to learn about the connections between what they learn and how it will benefit them when they are older.

Teaching Procedure:

1. Have the students in the class develop a list of different occupations of adults. Write this list on the board so that it can be referred to throughout the lesson. (Teacher and students may need to review concept of work.) Introduce vocabulary (wages, earnings, occupations, work).
2. Talk about the different types of activities people in these occupations do. Have students try to identify things such as special skills, risks, or education required for the various occupations. Students should also find wage/earnings data about the occupations.
 - Students could develop these descriptions based on their own knowledge of specific occupations. Students could also be expected to go to the library to do research on occupations. Another approach would be to have the students identify occupations and people who could come in and talk about their jobs. Highlight the connection between the occupations and earnings.
3. Have each student pick an occupation. Make sure that a variety of the occupations are selected. Have the students illustrate the occupation and what they have learned about them in terms of skills, education, wage/earnings, and activities associated with it.
4. Once the students have discussed the various occupations have them pick out a number of occupations that are quite different. Try to get a couple that will have a large wage difference. (Use this list and get the data from the EDD site to bring to class.)
5. Share the wage data with the students in the class and tell the students that wages represent the amount of money a person gets paid for each hour of work. Have the students then figure out how to calculate how much the person will earn in a day, a week, a month, and a year. Have them calculate it and compare the various occupations. (Model this for the students.)
6. Once the students have performed the calculations ask them to identify the occupation with the highest earnings and the one with the lowest. (Use <> to compare.) (Model this for the students.)

Closure:

Review vocabulary and the concepts learned.

Discuss with the students why one occupation earns more than the other with a special emphasis on education and training levels. This could be followed by a discussion of what is required to get into college. (Once again use the descriptions to discuss what students could do in high school to prepare for the selected occupation.)

Assessment:

Give students pictures of people working in occupations and have students identify jobs and wages associated with each.

Give students a list of occupations with the corresponding education and training requirements. Have the students rank them in terms of which ones will have higher earnings based on the education and training requirements.

Students will make a list of occupations around the school and describe the different activities of the various occupations. Students will rank them based on their predictions about wage levels. Use vocabulary.

The student activity described in step 3 above can be used as part of the evaluation.

Related Activities:

The knowledge gained from this lesson could be included in a mini-society activity reinforcing the link between skills and earnings.

3.5 Section 2 of the California History/Social Science Standards says that students will learn about goods that are made locally, in the United States, and abroad. As students are learning about the types of goods made in different locations they could also be examining the types of occupations involved the production of these goods and services and connect these to income levels.

Lesson 3
Economic Principles in Action Across the K-8 Curriculum

The Gains from Specialization and Trade
The California Gold Rush

A Grade 4 Lesson

Objectives:

Upon successful completion of this lesson, students will:

- Be able to explain the benefits from specialization
- Recognize the connection between trade and the ability to specialize

Prior Knowledge:

Concept of an economy, resources, scarcity, domestic and international markets, choices, trade-offs, benefit cost analysis and human capital.

Economic Principle:

Principle 5: Voluntary exchange benefits the traders

Principle 7: People's skills influence their income.

California History/Social Science Standards:

4.4 Section 4 - Describe rapid American immigration, internal migration, settlement, and the growth of towns and cities.

3.5 Section 1 - Describe the ways in which local producers have used and are using natural resources, human resources, and capital resources to produce goods and services in the past and the present.

Materials:

- Boom Town by Sonia Levitin. This juvenile reader contains less than 30 pages, large colorful pictures, and large type. The fictional account of a family's move to California and subsequent growth of a town is summarized below.
- Gadget Construction---About 40 sheets of paper, box of paper clips, crayons or marker, stapler, roll of tape and dispenser, one-minute timer.

Motivation:

Ask students what how towns form and why they grow.

Teaching Procedure:

1. Read the story Boom Town

Summary of Boom Town: Amanda, a young child, and her family (mother and four siblings) journeyed to join her father in the California gold fields. The father slept and worked in the gold fields while the mother and children lived in a cabin in a town that consisted of not more than a stage stop, a pump house, and a few log cabins. After the many chores were done, Amanda made gooseberry pies. The father visited the family

on weekends. When he went back to the gold fields, Amanda gave him an extra pie. He returned the following weekend with coins in his pocket. He sold Amanda's pie to the miners.

The father took pies to the gold fields every week. Some miners walked to the cabin looking for pie. They suggested that Amanda open a bakery. Amanda enlists the help of her brothers to start a bakery. One builds a shelf, the other makes a sign and the third picks berries and sour apples.

Amanda met Peddler Pete and convinced him to stay and open a store. Soon the town had a cooper, a tanner, a miller, and a blacksmith. Amanda met a prospector covered with dirt. He asked if there was someone who did washing. Amanda suggests that he open a laundry. Soon the town added a tailor, a cobbler, a barber and an apothecary.

Amanda's pie business boomed. She had her brothers add another shelf and make a bench, and everyone helped pick berries and apples.

One day Cowboy Charlie rode in and asked where he could leave his horse for the night. Amanda noted that there was no livery stable and she suggested he start one. "You'd rent out horses, and wagons too. That would be a perfect business for you." Charlie opened a successful stable. He needed hay. Farmers brought wagons and sacks full of feed.

With all the people riding in, someone decided to build a hotel and a café. The owner of the café bought Amanda's pies, sometimes 5 or 6 at a time. Amanda had to expand. She taught one brother how to roll the crust. One brother got wood for the stove and one brother washed the fruit. Her father and brother built on a big room for the bakery. They were so successful their money jar was ready to bust. Eventually, Amanda's father gave up on gold mining and settled with the family to make pies. The town grew up around Amanda's Bakery!

2. Discussion following story:

A. Ask students how did the town get started and how did it grow?

One of the essential benefits of a town is that people can trade with one another. The ability to trade means individuals can specialize in one activity and trade for the other goods they want. People are willing to locate near each other in order to get the gains from specialization. The gains from specialization are increased output (higher productivity) and lower costs of production.

B. Ask students why Amanda didn't open her own washing, livery stable, or bank. Weren't these great ideas? Why didn't she do them herself? Wouldn't she have made more money running a livery stable?

Amanda knew how to bake great gooseberry pies. It takes special skills about horses to run a livery stable; it may take a lot of strength to run a laundry. Amanda had special skills (human capital) in making gooseberry pies so she specialized in baking pies.

- C. As more people came to live in or visit the town, Amanda needed more pies. She got her younger brothers to help her bake pies. But instead of teaching each brother to make pies from start to end, she had one collect wood, one brother just rolled the crust, and one brother washed the fruit. Why didn't Amanda teach her brothers to make pies from start to end?

This is a further example of specialization. First, there was specialization in what job to do (bake pies). Now, there is specialization in how to do the job (specialization in production). She probably assigned tasks to her brothers according to their level of human capital, e.g., the strong one could collect wood. By specializing in production Amanda can produce more pies. Important note: Amanda needs to make more pies because there are more people to trade with.

3. Activity to show that specialization in production increases output:
- A. Demonstrate how to make a Gadget. Lay out the material across the length of a table (think production line). The idea here is similar to making paper airplanes. You can use the airplane product instead of the nonspecific gadget product if you are not concerned about students flying planes. Students are generally so busy and intent on making planes that they don't fly planes until the end of the lesson. Whether making a gadget or a plane, the paper should be folded three or four different times. There should be a simple design drawn on the folded paper (circle, lines, words). One or two paper clips must be attached. The gadget or plane should be stapled or taped. After you make one gadget, ask students to time you to see how many gadgets you can make in a minute. Fold, draw, clip, staple (or tape) *quickly*.
- B. Ask for a volunteer to see if they can beat your number.
- C. Tell students that there are many more people who would be willing to buy your gadget, e.g., your town is growing, or people in the next town want to trade with you, or people in another country want to trade with you. How can you make gadgets faster? One or two students (depending on how large the table is---you don't want crowding) should specialize in folding the paper, one or two draw on the folded paper, they pass it to one student who attaches clips, she or he passes it to a student who staples. You can even have one student who collects the finished product into a box. Let the students make a few gadgets to practice and then time them for one minute.
- D. Variation: Initially, you can have only two students specialize---divide the tasks between them and time them for one minute. Then demonstrate the gains from further specialization by adding more students. Eventually the gains from specialization run out, as the table (factory) gets overcrowded.

Closure:

Key words in the following summary should be written on a poster and displayed in the classroom:

Amanda decided to specialize in making pies. As the number of people who wanted to buy her pies increased, she specialized in the production of pies. Specialization increases output and lowers costs. People settle into towns because towns make it easy for people to trade. People only specialize when they can trade for other things they want.

Assessment:

Ask students to list the people in their city who specialize. Lists should include people like doctors, auto repair mechanics, etc. Ask if the doctor also specializes in production. Nurses, office assistants, and lab technicians help the doctor produce medical care.

Related Activities:

As you proceed in the discussion about California, ask students why California doesn't grow its own bananas.

Bananas require long hours of very intense heat and moisture. California *could* grow bananas but it would take a lot of effort (cost). They would probably be grown in elaborate green houses to get the conditions correct. Why incur the cost when California can trade with another country like Ecuador that already has plenty of sun and moisture? California specializes in producing agricultural products and technology, which we trade to other states and countries for the things we want.

Lesson 4
Economic Principles in Action Across the K-8 Curriculum

Voyages of Discovery
Columbus, da Gama, and Magellan
“For God, Gold, and Glory....and maybe a little pepper!”

A Grade 5 or Grade 7 Lesson

Cognitive Objectives:

Upon successful completion of this lesson, students will:

- Equate price with the unit by which relative scarcity is measured
- Identify the impact of a change in supply or demand on the relative scarcity and price of a product
- Discuss the incentives that motivated three explorers
- Identify the major overland and sea routes of the spice trade on a map

Affective Objectives:

Students will:

- Realize that the price of a product is an objective measurement of relative scarcity and not a subjective measurement of moral or ethical “value.”

Standards:

5.2.1 - Describe the entrepreneurial characteristics of early explorers (e.g. Christopher Columbus, Francisco Vasquez de Coronado) and the technological developments that made sea exploration by latitude and longitude possible (e.g. compass, sextant, astrolabe, seaworthy ships, chronometers, gunpowder).

5.2.2 - Explain the aims, obstacles, and accomplishments of the explorers, sponsors, and leaders of key European expeditions and the reasons Europeans chose to explore and colonize the world (e.g. the Spanish Reconquista, the Protestant Reformation, the Counter Reformation).

7.2.5 - Describe the growth of cities and the establishment of trade routes among Asia, Africa, and Europe; the products and inventions that traveled along these routes (e.g. spices, textiles, paper, steel, new crops); and the role of merchants in Arab society.

7.8.2 - Explain the importance of Florence in the early stages of the Renaissance and the growth of independent trading cities (e.g. Venice) with emphasis on the cities' importance in the spread of Renaissance ideas.

7.8.3 - Understand the effects of reopening of the ancient “Silk Road” between Europe and China, including Marco Polo’s travels and the location of his routes.

7.11.2 - Discuss the exchanges of plants, animals, technology, culture, and ideas among Europe, Africa, Asia and the Americas in the fifteenth and sixteenth centuries and the major economic and social effects on each continent.

7.11.3 - Examine the origins of modern capitalism: the influence of mercantilism and cottage industry; the elements and importance of a market economy in seventeenth-century Europe; the changing international trading and marketing patterns, including their locations on a world map; and the influence of explorers and map makers.

Economic Principles:

Principle 4: People respond to incentives in a predictable manner.

Principle 5: Voluntary exchange benefits the traders.

Principle 6: Markets work best when competition, incentives, information and property rights exist.

Materials:

- World Map
- Spice Play
- (Optional) costumes for play

Discussion Question:

“Why did Columbus, Vasco da Gama, and Magellan attempt to sail around the world?”

Teaching procedures:

Review the historical and economic background with the students. Have them complete the table on the next page. After each event, decide:

1. Whether the event would cause spices to be relatively more (M) or less (L) scarce or have no effect (N)
2. Whether the relative price would rise (R) or fall (F) or not change (N)
3. Whether the change (if there was one) was a change in supply (S) or demand (D)
4. Whether the change in supply or demand was an increase (I) or decrease (D)

Do not correct their tables.

Stage the Spice Price Play. Gather whatever costumes you can find (hats are helpful) and use the accompanying maps to trace each explorer’s voyage on the overhead. Be sure that students can identify the oceans and continents as the play takes place. Have students come to the overhead in teams and draw the voyage on the transparency as the play takes place. Make one transparency for each voyage.

Assessment:

The Spice Price Play

**Assessment Table
Voyages of Discovery**

Date	Event	Relative Scarcity	Relative Price	Supply or Demand	Increase or Decrease
1350	Black Plague				
1453	Constantinople conquered				
1492	Columbus reaches America				
1502	da Gama returns from India				
1512	Portuguese control sea routes to Spice Islands				
1522	Magellan's crew circumnavigates the world				

Economic Background

Supply is the amount of a product that sellers are willing to offer at different prices. The amount that sellers are willing and able to offer has a great deal to do with the **cost of production**. If production costs increase, sellers will either increase the price they charge or decrease the amount that they offer at the old price. Similarly, decreased production costs mean lower prices and/or a greater quantity.

Demand is the amount of a product that buyers are willing and able to purchase at different prices. The amount that buyers are willing and able to buy at each price is influenced by their income, the attractiveness of the product, and other things. The interaction of supply and demand determines the **relative scarcity** of a product. Relative scarcity is simply how scarce a good or service is compared to all others. For example, an ounce of saffron is scarcer than an ounce of water. This is a paradox because an ounce of water might save a life while an ounce of saffron does nothing except add a certain taste to food. Yet the price of an ounce of saffron in a supermarket today is about \$270 and a pound is about \$4,300. People often think of caviar, lobster, and steak as expensive, but they don't come close to saffron! One of the reasons saffron is so expensive is because the costs of production are very high. Saffron comes from the purple crocus, and it takes 70,000 to 100,000 flowers to produce one pound of saffron.

A product will become relatively scarcer and the price will increase if one of two things happens: demand increases or supply decreases (costs increase). A product will become relatively less scarce and the price will fall if one of two things happens: demand decreases or supply increases (costs fall).

Event	Production costs	Relative Scarcity	Price
Demand increases		Increases	Increases
Supply decreases	Increase	Increases	Increases
Demand decreases		Decreases	Decreases
Supply increases	Decrease	Decreases	Decreases

Historical Background

People in Europe wanted spices for many different reasons. Because they kept meat through much of the winter, it would often smell bad and taste bad. Spices helped to cover up both the bad taste and smell. In addition, when the Black Plague hit Europe, many thought that nutmeg could be used as a preventive. As a result, **demand for nutmeg increased.**

While the demand for spices was high, supply was not. The major source of cloves, nutmeg, and mace is a small group of islands in what is now Indonesia. They are called the Moluccas and have become known as the Spice Islands. Arab traders protected this source of spices, and controlled the spice trade, reaping huge profits by selling the spices to Europeans.

There were two major routes to obtain spices. One was called the Silk Road, a series of trade routes that connected China with the West. This route had been used since Roman times, but was closed from time to time due to bandits. The destination of spices for Europe over the Silk Route was Constantinople. From there, Venetian merchants transported the spices to Europe, monopolizing trade from the overland source. The other route was a voyage from the South China Sea, across the Indian Ocean, and through the Red Sea to Alexandria. In either case, the journey was filled with danger. The overland route was subject to bandits, scorching deserts, treacherous mountain passes, freezing cold, and flooding rivers. Sailors experienced shipwreck, pirates, and a short sailing season subject to the whims of the monsoons.

In both cases, the spices changed hands many times, doubling in price with each exchange. Thus, a pound of cloves that might cost 10 cents at the source could end up costing \$10 by the time it reached a customer in Europe. Each time the spices traded hands, the cost of supplying them to Europe increased, increasing the costs of production. The cost to European merchants included a healthy profit for the Arabs who monopolized the trade with Genoa and Venice and an equally healthy profit for Genoa and Venice who monopolized the trade with the rest of Europe. In fact, some claim that the Spice Trade financed the Italian Renaissance. Profits were so high that Venice and Genoa were constantly at war attempting to control the trade.

When Constantinople fell to the Ottomans in 1453, the connection between the overland route and Europe was effectively cut. This left only one source of spices, Alexandria. As a result, **the supply of spices decreased.**

Incentives to find a sea route to the source of spices were very high. If the dangers of the overland route could be overcome, and if the payments to middlemen along the way could be eliminated, production costs would fall dramatically, and profits could be very generous. In Spain, Columbus suggested a westward route to the source of spices. Since the Europeans knew of only three continents, Europe, Asia, and Africa, it made sense that the westward route would get a ship to the East. Ferdinand and Isabella had just fought a costly war to expel the Arabs from Spain. With their victory over the Moors at the Alhambra, the victory was theirs and so was an empty treasury. Columbus's promise of quick riches through spices was too good to pass up. Columbus did indeed

reach a new world, but not the one he was looking for. His voyage **did not change the cost of supplying spices**. In the sense that he did not find what he was looking for, Columbus failed.

The Portuguese had been pursuing a sea route to the spice source for years. Success seemed assured when Bartolomeu Dias rounded the Cape of Good Hope in 1486, but an unwilling crew forced him to turn back to Portugal. It wasn't until 1498 that Vasco da Gama finally reached Calicut on the coast of India and was able to trade directly with the Arab and Indian suppliers, drastically **reducing the cost of supplying spices** to Europe. In 1511, the Portuguese sailors Afonso de Albuquerque, Francisco Serrao, and Ferdinand Magellan capture Malacca, the major trading city for spices from the East Indies, again **reducing the cost** of supplying spices to Europe. Finally, in 1512, a ship dispatched by Albuquerque reached the islands of Ternate and Tidore in the Moluccas, the source of nutmeg, mace, and cloves. No longer would Europeans have to deal with middlemen. The **cost of supplying spices dropped** dramatically, even though profits were very high. Ferdinand Magellan's crew took up Columbus's challenge and did, indeed, sail west to reach the East, sailing down the coast of South America and through the Straits of Magellan in Patagonia. Unfortunately, the voyage was so expensive that it resulted in **no change in the cost of supplying spices** to Europe. In addition, Magellan lost his life in the Philippines.

The Spice Price Play

Narrator: “**Act I – A family in Europe in 1350**”

Mother: “Well Jed, I guess it’s time to slaughter the cattle. Have a nice day.”

Father: “Wait a gol dern minute here Ida. I’m tired of killin’ all these animals, only to let the meat sit around all winter. Can’t you come up with some new recipes for rotten meat? I’ll tell ya, come December, that stuff starts tastin’ pretty bad.”

Mother: “Well, I’ve heard of this new spice that Mathilda was talkin’ about the other day called pepper. She says that it takes some of the awfulness away. What do ya think?”

Father: “Might as well give it a try. Where do ya git it?”

Mother: “Well, I can git some in town, but it costs a pretty penny.”

Father: “Having weighed the present and future **benefits and costs** of the alternatives, I think we should go for the pepper.”

Mother: “As long as you’re not going to be belly achin’ to me later on when we don’t have any money for your mead. I’m glad you know that every **choice** has a **cost**. If you’re willin’ to pay the **opportunity cost**, it’s OK with me. I think I’ll pick up some of that nutmeg while I’m at it. We’ve been pretty lucky avoidin’ the Black Plague, and Martha was tellin’ me that that stuff keeps folks healthy.”

Father: “Go for it.”

Narrator: “And so she did.”

Narrator or Moderator: As a result of this new use for nutmeg (preventing the Black Plague), what happened to the price of nutmeg in Europe? Why? (Students review the answers on their worksheets and discuss the change.)

Narrator: “**Act II -- Prince Henry’s School of Navigation, 1434. Prince Henry is talking to one of his young sailors, Gil Eannes.**”

Prince Henry: “Now Gil, you know what I’ve told you. Go on out there and sail past Cape Bojador. Show ‘em how it’s done. If we can get past that Cape, we can go on down the coast of Africa and get some of those riches

that were all over the streets of Ceuta.”

Gil Eannes: “Uh, I don’t know. You know what they say about that mean old green sea of darkness ...serpents and monsters and man-eaters, and if you go too far, you’ll burn black from the sun and get eaten and die a horrible death. God didn’t intend for people to go there. Thirteen better men than I have failed, and I have failed twice.”

Prince Henry: “Gil, my main man, what are you talking about? That’s all rubbish. Just do it man.”

Gil: “I don’t know, man, I’ve heard people **respond to incentives** in a predictable manner.”

Prince Henry: “You cannot find a peril so great that the hope of reward will not be greater.”

Gil: “You talking money, dude?”

Prince Henry: “Serious money, dude.”

Gil: “I’m there, my Lord.”

Narrator: “And so he was.”

Narrator: “Act III – Constantinople, the court of Mehmet the Conqueror 1453---19 years after Gil Eannes set sail to Cape Bojador”

Venetian Merchant: “Oh noble and great and wise and virtuous and handsome and generous and not fat (did I mention handsome) Mehmet the Conqueror, I come bearing gifts from Venice.”

Mehmet: “And what would you have in return, oh weasely one?”

Venetian Merchant: “You are too kind, oh great one. I ask nothing but what we have always had---permission to pass through your great Golden Horn to trade with the merchants of the east.”

Mehmet: "Well, son of a dung beetle, I don't think so. Guards, cut off his head, then kill him."

Narrator: "And so they did."

Narrator or Moderator: As a result of the closing of Constantinople to east/west trade, what happened to the spice prices in Europe? Why? (Students review the answers on their worksheets and discuss the change.)

Narrator: "Act IV. Scene 1 -- In the home (castle, palace, whatever) of Isabella and Ferdinand in 1492, after the fall of Grenada. Queen Isabella and King Ferdinand meet with Columbus."

Isabella: "So, Chris, what do you say, how about a little trip? Right down the coast of Africa, across the Indian Ocean, and spices everywhere. No taxes to pay, pepper, nutmeg, cinnamon, cloves at cut-rate prices. Maybe a little gold, too. I hear that pepper can be bought for 3 ducats in India, costs 68 in Cairo, and the Venetians sell it for 130. If we can find a way to get to Calicut by sea, we will all be in the money."

Columbus: "Well, my lady, the spices and gold are right, but the direction is wrong. I was thinking about heading west."

Isabella: "OK, here's the deal. I'll talk to my bankers and see if they'll back you on this. If they give me the OK, you go, but you better come back with some hot stuff, or the **opportunity cost** will have been much too high. You know that **every choice has a cost** don't you? There's plenty more things Ferdie and I could do with the money we borrow, isn't there Ferdie?"

Ferdinand: "Indeed, my little bag of gold. We are all aware that government economic policies have both **benefits and costs**. Our **monetary and fiscal policies** influence the economy you know."

Isabella: "So Columbus, go and bring back spices and gold."

Narrator: "And so he did....sort of."

EFX: Columbus Columbus makes his voyage on the world map.

Narrator: "Act IV. Scene II --- Columbus returns to Court."

Isabella: "So, Chris, how was the trip?"

Columbus: "Oh, it was alright, I guess."

Isabella: "So, what did you bring me?"

Columbus: "Well, I brought back some Indians."

Isabella: "Nice, nice, very interesting. Where are the gold and the spices?"

Columbus: "Well, it's sort of a long story. Maybe we should discuss this over dinner, or breakfast three weeks from now, or some other time?"

Isabella: "I know you're not telling me that...."

Ferdinand:
(Interrupts
Isabella) ".....Well, my little budding blossom, looks like you blew it big time."

Narrator: "And so they had."

Moderator or Narrator: As a result of Columbus' voyage, what happened to spice prices in Europe? Why? (Students review the answers on their worksheets and discuss the change.)

Narrator: “Act V. Scene I -- 1500 The Court of King Manuel. The king is speaking to Vasco da Gama.”

King Manuel: “All right, now look Vasco, this is the way it’s going to be. I’m tired of all this frog leaping down the African coast. I mean we’ve got gold, and we’ve got slaves, and we’ve got salt, and we’ve got pepper, which isn’t very good, but I want spices, I mean big-time spices. I asked Bart (you know, the Diaz kid) to do this, and he sailed around that Cape of whatever, but his wimpy crew made him turn back. Now go down there, sail around the Cape, up the east coast of Africa, across the Indian Ocean, and get those spices.”

Vasco da Gama: “You got it, my lord. I will do as you command.”

Narrator: “And so he did.”

EFX: Vasco Vasco makes his voyage on the world map

Narrator: “Act V. Scene II -- Vasco has returned to court after his successful voyage to India.”

King Manuel: “Soooo, how was the trip?”

Vasco: “It was great. We had to kill quite a few folks along the way, but we got what we wanted---spices---lots of them.”

King Manuel: “Now we won’t have to depend on those snout-nosed Venetians any more. After all, markets work best with **competition**. Good work, good work. Vasco, you da man!”

Narrator: “And so he was.”

Moderator or Narrator: As a result of da Gama’s voyage, what happened to spice prices in Europe? Why? (Students review the answers on their worksheets and discuss the change.)

Narrator: “Act V. Scene III ---It’s 1512, 78 years after Gil Eannes rounded Cape Bojador and the Envoy of Afonso de Albuquerque is at the Court of King Manuel the Fortunate”

Envoy: “My lord, my lord, great news, we have found them.”

King Manuel: “Great, I’ve been looking for them for days, I can’t do a thing without them, I just can’t see. My doctor says it happens when you hit 40, but I didn’t believe her. Anyway, hand them over and thanks very much.”

Envoy: “No, no, my lord, not your glasses, the spices!”

King Manuel: “Did the cook lose the spices? He usually takes very good care of them!”

Envoy: “No, no, my lord, not your spices in the palace---the Spice Islands, the source of the spices. We have sailed over 3,000 miles through the Malaccan Straits to reach the Moluccas---the source of nutmeg, mace, and cloves. We have found the two islands of Ternate and Tidore. We now hold the ports of Singapore, Hormuz (Persian Gulf), Ceylon and Ternate and Tidore, Diu and Goa (India), and Macao (China). We now trade with suppliers in Siam, Malacca, the Spice Islands, and China. We have destroyed the Venetian trade; our spice prices are 1/5 that of Venice. There is no Egyptian-Venetian trade. My lord, the spice trade is no longer a Mediterranean trade; it is an Atlantic trade.”

King Manuel: “Great. How did the people respond to our desire for their spices?”

Envoy: “My Lord, they were delighted. **Voluntary exchange** benefits the trader you know.”

King Manuel: “So I guess that means I’m a pretty rich guy now.”

Envoy: “Indeed, my lord.”

King Manuel: “Great. Now will you help me find my glasses?”

Envoy: “Indeed, my lord.”

Narrator: “And so he did.”

Moderator or Narrator: As a result of a direct route to the source of the spices, what happened to the spice prices in Europe? Why? (Students review the answers on their worksheets and discuss the change.)

Narrator: “**Act VI. Scene I -- 1519. Magellan is in the court of King Charles VI of Spain, Holy Roman Emperor Charles I.**”

King Charles: “Well, Ferdinand, what’s up?”

Magellan: “ Oh great and glorious King, or Emperor, or Roman, or...what do I call you?”

King Charles: “Your highness will be fine.”

Magellan: “Great. I’ll get right to the point. There are huge profits to be made in spices. The Portuguese control the trade by sailing around Africa, over to India, and down into the Spice Islands. Let’s try what that Columbus guy did a few years ago, but not sail west because we will run into that big island or whatever it is. Let’s sail west, then south, and find the passage that will allow us to go around America and over to the Spice Islands.”

King Charles: “Didn’t you suggest this to King Manuel?”

Magellan: “Well, yes, but he and I had a falling out.”

King Charles: “I see, OK, go ahead.”

Magellan: “Thanks, King or Emperor, or whatever.”

King Charles: “Whatever!”

Narrator: “**Act VI. Scene II -- 1522. The court of Charles I - One of Magellan’s captains, Juan Sebastian del Cano, addresses King Charles.**”

del Cano: “Your highness, I have good news and I have bad news.”

King Charles: “Why are you here? Where is Magellan?”

del Cano: "Well, that's the bad news---he died in the Philippines."

King Charles: "What? How did that happen?"

del Cano: "Well, it's sort of a long story. Do you want to hear the good news?"

King Charles: "Yes, let's go with the good news."

del Cano: "The good news is we made it. We truly sailed around the world. We reached the east by sailing west."

King Charles: "Great news. Does that mean I'm rich? Now we can undercut our dear and Christian brethren, the Portuguese, offer spices at a lower price, and corner the market?"

del Cano: "Well, not exactly. You see the journey is very long and nowhere near as profitable as the Portuguese route. We can earn a living with this route, but we will never get rich."

King Charles: "Bummer!"

Moderator or Narrator: As a result of the circumnavigation of the globe, what happened to the spice prices in Europe? Why? (Students review the answers on their worksheets and discuss the change.)
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Assessment Table

Have the students re-evaluate their answers to the table. Conduct a discussion of the voyages, their impact on supply and demand, and prices.

Lesson 5
Economic Principles in Action Across the K-8 Curriculum

Economic Incentives and the U.S. Constitution

A Grade 8 Lesson

Objectives:

Upon successful completion of this lesson, students will:

- Define and evaluate the role of private property as an incentive in conserving and improving scarce resources
- Connect the teaching of the U.S. Constitution to important economic concepts of private property and incentives

Prior Knowledge:

Scarcity, choice, alternatives, resources

Economic Principle:

People respond to incentives in a predictable manner.

California History/Social Science Standards :

8.2 - Students analyze the political principles underlying the U.S. Constitution and compare the enumerated and implied powers of the federal government.

8.3 - Students understand the foundation of the American political system and the ways in which citizens participate in it.

8.4 - Students analyze the aspirations and ideals of the people of the new nation.

Materials:

- 24 paper clips
- Overhead transparency
- Overhead transparency marker
- *Chickenomics: A Fowl Approach to Economics* -Optional video available from:
WRI Films
11722 Sorrento Valley Road
San Diego, CA 92121
(800) 972-3635

Motivation:

Pose the question: "Why are some countries rich and others poor?" Accept various answers, but steer the discussion to the role that government plays in setting appropriate rules to encourage productive activity.

Teaching procedure:

1. Review the basic characteristics of a market economy. Use Visual 5-1 and explain each item in some detail. The film *Chickenomics* reinforces these concepts in a humorous way that is appropriate for grades 4-12.
2. Distribute a copy of Handout 5-1 and review the specific sections of the U.S. Constitution that deal with economic activity. Use examples for each specific clause

and emphasize the economic effects of these rules with special emphasis on incentives and property rights.

3. Divide the class into small groups and distribute copies of Activity 5-1 to each group. Allow them time to read each of the examples and categorize them. Ask each group to report on one of the answers and allow some time for discussion.

The answers are:

4 Commerce Clause

5 Contract Clause

2 Copyright Clause

6 Coinage Clause

1 Taxation Clause

3 Due Process

4. Bring the class together and discuss the importance of private property and Adam Smith's concept of self-interest in motivating individuals to work for the common good. Display Visual 5-2 to reinforce the idea that a system built on self-interest will produce more consistently and successfully than one built on altruism. Our Constitution is very consistent with Smith's view on incentives and self-interest.
5. Tell the students, "Now we are going to create a situation where private property rights are not clear. We will see how incentives are related to property rights."
6. Ask for one representative from each small group. These students will be "fishing for extra points." You will need about 6 volunteers and it is important that they see themselves as representing their group. Have the students come to the front of the room while you put 24 paper clips on the overhead projector so the class can see the shadows of the clips on the screen.
7. Tell the student representatives that each member of their small group will receive extra credit points depending on the success of their representative in this simulation. The simulation will have two rounds of one minute each. In each round the students will be paid bonus points redeemable on their next exam. In Round One, each clip they pick up is worth 1 bonus point. (Thus, if one student picks up all the clips, his/her group gets 24 points). After Round One is over, begin Round Two. In Round Two any remaining clips collected will be worth 2 bonus points. Make sure the students understand that only those clips left on the overhead after the first round will be available to be picked up in the second round. All clips must be turned in immediately after each round ends.
8. Ask if everyone understands. After you have answered all questions, begin Round One. There may be some talk of colluding, but before the minute is up, someone will have gathered **all** of the clips. Reward the students with the appropriate points. Write the number of points earned in Round One on the board.

9. Now place a transparency on the overhead and divide it into 6 parts. Place clips in each of the cells. Assign each cell to one of the students and tell them they have exclusive use of that cell, but they cannot touch any clips in other cells. The payoffs will be exactly the same: 1 point in Round One and 2 points in Round Two.
10. Ask if everyone understands. After you have answered all questions, begin Round One. In this round students will generally refrain from picking up their clips. Stop the round after one minute and count any points earned. Then begin Round Two and you should see all the clips returned to you. Tabulate the total points earned in the second game and put the score on the board.
11. Ask the students: "If the goal of society is to get the most value from its scarce resources, when should the clips have been picked up?" Answer: In Round Two when their value was twice as great. Note that this only happened the second time the game was played, but not the first time. Ask: "What was different?" The students should be able to see that when property rights were assigned, their behavior changed and became more efficient.
12. The U.S. Constitution and the federal (as well as state and local) government make it their business to enforce property rights. Without this kind of guarantee of exclusive use of property, it would not be in your self-interest to make improvements on your land, for example. In such a case, resources would not be used efficiently and output would decrease.

Assessment:

1. Students should be able to apply the lesson about the importance of property rights to the problem associated with endangered species. Ask them to write a brief essay on this paradox: There are many animals listed as "endangered species," but you will never find chickens on that list. Why? What relevance does this have to our property rights simulation? What relevance to the U.S. Constitution?
2. Students should be able to relate the endangered species situation to the lack of property rights. Chickens are privately owned and provide benefits to their owners. If there were a projected shortage of chickens, the increase in price would provide incentives for the owners to breed more chickens thus alleviating the shortage and ultimately driving the price down.

Market Economy Characteristics

1. Private Property
2. Consumer Sovereignty
3. Self-interest Motives
4. Competition
5. System of Markets and Prices
6. Limited Government

Economic Rules in the U.S. Constitution

Contracts

Article I Section 10 states that *“no state shall...pass any bill of attainder, ex post facto law, or law impairing the obligation of contracts.”*

Commerce

Article I Section 8 states that Congress shall have the power *“To regulate Commerce with foreign nations, and among the several states...”*

Taxation

Article I Section 8 states that Congress shall have the power *“to lay and collect taxes.”*

Coinage

Article I Section 8 states that Congress shall have the power *“To coin money and regulate the value thereof... and to provide for the punishment of counterfeiting.”*

Article I Section 10 gives Congress this power exclusively: *“No state shall coin money.”*

Copyright

Article I Section 8 states that Congress shall have the power *“To promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writing and discoveries.”*

Due Process

The Fifth Amendment states that no person shall be *“deprived of life, liberty, or property, without due process of law.”*

The Fourteenth Amendment adds *“nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.”*

Do You Know Your Economic Protections Under the Constitution?

Read each of the following and match it to one of the protections guaranteed by the U.S. Constitution.

1. An irate American refuses to pay federal taxes because they are simply too high.
2. Pfizer Drug Corporation patents a drug that cures the common cold. Another drug company copies the chemical formula and sells it at half the price.
3. The State of California seizes all of the houses in your neighborhood in order to demolish them and build a football stadium on your property.
4. The State of California puts a tariff on tomatoes imported from Mexico.
5. A politician campaigns for office saying that if he is elected he will make all current property leases null and void.
6. A friend of yours uses a high-speed color copier to create dollar bills that look just like U.S. money.

Place the number of the example above next to the Constitutional clause that is violated.

- ___ Commerce Clause
- ___ Contract Clause
- ___ Copyright Clause
- ___ Coinage Clause
- ___ Taxation Clause
- ___ Due Process

Adam Smith Speaks

“It is not from the benevolence of the butcher, the brewer or the baker that we expect our dinner, but from their regard to their self-interest.

We address ourselves not to their humanity, but to their self-love, and never talk to them of our necessities, but of their advantages.”

---*The Wealth of Nations* - 1776.