Unit 1

Basic Economic Concepts

Overview of Unit 1

Basic Economic Concepts

Introduction:

One of the main purposes of this *Energy, Economics, and the Environment (EEE)* curriculum is to help students understand the economic implications of basic public policy issues concerning forests, water, and energy. Unit 1 teaches the basic economic concepts that students should know to be able to do Units 2-4 effectively. The key concepts are **goods** and **services, productive resources, scarcity, opportunity cost, trade-offs, and price.**

In each activity in this unit, students use play dough to help them learn the economic concepts. These motivating activities are adaptations of lessons found in the popular *Play Dough Economics* curriculum published by the Indiana Department of Education and distributed by the National Council on Economic Education (NCEE). See www.ncee.net.

An optional curriculum that can be used with this unit is the five-part *Econ and Me* video series, produced by the Agency for Instructional Technology and the NCEE. Using these videos to teach the economic concepts presented in this unit is not required, but will help those teachers who are not confident about their knowledge of basic economics. *Econ and Me* also teaches students how to use the Decision Tree model, which is used throughout this curriculum. For ordering information see www.ncee.net.

Learning Objectives:

<u>After completing Unit 1, students will be able to:</u>

1. Understand and apply the economic concepts of goods and services, productive resources, scarcity, opportunity cost, trade-offs, and price.
2. Analyze a problem using a decision-making model.

Unit Outline:

I. Teaching Activities
   1. Goods and Services
   2. Resources and Production
   3. Scarcity
   4. Opportunity Cost and Trade-Offs: Focus on Consumers
   5. Opportunity Cost and Trade-Offs: Focus on Producers

II. Answers to Selected Teaching Activities

III. Play Dough Recipe

Activity 1

Goods and Services

Teaching Objectives: After completing this activity, students will be able to:

1. Explain that goods and services are things that people want.
2. Identify the difference between a good and a service.

Time Allowed: 30-40 minutes

Materials:
- Enough play dough for each student to produce a small sculpture
- Examples of goods
- Pictures showing people performing services

Vocabulary/Concepts:

- *Goods:* tangible items that satisfy peoples' wants, such as shirts, automobiles, wooden boards, gasoline, or paper.
- *Services:* nonphysical results of production, activities that satisfy people's wants. They are consumed as soon as they are produced. Examples include the services of a dentist, trash collector, or utility company.

Goods are, by definition, things that people want, and people typically must pay to get them. Items that people do not want are **garbage** or **trash.** People have to pay to get *rid* of these! Some recyclable materials, such as aluminum, command a positive **market price,** and could be considered goods.

Teaching Procedure:

1. Explain that all individuals want to have a wide variety of things. Ask students to identify things they would like to have. Write these things in a "wishing well" that you draw on the board or on the overhead.

2. Discuss the students' wishes. Discuss other more mundane wants that people have. Explain that the tangible things that people produce to satisfy wants are called **goods.**

3. Explain that **services** are also things that people want. Teach this difference, showing pictures of people performing services. Let some students pretend to be performing some service, and let the other students try to guess what it is.

4. Pass out enough play dough for each student to make a small **good.** Allow five to eight minutes to produce the goods. Go around the room and examine each student's work. Let each student describe his or her work. Discuss whether the items are indeed goods.

5. Repeat the exercise. This time tell students to produce a play dough sculpture of someone performing a **service.** Discuss the services the students produced.

6. Have students complete the Goods and Services worksheet. Discuss student responses.

Teaching Tips:

1. You will want to lay the groundwork for this and other lessons. Some possible rules: use the entire piece of play dough to make the good, keep the play dough on the desk, and don't play with the play dough as the teacher discusses the lesson.

2. The goods the students produce will probably focus on toys, candy, pets, etc. Explain that more mundane things (clothes, tools, paper, spoons, etc.) are also things that people want.

Key Questions to Ask Students:

1. What is a good? *(a tangible item that people want)*
2. What is a service? *(activities that satisfy people's wants)*
3. What do your parents produce — goods or services? *(Answers will vary.)*
4. What do you want to produce when you grow up — a good or service?
   (Answers will vary.)

Bulletin Board Ideas:

1. Draw or make a "wishing well." Have students put their wishes in it and identify whether these wishes are a good or involve a service.

2. Divide the bulletin board into two columns, one for goods and one for services. On 3 x 5 cards, write names or put pictures of goods and services, especially those that relate to energy and the environment. Examples are coal, trash collector, oil, wood, aluminum cans, electrical pipe repair person, water meter reader, oil pipeline repair person. Classify the examples and place into the correct column. Have students find other examples.

Student Journal Ideas:

1. After the play dough activity, finish this sentence: "Today I learned that ...."
2. Collect or draw pictures of different goods or services.
3. Write a paragraph telling what good or service you want to provide when you grow up.

Goods and Services

1. Draw a picture of a **good** and a picture of someone doing a **service.**

2. In the blanks put G if the item is a GOOD, put S if the item is a SERVICE, and put N if it is **NEITHER** a good or a service.

_____ haircut	_____ apple	_____ teaching students
_____ garbage	_____ gold	_____ wood boards
_____ recycling truck	_____ collecting trash	_____ fixing electric wires
_____ paper cup	_____ trash	_____ trash bin
_____ oil pipe	_____ fixing an oil pipe	_____ gas meter

3. Write a paragraph telling what **good** or **service** you want to provide when you grow up. Tell *why* you want to provide that good or service. Who would want your good or service?

_____

_____

_____

_____

Activity 2
Resources and Production

Teaching Objectives: After completing this activity, students will be able to:

1. Explain that goods and services must be produced.
2. List the three basic categories of productive resources.
3. Give examples of natural resources (land), human resources (labor), and capital resources.
4. Diagram the basic Production Model.
5. Explain how energy is required in all production and consumption.
6. Explain how production and consumption will necessarily affect the environment.

Time Allowed: Two 30 - 40 minute periods

Materials:
- A small amount of play dough for each student
- Pencils, ruler, scissors, and other "capital resources"
  (Optional: *Econ and Me* video 4 — "Production")

Vocabulary/Concepts:

- *Productive Resources:* the inputs (natural, human, and capital) used to produce goods and services.
- *Production:* combining productive resources to obtain goods and services.
- *Natural Resources:* resources found in nature which are used in production, such as air, water, trees, or the land itself.
- *Human Resources:* the people who work to produce goods and services.
- *Capital Resources:* special goods, such as buildings, tools, equipment, and machinery, which are used to produce *other* goods and services. Human skills gained through education and training are referred to as *human capital.*
- *Energy Resources:* resources such as oil, natural gas, uranium, and coal.

Producers (entrepreneurs) take the initiative to purchase **productive resources** (inputs) and use them to produce the goods and services (output) they think **consumers** will purchase. Producers are seeking to make a **profit.**

All production and consumption require the use of some form of **energy.** All production and consumption also pollutes the environment to some degree. This unavoidable effect isn't all bad since societies must have goods and services to survive and prosper. Societies must choose how much pollution they are willing to tolerate. Zero pollution is impossible.

Teaching Procedure:

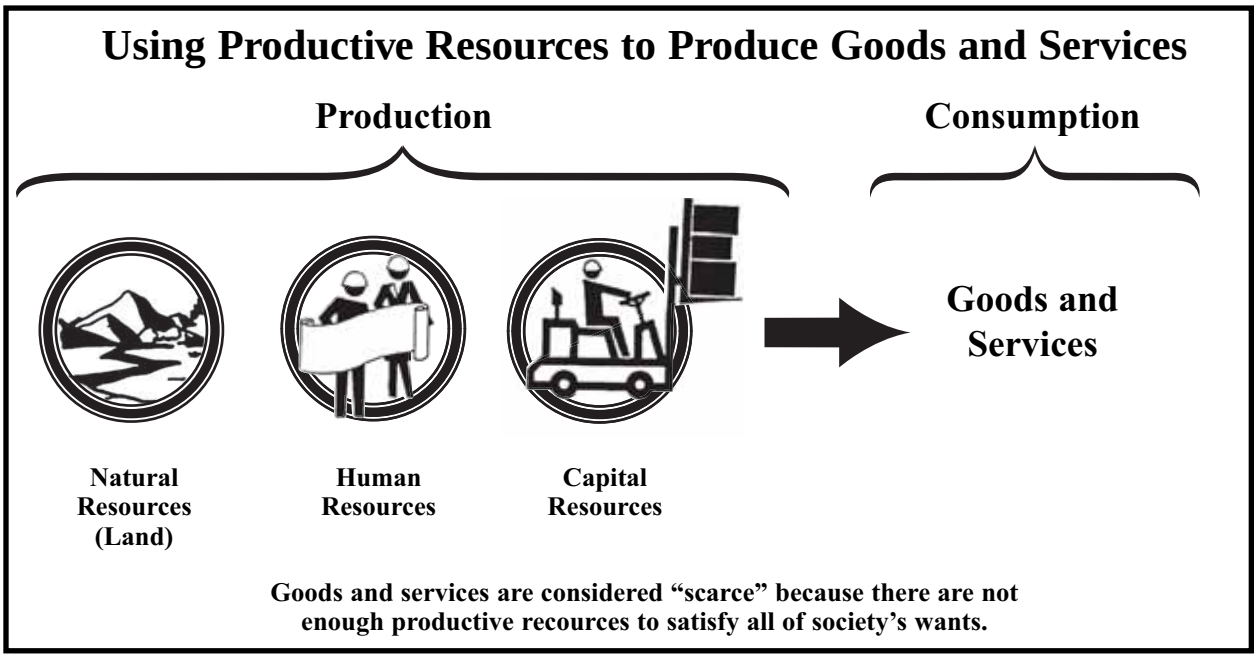
If you decide to explore the topic of production in more depth, this lesson can be expanded significantly. There are many creative activities that your students can do.

1. To introduce this lesson, ask students to recall from Lesson 1 some of the different **goods** and **services** that people want. Ask how people get these goods and services. *(Businesses produce them. The goods are then transported by truck, rail, etc., to the stores. Transportation costs are built in to the price of the goods.)*

2. Explain and discuss the difference between a **producer** and a **consumer.**

3. Explain that businesses use **productive resources** to produce goods and services. Use actual examples and/or pictures of the three types of productive resources and explain the differences between them. Use the Production Model below in your discussion.

Figure 1



4. Ask students to produce a **good** using play dough. The play dough represents the **natural resources,** the students represent **human resources,** and any small "tool" (pencil, ruler, scissors, desk, etc.) represents **capital resources.** Students can use their "capital" to help fashion their good or to make designs and marks that make it look more realistic.

5. Discuss student creations. Have several students identify the **productive resources** that would be necessary to produce a real good. Write these on the board.

6. (Optional) Show and discuss *Econ and Me* video 4 — "Production."

7. Have students complete Handout 1. Discuss student responses.

8. Discuss the **energy** that is required to produce various **goods** and **services** (Figure 2, page 6). Also discuss how all production and consumption results in some pollution of the environment (Figure 3, page 7). Have students complete worksheet 2. Discuss student responses.

Teaching Tips:

1. Make a point to identify productive resources when they appear in stories, textbooks, and classroom discussion. As you learn to use the term more frequently, your students will learn it naturally and will begin to use it themselves.

2. Emphasize that the "capital" (pencils, rulers, desk, etc.) your students use in production represents real tools, machinery, buildings, and equipment that businesses use.

Key Questions to Ask Students:

1. Where do goods and services come from? *(They must be produced.)*
2. What is the difference between a producer and a consumer? *(Producers make goods and services; consumers buy and use goods and services.)*
3. What are productive resources? *(basic things we need to produce goods and services)*
4. What are the three basic types of productive resources? *(natural, human, capital)*
5. What are examples of the different types of productive resources? *(answers will vary)*
6. What are some examples of energy resources? *(oil, natural gas, uranium, coal, etc.)*
7. Is energy always necessary when we produce and consume goods and services? *(yes)*
8. Does production and consumption always result in some pollution? *(yes)*
9. Can a community ever have zero pollution? *(no)*

Bulletin Board Ideas:

1. Divide the bulletin board into three columns. Cut out pictures from magazines and classify them in three columns labeled natural, human, and capital resources.
2. Create a bulletin board for each of the productive resources.
3. Create a bulletin board titled "Our Energy Resources."
4. Illustrate and label the basic production model. Add to the model by showing a. how energy is needed for production and consumption (Figure 2, page 6) and b. how the wastes of production consumption impact the environment and other people (Figure 3, page 7) , (Figure 5, page 11).

Student Journal Ideas:

1. After the play dough activity, finish this sentence: "Today I learned that ...."
2. List and classify what productive resources are needed to produce teaching services.
3. List what types of *energy* are needed for your school.
4. Identify the different types of pollution resulting from a day in your school.
5. Draw and label the basic production model.

Productive Resources - Handout 1

1. Draw and color a picture of someone performing a **service.**

2. Define **productive resources** _____

   _____

   _____

3. In the blanks below, list some **productive resources** that would be needed to provide the
   service you drew above.

Natural Resources	Human Resources	Capital Resources
_____	_____	_____
_____	_____	_____

4. In the space below, diagram the **production model.** Be sure to label the parts of the model.

The Production Model

Productive Resources - Handout 2

1. Draw and color a picture of someone producing a good.

2. List three different kinds of **energy** needed in the production you drew above.

   _____ _____ _____

3. List four kinds of **pollution** or **waste** that come from the production you drew above.

   _____ _____

   _____ _____

4. Make four small drawings that show how you use energy in your home.

5. List three different kinds of **pollution** or **waste** that come from your home.

   _____ _____ _____

6. Is it possible to eliminate *all* the pollution from the production of the good above? _____

7. Is it possible to eliminate *all* the pollution that comes from your home? _____

8. In your drawing in question 1, you could eliminate pollution if you stopped production entirely. Do you think this is a good idea? _____ Discuss this option with your class.

Activity 3
Scarcity

Teaching Objectives: After completing this activity, students will:

1. Identify a scarcity situation.
2. Explain how the price of an item reflects its relative scarcity.
3. Identify things that are not scarce.

Time Allowed: 45 minutes

Materials:
- Play dough for each student
- Pencils, ruler, scissors, and other small articles of "capital"
- *Econ and Me* video 1 – "Scarcity" (Optional)

Vocabulary/Concepts:

- *Scarcity:* the condition of not being able to have all of the goods, services, or productive resources that you want.
- *Price:* the amount people pay to buy a good, service, or productive resource.
- *Relative Scarcity:* the scarcity of one good or service compared to another. The price of a good or service reflects its relative scarcity.

In economics, **scarce** does not necessarily mean "rare." Any item is considered scarce if the want for it exceeds its availability - *at a zero price*. However, some items are *more scarce* than others. Items that are highly valued and more limited in supply are relatively more scarce than those which are less highly valued and more abundant in supply. Differences in **prices,** which measure the exchange value of one good or service compared to another, reflect relative scarcity. This is why a car costs more than a pencil and why sports superstars earn more than teachers or plumbers. The concept of scarcity is so fundamental to economics that it is often called "the basic economic problem."

It is difficult to identify things that are *not* scarce. Examples would be saltwater at the seashore or the air you are breathing now. But even air is scarce to the scuba diver or astronaut and certainly clean air is scarce for the inhabitants of large cities. Trash and garbage are *not* scarce - in fact, we pay to get rid of them! Some recyclable materials, such as aluminum, are scarce in the economic sense because they command a price in the market. Other recyclable materials are less scarce and are worth little or nothing in the market. Certain plastics or newsprint may fit this category, depending on the situation.

Teaching Procedure:

1. (Optional) Show and discuss the *Econ and Me* video "Scarcity." (This video also teaches the concept of **productive resources,** which is covered in Activity 2.)

2. Display an inexpensive good (pencil, eraser, piece of candy, etc.) to the class. Ask which students would like to have the good — free! Since more than one student will want the good, you have a scarcity situation. (See "Scarcity Rule" described in Teaching Tip 1.)

3. Explain that this good and other goods and services are **scarce** (write on board). Explain the economic concept of **scarcity,** giving other examples.

4. Ask students to identify things that are *not* scarce (air we breath in class, snow in a blizzard, salt water at the beach, etc.) Be careful — in certain situations air *is* scarce (underwater, outer space). *Clean air* is scarce in smoggy cities. Explain that garbage and trash are *not* scarce. We must even pay to get *rid* of them!

5. Hand out some play dough to each student. Students must create a scarcity situation showing more than one person wanting a specific, scarce good. Allow about 10 minutes to create sculptures. Give some suggestions. Walk around the room, encouraging students in their work.

6. Have each student explain how his or her sculpture illustrates a scarcity situation. (Does it fit the "Scarcity Rule?")

7. Write "scarce" or "scarcity" on the board and practice spelling it with the students. Have students write and define the word in their journal.

8. Have students do the Scarcity worksheet. Discuss student answers.

Teaching Tips:

1. The "Scarcity Rule": A simple rule to help students determine whether an item is scarce is this: If the item is made *freely* available, does more than one person want it? If the answer is "yes," then the item is considered scarce. For example, if a teacher offers a free pencil to her class, more than one student will want it. In this situation, the pencil is scarce. If a piece of gold were offered, the same thing would happen. However, if students are freely offered a pencil or the gold, most will choose the gold. In economics *both* items are considered scarce, but gold is relatively *more* scarce, and thus commands a higher price.

2. Do not expect all of your students to master the concept of scarcity the first time. It's not that easy! However, if you use daily situations in your classroom to illustrate the concept ("Six students want the playground ball. It certainly is scarce!") and if you use the concept in the following energy and environmental units, most of your students will master it.

3. If time permits, use some of the teaching activities in the *Econ and Me* teachers manual.

Key Questions to Ask Students:

1. Give an example of a scarcity situation. *(Answers will vary.)*
2. Give an example of something that is not scarce. *(saltwater at the beach, air in the atmosphere, garbage)*
3. Why isn't garbage or trash considered scarce? *(Nobody wants it. We pay to get rid of it!)*
4. Why are all goods sold in a store scarce? *(At a zero price there would not be enough to satisfy everyone's want for them. The price of goods helps determine who gets them.)*
5. What are some examples of some services that are scarce? *(doctor, nurse, car repair, etc.)*
6. Are energy resources scarce? Why? *(Yes. They are not freely available. It takes scarce productive resources to produce energy.)*
7. In a store, what is the "clue" that tells us which goods are more scarce than others? *(the price of the goods)*
8. Why do athletic superstars make more money than your teacher? *(Their skills are relatively more scarce than the skills of your teacher. Team owners are willing to pay superstars huge salaries since their relatively scarce skills will make money for the team.)*

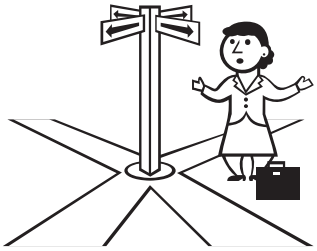
Bulletin Board Ideas:

1. Divide the bulletin board into two columns showing scarce goods and scarce services. Also indicate those that are "very scarce" and those that are "not very scarce." Or, divide the bulletin board into two columns, one showing scarce goods and services and the other showing things that are *not* scarce.
2. Create a bulletin board illustrating the "Scarcity Rule" (Teaching Tip 1).
3. Create a bulletin board showing scarce energy resources.
4. Create a bulletin board showing recyclable materials that are scarce (e.g., that have a price in the market, like aluminum) and those that may not be scarce (e.g., like some plastics). Students will have to research the market price of recyclable materials in their region. See Recycler's World – www.recycle.net

Student Journal Ideas:

1. After the play dough activity, finish this sentence: "Today I learned that ...."
2. Draw a scarcity situation.
3. List and describe scarce energy resources.
4. List items that are "very scarce" and those that are "not very scarce."
5. Write a paragraph explaining why some recyclable materials are considered "scarce" and some are not.
6. Write a paragraph explaining why garbage and trash are *not* scarce.

Scarcity



1. Draw a **scarcity** situation in the space below.

2. Draw a circle around the items below that are *not* scarce.

Shirt	Garbage	Automobile	Sand in the desert
Book	Gold	Air you are breathing	A nurse's services
TV repair	Shoes	Air in space	Saltwater at the seashore

3. In a store, what "clue" tells you if some item is more scarce than another item?

_____

_____

4. Draw a picture of a good that is very scarce and a good that is <u>not</u> very scarce.

5. List four **energy resources**. Are these resources **scarce**? Why? _____

_____

_____

_____

_____

Activity 4
Opportunity Cost and Trade-Offs

Focus on Consumers

Teaching Objectives: After completing this activity, students will be able to:

1. Define and explain opportunity cost.
2. Identify the opportunity cost of a consumer decision.
3. Explain why there is an opportunity cost to every consumer decision.
4. Identify trade-offs when making decisions.
5. Solve a problem using a decision model.

Time Allowed: Two 30-40 minute periods

Materials:
- (Optional) Econ and Me video 2 – "Opportunity Cost"
- A small piece of play dough for each student
- Decision Tree worksheet (page 20)

Vocabulary/Concepts:

- *Opportunity Cost:* the value of the best alternative given up when making a decision.
- *Trade-offs:* getting a little less of one thing in order to get a little more of another.

Because of **scarcity,** people cannot have everything they want. They must choose which **goods** and **services** they wish to purchase. When **consumers** purchase a good or service, they are giving up the chance to purchase another. The best single alternative not chosen is called the **opportunity cost.** Since a consumer choice always involves alternatives, every consumer choice has an opportunity cost.

Choices also involve **trade-offs —** getting a little less of one thing in order to get a little more of another. For example, suppose Mr. Jones decides to extend his vacation trip to Florida from one to two weeks. This extra cost means not upgrading his computer system, which he really wants to do. In this case, he is trading off better computing capabilities for more vacation time.

Teaching Procedure:

1. (Optional) Show and discuss the *Econ and Me* video, "Opportunity Cost." Ask students if they would like to do a play dough activity that will help them master this concept.

2. Ask students if they have ever purchased something at a store. Tell them that they are going to have a store in their classroom. Identify a table in the front of the classroom to serve as a "store." Point out one major problem — the store has no products! Ask students if they would like to produce some products.

3. Tell students that they first will be **producers.** Briefly explain this concept. Pass out a small amount of play dough to each student. Tell students to use their **productive resources** (natural, human, capital) to produce a **scarce** good that they might find in a typical department store. Tell them to do good work, since their goods will be sold at the class store.

4. After 10 - 15 minutes let each child describe his or her product and then place it in the store.

5. Tell students they will now be **consumers.** Briefly explain this concept. Ask for a volunteer to "shop" at the store. The volunteer must prefer at least two of the other goods to the one he has produced. Choose a student and have him identify the good he produced. Then ask the student to identify the two goods produced by other classmates that he *most* wants and would be willing to trade for. Place these two goods on the store "counter" (a nearby desk). The student must trade his good for one of those two goods. Identify the good *not* purchased as the student's opportunity cost. Ask, "What would be the opportunity cost if he chose the other good instead?" (The good *not* chosen.)

6. Then ask the class to explain the trade-offs of this choice. (If the student traded a baseball bat for some candy, he was trading off baseball recreational opportunities for the benefits of the candy.)

7. After several students have "shopped" at the store, change the rules somewhat. Ask the shoppers to identify three goods that they want most and would be willing to trade for. The opportunity cost will be the one good that was their second choice. (See Teaching Tip 1.)

8. Have students do the Opportunity Cost — Consumers worksheet. Then use the Decision Tree worksheet to solve the two case studies. Discuss student responses.

Teaching Tips:

1. Students frequently think that the *sum* of their various alternatives is their opportunity cost. This is incorrect since only their next best choice is what is finally given up. For example, suppose Mary is willing and able to purchase choices A, B, or C, in that order of preference. If she purchases A, choice B is her opportunity cost, not B and C.

2. Make sure students understand that the good they trade is not their opportunity cost. Rather, their second choice from the goods they want to trade for is their opportunity cost. Likewise, in a real store, one's opportunity cost is not the money paid for a good, but the next best alternative good that was not purchased!

Key Questions to Ask Students:

1. If I have two choices A and B, and I purchase B, what is my opportunity cost? (*choice A*)

2. Suppose I have three consumer choices A, B, and C, and each costs $10. If I purchase B, why aren't both A and C my opportunity cost? (*I cannot purchase both A and C. I am really giving up only my second best choice.*)

3. Why is there an opportunity cost to every decision? (*There is always an alternative choice that was given up.*)

4. Sally has enough money to buy two new pens for school. She wants both pens, but decides instead to purchase one pen and one piece of candy. What is her trade-off? (*She is trading off the benefits of an extra pen to get candy.*)

5. A city uses its tax money to purchase a recycling truck instead of making a new park. What is the trade-off? (*The city is trading off park services for recycling services.*)

Bulletin Board Ideas:

1. Show the opportunity cost and/or trade-offs of various choice situations, such as the city's recycling/park situation in Key Question 5 above.

2. Show the Decision Tree (from the *Econ and Me* video) being used to solve a problem. Identify the opportunity cost of the decision.

Student Journal Ideas:

1. After the play dough activity, finish this sentence: "Today I learned that ...."

2. Draw an opportunity cost situation. Write a sentence explaining the diagram.

3. Describe a choice you had to make. Identify the opportunity cost of the choice.

4. Write a paragraph describing a choice a city might have to make. What are the pros and cons of the possible choices? What is the opportunity cost of the final decision? Draw a picture that goes with the paragraph.

Opportunity Cost — Consumers

1. In your own words, write what **opportunity cost** means.

   _____

   _____

2. You have just received $10 for a birthday present from your uncle. You want to spend it on either a soccer ball, a large box of candy, or a new shirt. (Each costs $10.) Put a 1 under your first choice, a 2 under your second choice, and a 3 under your third choice.

_____ _____ _____

3. What is the **opportunity cost** of your first choice? _____

4. Were your choices the same as those of your classmates? _____
   Why not? _____

   _____

5. Suppose your friend has the same first choice as you. Does this mean his or her **opportunity cost** is the same as yours? Why or why not? _____

   _____

   _____

   _____

   _____

6. Sara has one hour until bedtime. She can take a walk, play a game, or bake a cake. She decides to play a game. Her second choice is to take a walk, and her third choice is to bake a cake.

   a. What is the **opportunity cost** of her decision to play a game? _____

   b. Can Sara's opportunity cost be taking a walk *and* baking a cake? _____
      Why or why not? _____

      _____

      _____

      _____

Case Studies

Directions: Work in groups. Use the Decision Tree to help you decide what to do in the two case studies below.

Case Study 1

Your parents are going to let you invite eight of your friends to a birthday party. After discussing the various alternatives with your parents, your two choices for a party are

- A kickball party followed by a hotdog and marshmallow roast at a local park.
- A miniature golf party followed by pizza at your house.

You really would like to do both, but it's not possible. Half of your friends want the kickball party while half want the miniature golf party. You just don't know what to do!

1. Which birthday party will you choose? _____
2. What is the **opportunity cost** of your choice? _____

Case Study 2

Your city has $20,000 of tax money to use to make your city a better place to live. The city council has narrowed the possibilities down to the two choices described below. The decision must be made next week.

- Use the tax money to plant 300 new trees along some streets of the city. This will provide more shade, make the city more beautiful, and give animals, such as squirrels and birds, more places to live.

- Use the money to build another baseball/softball field for the children of the city. Right now there are just too many teams for the one existing field. Some of the children cannot be on a team because there is no place to play games if more teams are formed.

1. What would you do? _____

   What is the **opportunity cost** of your decision? If the city selects your decision, what **trade-offs** would the city be making? _____

   _____

   _____

Activity 5
Opportunity Cost and Trade-Offs

Focus on Producers

Teaching Objectives: After completing this activity, students will be able to:

1. Define and explain opportunity cost.
2. Identify the cost of producer decisions.
3. Explain why there is a cost to every producer decision.
4. Identify trade-offs when making decisions.
5. Solve a problem using a decision model.

Time Allowed: Two 30 – 50 minute periods

Materials:

- A small piece of play dough for each student
- (Optional) *Econ and Me* video #4 — "Production"
- Opportunity Cost and Case Study Worksheets

Vocabulary/Concepts

- *Opportunity Cost:* the value of the best alternative given up when making a decision.
- *Trade-off*: getting a little less of one thing in order to get a little more of another.

Producers use **productive resources** to produce **goods** and services. Because productive resources are **scarce,** there are not enough to produce all of the goods and services that people want. Producers must **choose** which goods and services to produce. Productive resources used to produce one good or service cannot be used to produce another. For example, a producer cannot use the same building (capital resource) for a pizza restaurant and an insurance agency.

The single most valuable opportunity given up when a producer makes a decision is the **opportunity cost.** Suppose a pizza restaurant and an insurance business are the best uses for a particular building. If a producer decides to use the building for a pizza restaurant, *not* being able to use it for an insurance business would be the opportunity cost. The opportunity cost of choosing to use the building as an insurance agency would be the lost benefits of using it for a pizza restaurant.

Producer decisions also involve **trade-offs —** getting a little more of one option in exchange for a little less of another. If a community government decides to use limited tax revenues to build more parks and fewer roads, the government is trading off roads for parks.

Teaching Procedure:

1. (Optional) Show and discuss *Econ and Me* video 4 — "Production." Tell students they will do a play dough activity that will help them learn more about production and opportunity cost.

2. Tell students that they will be **producers** in this activity in order to learn more about **opportunity cost.** Distribute a small amount of play dough to each student. Ask them to use their **productive resources** (natural, human, and capital) to produce one of two types of goods: something to *eat* (food) or something to *wear* (clothing).

3. After 6-10 minutes, collect and admire the finished products. Place them on a table in front of the room.

4. Have students count how many items of food and clothing have been produced. List the number on the board.

Example:	Food	Clothing
	11	9

5. Tell the class that they may want to make some changes in what was produced. Perhaps they would like to have more food or more clothing. Take a vote to determine if the class would like more food or more clothing. In this example, assume that the class votes for more food.

6. Choose one of the more "artistic" clothing items and slowly and deliberately crush and mold it into a crude food item (apple, pancake, etc.). Repeat this with two other clothing items. As the class moans and groans, tell them that you are only doing what it wanted — producing more food!

7. After you have finished, announce that the class is definitely better off now since there is more food. Wait a few moments. Hopefully, a perceptive student will respond, "Not necessarily. Now we don't have as much clothing!" Explain that because there is a **scarcity** of productive resources, there is an **opportunity cost** to getting the extra food. Ask the class to identify the opportunity cost (two clothing items). Students should understand that the opportunity cost for producers are the goods or services *not* produced as a result of producing something else.

8. Discuss the concept of **trade-offs.** Explain that the class was trading off clothing to get more food. Emphasize that many decisions are not all or nothing. We frequently accept less of one thing in order to get more of another.

9. Have students do the Opportunity Cost — Producers worksheet and the Case Study. Discuss student responses.

Teaching Tips:

1. Students will often produce food instead of clothing. For the teaching activity to be successful, a sufficient number of both items needs to be produced. Before students begin, it is helpful to mention various clothing items (shoes, rings, necklaces, hats, etc.) that they could produce.

2. You should explain that over time more food *and* clothing can be produced, especially as productivity increases. This certainly has been the case in the United States during the past two centuries. But at any one point in time, producing more food means producing less clothing (assuming that food and clothing are the only goods produced).

3. This is an important lesson because most lessons on opportunity cost focus only on consumer choice. Few lessons emphasize that producers also must make choices that have opportunity costs.

Key Questions to Ask Students:

1. Give an example of a producer having to make choices. (*Answers will vary. Producers must choose what to produce and how to produce it.*)
2. What does opportunity cost mean? (*the best alternative you must give up to get something else*)
3. Sally must decide what to do when she grows up. She wants to be a nurse or an accountant, but unfortunately she cannot be both. What is her opportunity cost if she decides to be an accountant? (*being a nurse*) What is her opportunity cost if she decides to become a nurse? (*being an accountant*)
4. Why is there an opportunity cost to every producer decision? (*There are always other production alternatives that can be chosen*.)
5. A clothing producer uses his productive resources to produce more blue jeans and fewer T-shirts. What is the trade-off? (*The producer is trading off T-shirts for blue jeans*.)
6. Why might a producer decide to produce more blue jeans and fewer T-shirts? (*Producing blue jeans might bring more profit for the producer*.)

Bulletin Board Ideas:

1. Show the opportunity cost of a producer decision (a farmer choosing to produce corn instead of wheat, etc.).
2. Show the opportunity cost of choosing a certain career.

Student Journal Ideas:

1. After the play dough activity, finish the sentence: "Today I learned that ...."
2. Draw a producer opportunity cost situation. Write a sentence explaining the diagram.
3. Write a paragraph describing what you might like to be when you grow up. In your paragraph, list several things you might like to do and identify the opportunity cost of a career decision.

Opportunity Cost - Producers

1. What is the difference between a **producer** and a **consumer?** Give some examples of each.

   _____

   _____

   _____

   _____

2. Write the **opportunity cost** of each decision in the blanks.

   a. Last year Farmer Smith planted 20 acres of corn and 20 acres of soybeans on his 40-acre farm. This year he planted 30 acres of corn and 10 acres of soybeans. _____

   _____

   b. Mrs. Johnson wants to use her vacant building to operate either a pizza restaurant or an insurance business. She decides to operate the pizza restaurant. _____

   _____

   c. Mr. Williams teaches 5th grade science. He has only one week left in the school year. He wants to teach a unit on water resources and a unit on insects, but he does not have time to do both. He decides to teach the unit on water. _____

   _____

   d. Sarah must decide what to study when she goes to college. She wants to be either a lawyer, a teacher, or an actress. She decides to be a teacher. Her second choice was to be a lawyer, and her third choice was to be an actress.

   _____

3. Draw a picture showing a **producer** having to choose between two alternatives. In the picture, identify the **opportunity cost.** Below the picture, write a short paragraph explaining the decision and the opportunity cost.

Case Study

Directions: Work in groups. Decide what Sam should do in this case study. In the space below, draw a Decision Tree or a Decision Grid to help your group come to a decision.

Sam is very perplexed! He must decide what to do when he graduates from college. He has studied forestry and really likes growing and taking care of forests and trees. His father has some land nearby that Sam can use to develop a tree farm. He would be the manager of the farm and would make all of the important decisions. However, a large tree company has offered him a good job taking care of forests in Oregon. It is a job he really likes, and the pay is better than what he would earn developing his father's land. However, he wouldn't be the "boss" and wouldn't make nearly as many decisions himself if he worked for the company. He also would have to move far away from his family. What should Sam do?

Which job do you think Sam should take? _____

What is the **opportunity cost** of the decision you made for Sam?

_____

_____

What are some of the **trade-offs** Sam is making if he does what your group decided?

_____

_____

Put Decision Tree or Decision Grid Here or on the back.

Answers to Selected Teaching Activities

Activity 1: **Goods and Services Handout:** 2. *Goods:* recycling truck, paper cup, oil pipe, apple, gold, wood boards, trash bin, gas meter. *Services:* haircut, collecting trash, fixing an oil pipe, teaching students, fixing electric wires. *Neither:* garbage, trash

Activity 2: **Productive Resources Handout:** 2. These are the natural, human, and capital resources needed to produce a good or service. 3. Answers will vary. 4. See Figure 1 on page 5.

Productive Resources: Questions 1-5: Answers will vary. 6. No 7. No 8. Probably not. It will depend on the amount, toxicity, etc., of the pollution. Explain that, although production results in some pollution, it also results in valuable goods and services.

Activity 3: **Scarcity Handout:** 2. Items that are *not* scarce: garbage, air you are breathing now, sand in the desert, saltwater at the seashore. 3. Items that are relatively more scarce have a higher price. 4. Examples of very scarce goods: diamonds, gold, etc. Examples of not very scarce goods: pencils, paper clips, common baseball cards, etc. 5. Examples include oil, gas, nuclear plants, coal, geothermal systems, wind towers, solar systems, etc. Yes, they are not freely available in unlimited quantities.

Activity 4: **Opportunity Cost – Consumers Handout:** 1. When you make a choice, it is the value of your next best alternative. 3. The second choice 4. No. People's values differ 5. No! The second choice, which is the opportunity cost, could differ. 6a. taking a walk. 6b. No. She can't choose to do both at the same time; thus, only her second choice is her opportunity cost.

Case Studies: Decisions will vary. In each case study, the opportunity cost is always the alternative not chosen. In Case Study 2, the trade-offs are the recreational benefits for environmental/beautification benefits, or vice versa.

Activity 5: **Opportunity Cost – Producers Handout:** 1. Producers make goods and services; consumers buy and use them. 2a. 10 acres of soybeans. b. the benefits of using the building as an insurance business. c. what the students would learn by studying insects. d. being a lawyer.

Case Study: The opportunity cost is the alternative not chosen. Sam is trading off the benefits of being his own boss and staying near his family for the benefits of more money.

PLAY DOUGH RECIPE

1 cup flour	1/2 cup salt	1 T. oil
1 cup water	2 t. cream of tartar	food coloring

Directions: Cook and stir over medium heat until a ball forms. Knead in a large zip-lock bag for a few minutes. Remove air from bag and zip shut. This recipe makes enough play dough to fill an average-sized sandwich bag.