Lesson 13 - Comparative Advantage and Trade in a Global Economy

INTRODUCTION

Economics

Students (and many others) often assume incorrectly that trade is a zero-sum game: For every winner there must be a loser. The beauty of trade, and one of the most important points to get across in economics, is that trade is a win-win situation. Both parties must stand to gain, or they would not engage in voluntary trade. This basic concept applies to trade between individuals, as well as trade among regions or nations. Of course, no matter how great the advantages of free trade, there also will be disadvantages; there are no policies so good that everyone wins or so bad that everyone loses.

Students may have difficulty comprehending that one individual who can outperform another individual in every way may nevertheless be able to work out an advantageous trade or exchange with the less-competent person. Although the efficient person may be absolutely superior at everything (*absolute advantage*), the less-efficient person may be able to perform relatively better at some particular thing (*comparative advantage*) and therein lies the potential for advantageous exchange. The concept of comparative advantage forms the basis for voluntary exchange between individuals, as well as the basis for international trade.

Reasoning

Economic reasoning requires that people weigh costs and benefits of actions when they make decisions. This lesson enables the students to discover the benefits of specializing according to comparative advantage and to apply these concepts to international trade. Students also weigh advantages and disadvantages of free trade and trade restrictions by identifying winners and losers.

CONCEPTS

Absolute advantage
Barriers to trade
Comparative advantage
Opportunity cost
Specialization
Voluntary trade

CONTENT STANDARDS

5. Voluntary exchange occurs only when all participating parties expect to gain. This is true for trade among individuals or organizations within a nation, and among individuals or organizations in different nations.

6. When individuals, regions and nations specialize in what they can produce at the lowest cost and then trade with others, both production and consumption increase.

OBJECTIVES

Students will

1. Recognize and explain the difference between absolute advantage and comparative advantage.

2. Evaluate why a person with the absolute advantage in producing two services can nonetheless benefit from voluntary trade.

3. Identify winners and losers from free trade and restricted trade.

LESSON DESCRIPTION

Students observe or participate in a role-play situation in which one person is better at both of two activities. They complete a work sheet that leads to the conclusion that specialization and exchange make both people better off. Then they apply this situation to international trade and to the concepts of absolute advantage and comparative advantage. In small groups, they identify winners and losers from free trade and restricted trade.

TIME REQUIRED

60 minutes

MATERIALS

1. Visuals 13.1 and 13.2

2. Props for the Bert and Betsy role-play: apron, broom, dustpan, plastic dishes, dishcloth

3. A copy of Activities 13.1 and 13.2 for each student

PROCEDURE

1. Announce to the students that you want to explain a very important economic concept by telling a simple story. Select two students to role-play the parts of Bert and Betsy, and give them the props to use in their roles. Bert and Betsy do not need to speak in their roles; you may instruct them just to act out the parts while you read the story. (You may wish to select the students in advance and discuss their roles with them before class so they will be prepared.) Arrange the props on a desk or table in the front of the room.

2. Read the following story while the two students act out the roles of Bert and Betsy. Pause to allow Bert and Betsy to show their emotions, and for Betsy to show her skills and Bert to show his lack of skills, as appropriate.

   Betsy and her brother Bert must help with the household chores before they may go out with their friends. Their job is twofold: First, they must wash and dry a sink full of dirty dishes that have accumulated for three days. Second, they must sweep up and take out three loads of trash from the garage, which hasn't been cleaned since the summer of 1998. Bert and Betsy's parents have announced that neither of them may go out until both jobs are completed. Both Bert and Betsy want to go out with their friends as soon as possible; this is their most important goal.

THE PREDICAMENT OF BERT AND BETSY

(Display Visual 13.1.) Betsy is a skilled, industrious, hard worker. In one hour, she can wash two sink loads of dishes by herself. Or in one hour she can sweep up and take out three loads of trash by herself. Poor Bert, on the other hand, appears to be a little incompetent when compared with his sister. Working by himself, in one hour he can wash one sink load of dishes. Or in one hour he could sweep up one load of trash. How should Bert and Betsy divide the work so they can go out with their friends as soon as possible? They are considering four options.

Option 1. The Parents' Plan: Bert and Betsy's parents suggest that they consider dividing the work by doing both jobs together. The parents think working together has the added benefit of helping Bert and Betsy get along better. First, the parents say, Bert and Betsy should both work on the dishes; then they should both tackle the sweeping. Betsy complains that this wouldn't be fair because Bert is a lazy slob and won't do his share of the work. However, she is willing to go along if this lets them finish sooner.

Option 2. Betsy's Plan: Betsy argues that they should divide the tasks and work separately. She says she should do the dishes because she likes this job better and, besides, Bert made most of the mess in the garage so he should sweep up all the trash.

Option 3. Bert's Plan: Bert argues that Betsy should do all the work. He suggests that this would be the most efficient option because she is so much faster and better at doing both jobs. He will just stay out of her way so he won't slow her down.

Option 4. Friend's Plan: Betsy's friend, who has just taken economics in school, tells them they are all wrong because each person should specialize in what he or she does best. The friend recommends that Betsy should do all the sweeping because, of the two jobs and

compared with Bert, she is better at sweeping. Bert should do all the dishwashing because this is what he does best.

3. Thank Bert and Betsy for their performances. Give them a round of applause.

4. Distribute Activity 13.1 to the students, and ask them to answer the questions to evaluate the four options. They may do this individually or in small groups. Explain that in this example, when Bert and Betsy work together, they still work at the pace shown in the table. That is, they do not increase their individual productivity as a result of specialization.

5. When the students have finished answering the questions on Activity 13.1, call on students to give and explain their answers.

Part 1

1. Who is better at cleaning dishes: Bert or Betsy? ***Betsy***

2. If Bert and Betsy work together, how many loads of dishes can they do in one hour? ***Three loads***

3. How many minutes would it take for them to wash one load of dishes working together? ***20 minutes***
Show how you got your answer. ***One hour divided by three loads of dishes***

4. Who is better at sweeping up and taking out trash: Bert or Betsy? ***Betsy***

5. If Bert and Betsy work together, how many loads of trash can they do in one hour? ***Four loads***

6. How many minutes would it take for them to sweep up and take out three loads working together? ***45 minutes***
Show how you got your answer. ***They can do one load in 15 minutes or three loads in 45 minutes.***

Part 2

Option 1. Time to complete one sink full of dishes: ***20 minutes***
Time to complete three loads of trash: ***45 minutes***
Time it would take for both to be finished: ***65 minutes***

Option 2. Time to complete one sink full of dishes: ***30 minutes***
Time to complete three loads of trash: ***3 hours***
Time it would take for both to be finished: ***3 hours***

Option 3. Time to complete one sink full of dishes: ***30 minutes***
Time to complete three loads of trash: ***1 hour***
Time it would take for both to be finished: ***1 hour and 30 minutes***

Option 4. Time to complete one sink full of dishes: ***1 hour***
Time to complete three loads of trash: ***1 hour***
Time it would take for both to be finished: ***1 hour***

Which option is the most efficient: Which allows Betsy and Bert to complete the job in the shortest amount of time? ***Option 4 allows both Bert and Betsy to finish in one hour, the shortest time of the four options and the shortest possible time for this example.***

OPPORTUNITY COST

6. Display Visual 13.2. Read the definitions with the students, and apply the concepts to Activity 13.1. Review the definition of opportunity cost as necessary. ***Betsy had the absolute advantage in both washing dishes and sweeping trash. However, she had the comparative advantage only in sweeping trash, whereas Bert had the comparative advantage in washing dishes.***

Opportunity cost is defined as the value of the next-best alternative that must be given up when scarce resources are used for one purpose instead of another. Technically, Betsy's opportunity cost of one load of trash is two-thirds of a load of dishes, whereas Bert's opportunity cost of one load of trash is one load of dishes.

Betsy has the comparative advantage in sweeping trash, because she

gives up less dishwashing than Bert. However, Betsy's opportunity cost of doing one load of dishes is 1.5 loads of trash, whereas Bert's opportunity cost of doing one load of dishes is one load of trash. Therefore, Bert has the comparative advantage in doing dishes because he gives up less trash sweeping than Betsy.

Although Betsy has the absolute advantage in both activities, she has the comparative advantage only in sweeping trash. Therefore, when Betsy and Bert specialize where each has the comparative advantage and work together (the equivalent of trading sweeping for dish washing), both are better off.

7. Ask the students to apply this example to international trade. Assume Bert is really the country of Bertonia and Betsy is really the country of Betswalia. Instead of sweeping trash and washing dishes, businesses in these countries are deciding whether to make cars or computers. How do the lessons of the Bert and Betsy example apply in this situation? ***The lessons are the same. Even if one country such as Betswalia has the absolute advantage in both computers and cars, it should specialize where it has the comparative advantage and trade with the country that is the lowest-cost producer (has the comparative advantage) in producing the other product. This results in the efficient use of resources and benefits consumers in both countries.***

8. Tell the students that economists generally agree that specialization according to comparative advantage and free trade raises the overall standard of living in the countries involved. However, not everyone benefits from free trade. Because there are both winners and losers from free trade, sometimes governments decide to impose trade barriers or restrictions on free trade.

9. Distribute Activity 13.2. Working in groups of three or four, have the students identify winners and losers from the situations described.

10. When the students have finished, discuss their answers. ***Answers to Activity 13.2 will vary. Possible answers are given here, but your students may also come up with other ideas.***

Part 1

1. Which Americans are better off? Why? ***Consumers. They have more cars to choose from, and competition may lead to lower prices of U.S. and Japanese cars.***

2. Which Americans are worse off? Why? ***Autoworkers. They may lose their jobs if U.S. consumers buy more Japanese cars and fewer U.S. cars.***

3. Which Japanese are better off? Why? ***Autoworkers. Demand for Japanese cars increases, so their wages may increase.***

4.Which Japanese are worse off? Why? ***Some consumers may have to pay higher prices for Japanese cars if the increase in demand for these cars in the United States raises their price in Japan.***

Part 2

Answers are essentially the opposite of those given for free trade.

1. Which Americans are better off? Why? ***Autoworkers***

2. Which Americans are worse off? Why? ***Consumers***

3. Which Japanese are better off? Why? ***Consumers of Japanese cars, if car prices fall in Japan because of decreased demand***

4. Which Japanese are worse off? Why? ***Autoworkers, if their wages fall because of decreased demand***

CLOSURE

Review the idea of comparative advantage with the students, and discuss how specializing according to comparative advantage is the basis for mutually beneficial trade. Emphasize that although there are both winners and losers from free trade, most economists are in favor of free trade and agree that the benefits to the winners outweigh the costs to the losers.

VISUAL 13.1
HOUSEHOLD CHORES

	Household Chores (Output per hour)	
	Dishwashing (Number of sink loads)	**Sweeping** (Number of trash loads)
Betsy	**2**	**3**
Bert	**1**	**1**

VISUAL 13.2
ABSOLUTE AND COMPARATIVE ADVANTAGE

Absolute Advantage: the ability to produce more units of a good or service than some other producer using the same quantity of resources

Comparative Advantage: the ability to produce a good or service at a lower *opportunity cost* than another producer

Comparative Advantage is the economic basis for specialization and trade. If individuals and countries specialize in producing the goods in which they have the comparative advantage and trade for the goods in which others have the comparative advantage, both parties will be better off.

ACTIVITY 13.1
APPLYING COMPARATIVE ADVANTAGE

	Household Chores (Output per hour)	
	Dishwashing (Number of sink loads)	**Sweeping** (Number of trash loads)
Betsy	**2**	**3**
Bert	**1**	**1**

Part 1. The Predicament of Betsy and Bert

Betsy and her brother Bert must help with the household chores before they can go out with their friends. Their job is twofold:

A. They must wash and dry one sink full of dirty dishes that accumulated for three days.

B. They must sweep up and take out three loads of trash from the garage, which hasn't been cleaned since the summer of 1998.

Bert and Betsy's parents have announced that neither of them may go out until both jobs are completed. Both Bert and Betsy want to go out with their friends as soon as possible. As shown in the table, Betsy can wash two sink loads of dishes in one hour, or she can sweep up and take out three loads of trash. Bert can wash one sink load of dishes in one hour, or he can sweep up and take out one load of trash. (Assume that if Bert and Betsy work together, they still work at the pace shown in the table.) Answer the questions below to determine how Bert and Betsy can complete both jobs in the shortest amount of time.

1. Who is better at cleaning dishes: Bert or Betsy?

2. If Bert and Betsy work together, how many loads of dishes can they do in one hour?

3. How many minutes would it take for them to wash one load of dishes working together? Show how you got your answer.

4. Who is better at sweeping up and taking out trash: Bert or Betsy?

5. If Bert and Betsy work together, how many loads of trash can they do in one hour?

6. How many minutes would it take for them to sweep up and take out three loads working together? Show how you got your answer.

ACTIVITY 13.1, continued
APPLYING COMPARATIVE ADVANTAGE

Part 2. Analyzing the Options

Now that you have worked with the data, it is time to use this information to make a decision. Read each of the options below. Answer the questions to determine the total amount of time it would take to complete the job of sweeping up and taking out three loads of trash and washing one sink full of dishes.

Option 1. The Parents' Plan: Bert and Betsy's parents suggest that they consider dividing the tasks by working together on both jobs. First they should both work on the dishes, then they should both tackle the sweeping. Betsy complains that this wouldn't be fair because Bert is a lazy slob and won't do his share of the work. However, she is willing to go along if this allows them to finish sooner.

Time to complete one sink full of dishes: _____
Time to complete three loads of trash: _____
Time it would take for both to be finished: _____

Option 2. Betsy's Plan: Betsy argues that they should divide up the tasks and work separately. She says she should do the dishes because she likes this job better and, besides, Bert made most of the mess in the garage so he should clean up the trash.

Time to complete one sink full of dishes: _____
Time to complete three loads of trash: _____
Time it would take for both to be finished: _____

Option 3. Bert's Plan: Bert argues that Betsy should do all the work. He suggests that this would be the most efficient option because she is so much faster and better at doing both jobs.

Time to complete one sink full of dishes: _____
Time to complete three loads of trash: _____
Time it would take for both to be finished: _____

Option 4. Friend's Plan: Betsy's friend, who has just taken economics in school, tells them they are all wrong because each person should specialize in what he or she does best. She recommends that Betsy should do all the sweeping because, of the two jobs and compared with Bert, she is better at sweeping. Bert should do all the dishwashing because this is what he does best.

Time to complete one sink full of dishes: _____
Time to complete three loads of trash: _____
Time it would take for both to be finished: _____

Which option is the most efficient: which allows Betsy and Bert to complete the job in the shortest amount of time? Explain.

ACTIVITY 13.2
WINNERS AND LOSERS FROM FREE TRADE AND TRADE RESTRICTIONS

The United States produces cars and it also imports cars from other countries. Using the decision to import cars from Japan as an example, first try to identify winners and losers from free trade. Then try to identify winners and losers when we place restrictions on trade or charge foreign companies money (a tariff or tax on imports) to bring their goods into this country. Briefly explain your answers in the spaces provided.

Part 1: Free Trade

Assume there are no limits to the number of Japanese cars that Japanese companies may sell in the United States and that the United States doesn't charge any tariffs to Japanese companies that sell Japanese cars in this country.

1. Which Americans are better off? Why?

2. Which Americans are worse off? Why?

3. Which Japanese are better off? Why?

4. Which Japanese are worse off? Why?

Part 2: Restricted Trade

Assume the United States now charges Japanese car companies a tariff to sell their cars in this country and also limits the total number of Japanese cars they may import.

1. Which Americans are better off? Why?

2. Which Americans are worse off? Why?

3. Which Japanese are better off? Why?

4. Which Japanese are worse off? Why?