

# THE CANDY KIDS – SUPPLY OF AND DEMAND FOR CANDY

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## LESSON DESCRIPTION

The students participate in and discuss two games aimed at giving them an understanding that consumers and producers respond to incentives and behave according to the law of demand (as illustrated by the first game) and the law of supply (as illustrated by the second game).

## AGE LEVEL

9-11 years old

## CONCEPTS

Consumers  
Incentives  
Law of Demand  
Law of Supply  
Price  
Producers

## CONTENT STANDARD

**Standard 8** – Prices send signals and provide incentives to buyers and sellers. When supply or demand changes, market prices adjust, affecting incentives.

## BENCHMARK

- **Benchmark 1 for 4th Grade:** Higher prices for a good or service provide incentives for buyers to purchase less of that good or service and for producers to make or sell more of it. Lower prices for a good or service provide incentives for buyers to purchase more of that good or service and for producers to make or sell less of it.

## OBJECTIVES

The students will:

- ◆ Define consumers and producers.
- ◆ Define the law of supply and the law of demand.
- ◆ Explain why buyers purchase more when price falls and purchase less when price rises.
- ◆ Explain why sellers sell more when price rises and sell less when price falls.

## TIME REQUIRED

60 minutes

## MATERIALS

- Nineteen pieces of hard candy for each student
- Five small chocolate bars for each student
- One copy of Activities 1 and 2 for each student
- Visuals 1 and 2

## PROCEDURE

1. Ask how many students like candy and chocolates. Explain to the students that they will be participating in some activities with candies and chocolates. Explain that they will learn how prices affect the decisions made by those who buy and sell things. Show the students examples of the candy and chocolates that they will be using in this activity.

2. Tell the students that they are going to play a game with two rounds. Explain that in these two rounds, the students will be consumers. Buyers are also called consumers. **Consumers** are those people in the marketplace who buy goods and services.

3. Explain that in each round, each student will receive six hard candies that he or she will be able to exchange for chocolate bars.

4. Explain that the hard candies will serve as money in the game. The students should think of the hard candies as equivalent to the paper money and coins that they spend. Tell the students that the number of candies they will give up in exchange for one chocolate bar is called the price. Explain that **price** is the amount buyers pay for a

## LESSON TWO

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product and the amount sellers receive when they sell a product.

5. Tell the students that in this activity the teacher will announce the price for the candy. Prices provide incentives for buyers. Explain that **incentives** are things that encourage or discourage someone to take action or change behavior. Price is an incentive for buyers. At lower prices, buyers are willing and able to buy more and will pay less in exchange for each unit they buy. At higher prices, buyers are willing and able to buy less because they must exchange more for each unit they purchase.

6. Tell the students that they are beginning Round 1 of the game. Distribute six hard candies to each student. Remind the students that the hard candy is being used as money and that they should not eat it until they are told that they can.

7. Display Visual 1. Tell the students that the price for each chocolate bar in this round is three candies. On Visual 1 write “3” in the price row of the “Round 1” column.

8. Distribute a copy of Activity 1 to each student. Instruct the students to write “3” in the price row of the Round 1 column of Activity 1. Tell the students to decide how many chocolate bars they want to buy with the candies they have been given. Emphasize that for each chocolate bar they get, they will have to give up three hard candies. Tell the students to enter the amount they want to buy in the “Amount you want to buy” row in the “Round 1” column on Activity 1.

9. Ask each student, in turn, to tell the class how many chocolate bars she or he is going to buy. Record each of these responses on the chalkboard, and add them to determine a total number of chocolate bars the students plan to buy. Record this sum on Visual 1, in the “Total amount bought in class” row for Round 1. Tell the students also to record the total amount bought in class in the appropriate space of their Activity 1 sheet.

10. Make individual exchanges with each student in class, based on the amount each student chose to buy. Be sure to collect the correct number of hard candies in exchange for the correct number of chocolate bars. The students will be able to buy zero, one or two chocolate bars. The amount collected from each student in exchange for these chocolate bars will be zero, three or six, respectively.

11. Tell the students to put all their chocolate bars and candies from this round in their desks, out of the way, so that they can participate in the second round.

12. Tell the students that this is the beginning of Round 2. Distribute six candies to each student. Emphasize that they must keep their candy from Round 1 put away.

13. Tell the students that the price for each chocolate bar in this round is five candies. On Visual 1, write “5” in the price row of the Round 2 column. Instruct the students to write “5” in the price row of the Round 2 column of Activity 1. Tell the students to decide how many chocolate bars they want to buy with the candies they have been given. Emphasize that for each chocolate bar they get, they will have to give up five candies. Tell the students to enter the amount they want to buy in the “Amount you want to buy” row in the “Round 2” column in Activity 1.

14. Ask each student, in turn, to tell the teacher how many chocolate bars he or she is going to buy. Record each of these responses on the chalkboard, and add them to determine the total number of chocolate bars the students plan to buy. Record this total in the “Total amount bought in class” row for Round 2 of Visual 1. Tell the students also to record the total amount bought in class in the appropriate space of their Activity 1 sheet.

15. Make individual exchanges with each student in class, based on the amount each student chose to buy. Be sure to collect the

correct number of candies in exchange for the correct number of chocolate bars. The students will be able to choose to buy only zero or one chocolate bar. Therefore each student will pay either zero candies or five candies.

16. Discuss the following questions:

- A. What do we mean by “price”? *The amount paid in exchange for one unit of a good or service*
- B. What happened to the amount of chocolate bars the class was willing and able to buy when the price of each bar increased from three to five? *The amount decreased.*
- C. Why did the class buy less at the higher price? *Each student had a limited amount of money. At a higher price, students were unable to afford as many chocolate bars.*
- D. If the price of chocolate bars had decreased from three to one, how do you think the class would have responded? *Purchased more chocolate bars*
- E. Why would the class be able to buy more at a lower price? *Each student had a limited amount of money. At a lower price, each student was able to buy more chocolate bars.*

(NOTE: The income effect indicates price increases are like reductions in income: consumers will decrease the quantity demanded. Price decreases are similar to increases in income: consumers will increase the quantity demanded. This activity shows the income effect, but the more important reason people buy more or less of a product as the price decreases or increases is the substitution effect. The substitution effect indicates that as the price of a product decreases, and it is cheaper relative to other products, consumers tend to buy more of the relatively cheaper product. As the price of

a product increases consumers tend to buy less of it and more of other products. If the price of chocolate bars increases, relative to the price of chocolate brownies, consumers will buy fewer chocolate candy bars and substitute the less expensive brownies.)

- F. What are incentive? *Things that encourage or discourage someone to take action or change their behavior*
- G. Why is price an incentive for consumers? *A lower price allows the consumer to buy more for his or her money; at a higher price the consumer cannot buy as much for the same amount of money.*

17. Explain that the relationship the students observed between price and the amount people are willing and able to buy is called the Law of Demand. Explain that the **Law of Demand** means that when price increases, the amount people are willing and able to buy decreases. Explain that the Law of Demand also means that when price decreases, the amount people are willing and able to buy increases. This relationship is called an inverse or indirect relationship.

18. Remind the students that in these two rounds of the activity they were the consumers – people who in the marketplace buy goods and services. Ask the students to define “consumers.” *People in the marketplace who buy goods and services*

19. Explain to the students that they are now going to do a separate but similar activity. Tell them to put all their candies and chocolate bars away.

20. Distribute a copy of Activity 2 to each student.

21. Tell the students that this time they will again participate in two rounds of an activity involving chocolate bars, with hard candy used as

## LESSON TWO

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money. In this activity, they will be producers. **Producers** are people who make and sell goods and services. Explain that in each round, the students will have one chocolate bar to sell in exchange for candies.

22. Tell the students that the number of candies they receive in exchange for one chocolate bar is called the price. Tell the students that in this activity the teacher will be announcing the price of chocolate bars. Point out that price is an incentive for sellers because at a higher price producers are willing and able to sell more, and they receive more in exchange for each unit sold. At lower prices, producers are willing and able to sell less, and they receive less in exchange for each unit sold.

23. Tell the students that this is the beginning of Round 1 of this second game. Distribute one chocolate bar to each student. Remind the students not to eat the candy.

24. Display Visual 2. Tell the students that the price of each chocolate bar in this round is six candies. Write “6” in the price row of the “Round 1” column on Visual 2. Instruct the students to write “6” in the price row of the “Round 1” column of Activity 2. Tell the students to decide if they want to sell their chocolate bar at the price of six candies per chocolate. Tell the students to enter the amount (0 or 1) they want to sell in the “Round 1” column of the “Amount you want to sell” row of Activity 2.

25. Ask each student, in turn, to tell the class whether or not he or she is going to sell the teacher his or her chocolate bar at the price of six hard candies per chocolate bar. Record each of the students’ responses on the chalkboard and add them up to determine the total number of chocolate bars the students plan to sell. Record this total in the “Total amount sold in class” row in the “Round 1” column of Visual 2. Tell the students also to record this total in the “Total amount sold in class” row in the “Round 1” column of Activity 2.

26. Make individual exchanges with each student in class, based on the amount each student chose to sell. Be sure to collect the chocolate bars in exchange for the correct number of candies. The students will be able to sell zero or one chocolate bar. The amount each student will be paid in exchange for these chocolate bars will be zero or six hard candies, respectively.

27. Tell the students to put away all their chocolate bars and candies from Round 1.

28. Tell the students that this is the beginning of Round 2. Distribute a chocolate bar to each student. Emphasize to the students that their first-round candy must remain put away.

29. Tell the students that the price the teacher is offering for each chocolate bar in this round is one candy. Write “1” in the price row of the “Round 2” column of Visual 2. Instruct the students to write “1” in the price row of the “Round 2” column of Activity 2. Tell the students to decide if they want to sell their chocolate bars for the price they have been offered (one candy for each chocolate bar). Emphasize that for each chocolate bar they sell, the students will receive one candy. Tell the students to enter the amount they want to sell in the “Amount you want to sell” row in the “Round 2” column in Activity 2.

30. Ask each student, in turn, to tell the class how many chocolate bars she or he is going to sell. Record each of the students’ responses on the chalkboard and add them up to determine how many chocolate bars the students plan to sell. Record this total in the “Total amount sold in class” row in the “Round 2” column of Visual 2. Tell the students also to record the total amount sold in class on their Activity 2 sheet in the appropriate space.

31. Make individual exchanges with each student in class. Be sure to collect the chocolate bars in exchange for the correct number of candies. The students will be able to choose to

sell only zero or one chocolate bar. The amount the teacher will pay each student in exchange for these chocolate bars will be zero or one candy, respectively.

32. Discuss the following questions:

- A. What happened to the total amount of chocolate bars all sellers (the students) were willing to sell when the price decreased from six candies to one candy? *The total amount of chocolate bars sold by the class decreased.*
- B. Why did the class sell more total chocolate bars at the higher price? *People are willing and able to sell more of a good or service at a higher price. The lower price was not as big an incentive to sell as the higher price was. Sellers are not as willing and able to sell at a lower price because they do not get as much in exchange for their goods or services as they do at a higher price.*
- C. Why did the class sell fewer total chocolate bars at the lower price? *People are less willing and less able to sell a good or service at a lower price.*
- D. If the price of chocolate bars had increased from six to 10 hard candies, how do you think the class would have responded? *Sold more chocolate; at lower prices, it is harder for producers to cover their costs. At the lower prices they will produce and sell less.*
- E. What is an incentive? *Something that encourages or discourages someone to take action or change his or her behavior*
- F. Why is price an incentive for producers? *A higher price encourages producers to sell more; a lower price discourages producers from selling. Because producers have costs of production, higher prices make it*

*easier for producers to cover their costs.*

(NOTE: Businesses are faced with diminishing returns, which raise their costs of production. Faced with rising costs of production, businesses are willing to produce and sell more only at higher prices that cover their rising costs. Diminishing returns is the principle that as one input is increased, while holding other inputs constant, the marginal product of the input will eventually fall [or diminish].)

33. Explain that the relationship between price and the amount of a product producers are willing to sell is called the **Law of Supply**. The Law of Supply is that as prices go up, producers are willing to sell more, and as prices go down producers are willing to sell less. This is a direct relationship.

34. Discuss the following questions:

- A. What roles did you play in these games? *Producers and consumers*
- B. What is the difference between a producer and a consumer? *A producer makes and sells goods and services. A consumer buys goods and services.*
- C. If price decreases, what do you expect that producers will do? *Sell less of a good or service if its price decreases*
- D. If price increases, what do you expect that consumers will do? *Buy less of a good or service if its price increases*
- E. How can producers encourage buyers to buy more of a product? *By lowering the price of the product; lower prices are an incentive for consumers to buy more.*
- F. How are price incentives different for producers and consumers? *Producers respond to price changes by increasing the amount that they are willing and able to sell when the price increases, and by decreasing the amount they are*

## LESSON TWO

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*willing and able to sell when the price decreases. Buyers respond in just the opposite way to changes in price – buyers increase the amount that they are willing and able to buy when price decreases, and decrease the amount they are willing and able to buy when a price increases.*

### CLOSURE

35. Review the key points in the lesson by asking the following:

- A. What is the Law of Supply? *The direct relationship between price and the amount producers are willing to sell – At higher prices, producers are willing to sell more. At lower prices, producers are willing to sell less.*
- B. What is the Law of Demand? *The indirect or inverse relationship between price and the amount consumers are willing and able to buy – At higher prices, consumers are willing to buy less. At lower prices, consumers are willing to buy more.*
- C. Why do consumers buy more at lower prices and less at higher prices? *Because they have a limited amount to spend – At lower prices, they are able to buy more than they could at higher prices.*
- D. Why are sellers willing to sell more when prices rise and less when prices fall? *Producers are not as willing and able to sell at a lower price because they do not get as much in exchange for their goods or services as they do at higher prices. At higher prices, sellers are better able to cover their costs. Therefore, they are willing to sell more at higher prices. At lower prices, it is more difficult for sellers to cover their costs. Therefore, at lower prices, producers will scale back production and sell less.*

### ASSESSMENT

Give the students pencils and paper and read the following instructions to the them:

1. Sveta likes caramel candy. Write a story that explains how Sveta changes her buying pattern when the price of caramel candy increases. Be sure to include in the story information about Sveta's incentives when the price increases. Use pictures and words to tell the story.
2. Answer the following questions:
  - A. After Christmas, stores often lower their prices. These events are called sales. Why do consumers buy more during sales than at regular prices? *Buyers have an incentive to buy more when the price is lower because they can get more goods and services with the same amount of money.*
  - B. Gasoline is made from oil extracted from under the ground. If gasoline prices increase, how would you expect that oil companies will respond? *When gasoline prices increase, we would expect that oil companies will respond by increasing the amount of oil they extract from the ground to produce and sell more gasoline.*

## Visual 1

**Demand Relationship**

	Round 1	Round 2
Price	_____ candies	_____ candies
Total amount bought in class	_____ chocolates	_____ chocolates

## Visual 2

### Supply Relationship

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	Round 1	Round 2
Price	_____ candies	_____ candies
Total amount sold in class	_____ chocolates	_____ chocolates

## Activity 1

### Demand Worksheet

	Round 1	Round 2
Price	_____ candies	_____ candies
Amount you want to buy	_____ chocolates	_____ chocolates
Total amount bought in class	_____ chocolates	_____ chocolates

## Activity 2

# Supply Worksheet

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	Round 1	Round 2
Price	_____ candies	_____ candies
Amount you want to sell	_____ chocolates	_____ chocolates
Total amount sold in class	_____ chocolates	_____ chocolates