



## Half Dollar Purchasing Power

MATH

3-4



### BIG QUESTION

How much have the costs of goods change over time?



### TIMING

60-90 minutes



### SUMMARY:

Students will explore the purchasing power of the half dollar. Students will collect and graph prices over time, and then write math problems to determine the percent increase between periods.

### LEARNING OBJECTIVES:

- Students will demonstrate an understanding of purchasing power and the changes in costs of goods over time.
- Students will practice organizing and plotting data and reading graphs to find trends.
- Students will determine the percent increase of costs for a given product and write related mathematical problems.



### MATERIALS:

- Laptops or devices to allow students to conduct research on the Internet
- Websites for research:
  - D'Marie Time Capsule at <http://www.dmarie.com/timecap/>
  - Half Dollar Coin page on U.S. Mint Coin Classroom <https://www.usmint.gov/learn/kids/about-the-mint/half-dollar>
- Graph paper
- Pencils
- Rulers



## PROCEDURE:

### Discuss Half Dollar and Key Concepts (15 minutes)

1. Start this lesson by reviewing the types of coins students may be familiar with. Ask students to share which coins they have used or have seen. If no one mentions the half dollar, ask students if they have seen one before. Explain that today they will see two different designs used on the half dollar, one that is used today – the Kennedy Half Dollar-- and one that was used more than 60 years ago—the Franklin Half Dollar.
2. Hand out the **Half Dollar Power Graphic Organizer**. Ask students to fill in their organizer during the discussion. Display images of the Franklin and Kennedy half dollar (see last page of this packet for images). Explain that these coins are worth 50 cents and can be used to purchase goods, but they are also common for collecting. Tell students we are going to find out which of these half dollars could buy more goods during the time period the coins were made.
3. Explain to students that we are going to investigate how much power the half dollar has. Using chart paper, whiteboard or other method, create two columns. Title one side 50 Cents. Ask students to think about what they could buy for 50 cents today and write their answers underneath. If they need some help, here are a few ideas you can share:
  - Pencils
  - Gumballs
  - Bulk candy
  - Lemonade from a lemonade stand
  - Postcard
4. Write \$20 on the top of the other column. Now ask students to think of what they could buy for \$20. Write their answers on the other side of the list. In theory, the list of items that can be purchased for \$20 should be longer.
5. Ask students what they notice about the lists. Observations might include that there are more items underneath the \$20 column. Explain that the class is going to talk about why that is.
6. Write or display the term Purchasing Power on the board. Ask students if they can guess what this means.
  - Define it: the amount of products or services you can buy with a specific amount of money.
  - Provide an example: The purchasing power of 50 cents is less than the purchasing power of \$20. You can buy more products or services with \$20 than you can with 50 cents.

### Research Costs of Goods Over Time (45 minutes)

1. Ask the students how much a loaf of bread, a gallon of milk, and a gallon of gas are today. Use [www.dmarie.com/timecap](http://www.dmarie.com/timecap) to verify. Ask students to record the amount in their graphic organizer and record this amount on a chart visible to the class for reference. Ask students which, if any of these items, we could buy with a Kennedy Half Dollar today. You might also ask how many half dollars they would need to buy one gallon of gas or a loaf of bread.
2. Then, ask the students what they think these products cost in 1956, which is the year the Franklin Half Dollar was made. Write their predictions on the class chart.
3. Have the students find the actual average costs of these products and record them on the graphic organizer. Ask students which items we could buy with a Franklin Half Dollar if we were back in 1956.
4. Ask students what they notice about using a half dollar today in comparison to using one in 1956. Explain that the purchasing power of the half dollar in 1956 is higher than the purchasing power of a half dollar today. Tell students that we are going to go back even further to look at the cost of goods over time.
5. Have the students pick one product (bread, milk or gas). Starting at 1900 and researching every ten years, have the students record the prices for the product.
6. Have the students construct a bar graph of the results. The bar graph should be titled and the axes labeled axis (X=Years, Y=Cost).
7. Review the percentage of rate increase with the class using the class chart and instructions on the second page of the graphic organizer.
8. Have the students write their own percentage increase word problems on separate paper, in a math journal or on the back of their organizer using the information collected in their charts. Have the students pick two years and then calculate the percentage rate increase for their product. Ask students to determine which decade had the greatest and which had the least percent increase.

## ASSESSMENT:

Observe students' graphic organizers and graphs to determine if they've met the lesson objectives.



### DIFFERENTIATE:

- Allow students to work in pairs or small groups to complete the chart and graph.
- Work as a class to complete the graphic organizer and price research.
- Use an online graph tool.
- Allow students to use calculator to determine the percent increases.
- Introduce the concept of a percent decrease and ask students if there were any decades when the prices decreased and by what percentage.
- Generate percent increase problems and solve them as a class.



### RELATED:

- [Circulating Coins information for kids](#)
- [Cents-able Shopping Activity](#)
- [Counting with Coins](#)



### STANDARDS:

#### Common Core Standards

#### [CCSS.MATH.CONTENT.3.MD.B.3](#)

Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*

#### [CCSS.MATH.CONTENT.4.MD.A.1](#)

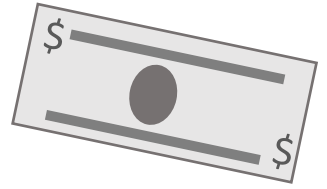
Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*

#### [CCSS.MATH.CONTENT.4.MD.A.2](#)

Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.



# Half Dollar Power Graphic Organizer



A half dollar is worth \_\_\_\_\_.

What can you buy with a half dollar?

What can you buy with \$20?

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What is Purchasing Power?



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How much do these goods cost today?



*Today's half dollar features President John F. Kennedy.*

Milk  \_\_\_\_\_

Bread  \_\_\_\_\_

Gas  \_\_\_\_\_

How much did these goods cost in 1956?



*A half dollar from 1956 features Benjamin Franklin.*

 \_\_\_\_\_

 \_\_\_\_\_

 \_\_\_\_\_

**Directions:** Pick either milk, bread, or gas prices to research and write your choice on the top of the chart below. Use the chart to record the prices for the product every 10 years. Make sure you write the cost out as a decimal (e.g., \$0.80).

After your chart is complete, create a bar graph on a separate piece of paper or graph paper. Title the graph and use the year as the X axis and the cost as the Y axis. Then, calculate the percent increase from one decade to the next.

Year	Cost of _____
1900	
1910	
1920	

## Percent Increase

Use the following steps to find out how much the prices changed from one decade to another.

- 1) Find the difference between the two decades' prices we are comparing.
- 2) Then divide the answer by the original number or the number from the earlier decade.
- 3) Multiply the answer by 100.
- 4) Add a percent sign to your answer and that is the percent increase!

For Teacher's Use:

Enlarged Images of Half Dollar Coins

The Franklin Half Dollar was made from 1948 to 1963.



The Kennedy Half Dollar was introduced in 1963 and is still minted today.

