

The Market Basket

SMART/ActivInspire Lesson Plan

Lesson Author

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Standards and Benchmarks (see page 12)

Lesson Description

In this lesson, students will compare the price of goods from one time period to another and through discussion and role play interpret the effects of inflation on consumers. They will categorize goods and services according to the eight major groups of the consumer price index (CPI) and be able to determine the difference between the CPI and the core CPI.

Grade Level

9-12

Time Required

60-90 minutes

Concepts

- Bureau of Labor Statistics (BLS)
- Consumer price index (CPI)
- Core CPI
- Goods
- Inflation
- Inflation rate
- Purchasing power
- Services

Objectives

Students will

- define inflation, inflation rate, consumer price index (CPI), and core CPI;
 - explain how inflation affects purchasing power;
 - determine the price of goods and services from one year to another as adjusted for inflation by using an online calculator;
 - identify the categories of consumer spending included in the CPI and the core CPI; and
 - explain a role of the Bureau of Labor Statistics.
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Materials

- SMART Notebook file “The Market Basket”
 - Handout 1, one copy cut apart, making eight strips
 - Handout 2, one copy for each student
 - Handout 3, one copy for each student
 - One first-class postage stamp to use as a visual
 - Internet access
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Procedure

1. Begin the class by displaying Slide 1. Show the students a first-class postage stamp. Discuss the price of the stamp by asking the following questions:
 - What is the price of a first-class postage stamp? (*Answers will vary depending on the current price.*)
 - Do you think the price of a postage stamp is the same today as it was 20 years ago? 50 years ago? (*The price is more today than in previous years.*)
2. Display Slide 2. Discuss the increase in the price of a first-class postage stamp over the years, such as the increase from 15 cents to 18 cents on March 22, 1981; the subsequent increase to 20 cents on November 1, 1981; and the 4-cent increase in 1991. Ask the following questions:
 - Why do you think the price of a stamp has increased over the years? (*Answers will vary but should include that most things cost more today than they cost in earlier times.*)
 - What are some other things that cost more today than in earlier times? (*Answers will vary according to student experience.*)

3. Display Slide 3 and assign a student to read the slide aloud. Next, explain that the increase in the price of one item or a few items is not an indication of **inflation**. It is the increase in the average price of many goods and services that determines inflation.
4. Tell the students that **goods** are objects that satisfy people's wants, and **services** are actions that can satisfy people's wants. **Consumers** are people who buy goods and services to satisfy their wants.
5. Display Slide 4. Ask a student to click and drag the terms to match the definitions.

Slide 4: Answer Key

Goods: Objects that satisfy people's wants

Services: Actions that satisfy people's wants

Consumers: People who buy goods and services to satisfy their wants

6. Explain that inflation affects consumers in different ways. As long as their personal incomes increase at the same rate as the **inflation rate**, then inflation is hardly noticeable. Consumers can buy the same amount of goods and services. However, if consumers' personal income stays the same or increases at a slower rate than the inflation rate, they aren't able to buy the same amount of goods and services as they had previously. This result is called a decrease in **purchasing power**. Purchasing power is the amount of goods and services that a unit of currency can buy. Inflation will also reduce the value of people's savings if the interest rate at which the savings grows is less than the inflation rate. So, overall, inflation reduces the value of money.
7. Invite eight students to come to the front of the room and provide each student with one strip cut from *Handout 1: Inflation Effects*. Tell the students they will each assume the identity of the person in the scenario on their strip and share that information with the class in a role play. Explain that they can be creative in their presentation of the information by adding specific details but cannot change the basic information about each person.

For example:

Strip information: Kara's retirement income is fixed at \$24,000 per year.

Presented information: "Hi! I'm Kara and I have worked all my life down at the local factory. I have paid enough into my pension plan that I will have \$24,000 a year for the rest of my life."

8. Display Slide 5. Explain that following each role play, the presenter will decide whether the person portrayed would be financially better off, worse off, or the same as a result of inflation. Presenters are to click and drag the name of the person described to the correct column on Slide 5. Ask the audience to signal their approval or disapproval of

each decision by applause. Tell the presenters that if they determine that their answer is incorrect based on the audience response, they may change their answer.

9. Allow time for students to present the role plays and select an answer on Slide 5.
10. Display Slide 6 to check answers.
11. Display Slide 7 and assign a student to read the slide aloud. Next, explain that since 1913, the **Bureau of Labor Statistics**, the BLS, has collected information on inflation and reported this information monthly. Using the collected data, the price of goods and services can be compared from one year to another.
12. Display Slide 8 and assign a student to read the slide aloud.
13. Display Slide 9 and assign a student to read the slide aloud. Explain that one reason consumers experience inflation differently is because people buy different items. The price of some items may increase more rapidly than the price of others. For example, if the prices of prescription drugs rise rapidly, elderly people will feel the effect more severely than young people.
14. Display Slide 10. Explain that the inflation rate is the percent change in the price level determined by comparing the percentage increase or decrease in the price level of goods and services from one time period to another.
15. Refer to the formula for calculating the annual inflation rate, based on the **consumer price index** (CPI), shown on Slide 10.

Ask the following question:

If the price of goods and services in year 1 = \$100 and the price of goods and services in year 2 = \$103, what is the percentage increase in the price of goods and services from year 1 to year 2? (*3 percent*) In this example, what is the annual inflation rate? (*3 percent*)

Use the formula to demonstrate how to determine the answer:

$$\frac{\text{CPI in year 2} - \text{CPI in year 1}}{\text{CPI in year 1}} \times 100 = \text{Inflation rate in year 2}$$

$$\frac{103 - 100}{100} \times 100 = 3\%$$

16. Ask the students to consider this question:

If inflation is the only factor considered (and not other factors such as the size and quality of the product, which can also influence a price change), what do you think a McDonald's hamburger that cost 15 cents in 1964 would cost today?
17. Tell the students that the cost for a hamburger today can be determined by using an online inflation calculator designed by the BLS. This calculator can be found at <http://data.bls.gov/cgi-bin/cpicalc.pl>. The calculator determines what the price of a good or service would be if the price had increased according to the inflation rate. In other words, it determines the inflation-adjusted price.
15. Distribute a copy of *Handout 2: Inflation-Adjusted Prices* to each student. Explain that the inflation-adjusted price of any item can be determined using the online calculator provided by the BLS. For the chart in 2 on the handout, they are to calculate prices for the current year. Instruct students to complete the handout.
16. Discuss the completed handout. (*Answers for 1, 2, 4, 5, 6, and 7 will vary depending on the current year. 3: \$4.70. 8: If there were not an increase in personal income equal to the increase in prices due to inflation, a person would not have enough money to purchase the same amount of goods. Their purchasing power would decrease.*)
17. Explain that prices from earlier times for individual goods and services adjusted for inflation by the calculator don't always match current prices of individual goods and services. This is because the inflation rate is calculated based on the average price level of goods and services. The prices of individual goods and services may not have increased as much or may have increased more than the inflation rate.
18. Ask students to think of reasons why the prices of some individual goods and services may not have increased or may even have decreased since an earlier time. (*Answers will vary but should include technological improvements and more competition in the marketplace for specific items. For example, the price of a computer is much less today than 20 years ago even though there has been inflation during this period.*)
19. Display Slide 11 and assign a student to read the slide aloud. Explain that CPI is reported monthly and indicates the annual percentage change in the prices paid by urban consumers for a market basket of consumer goods and services. This market basket includes 80,000 items. Urban consumers represent about 87 percent of the total U.S. population. The CPI does not measure inflation for people living in rural nonmetropolitan areas, people in the Armed Forces, or those in institutions. Although the CPI does not include literally *all* items, it is quite representative of consumer goods and services. The data collected analyze consumer spending in more than 200 categories, arranged into the eight major groups noted on the slide:

Food and beverages	Housing
Apparel	Transportation
Medical care	Recreation
Education and communication	Other goods and services

20. Display and discuss Slides 12-19. As each slide is displayed, discuss the examples given for each group and call on individual students to suggest additional examples for each group. List the examples on the slides as they are named. (Note: Most examples are self-explanatory. However, when discussing Slide 13, explain that “owners’ equivalent rent” is obtained by asking surveyed homeowners to estimate how much their home would rent for monthly, unfurnished and without utilities included.)
21. Display Slide 20 and assign a student to read the slide aloud. Explain that the CPI includes some taxes such as sales and excise taxes that are directly associated with the purchase of specific goods and services. However, the CPI excludes other taxes such as income and Social Security taxes that are not directly associated with the purchase of consumer goods and services.
22. Display Slide 21. Tell the students that the market basket of goods has been dumped. The cartons representing the eight consumer spending groups of the CPI have lost their labels. Choose students to come forward and straighten the basket, reload the cart, and correctly label the eight cartons. Instruct students to draw a red X through the labels that do not belong on a carton because they are not categories included in the CPI calculation.
23. Display Slide 22 to show the market basket with the eight groups in the CPI correctly labeled. (Life insurance, Social Security taxes, and income taxes are not CPI categories.)
24. Display Slide 23. Explain that there is another measurement of inflation using the CPI called the **core CPI**. The core CPI is the CPI excluding food and energy. Assign a student to read the slide aloud.
25. Ask the students the following questions:
 - Have you ever seen the price of a gallon of gas change several cents per gallon overnight? (*Accept answers according to student experience.*)
 - Have you ever seen the price of food change depending on the season? (*Answers will vary but students may note that watermelons, cantaloupes, strawberries, and other fruits are more expensive in the winter.*)
26. Explain that by excluding food and energy, the core CPI is designed to measure and analyze inflation in the short run without the risk of volatile prices possibly concealing the true picture of inflationary trends.

27. Display Slide 24 and ask the class the following questions:

- Is there a group designated for food? (*Yes, one of the groups is Food and beverages.*)
- Is there a group designated for energy? (*No, energy does not have a group of its own. Energy is embedded in the other groups.*)
- How might energy costs be included (or implicitly stated) in the transportation category? (*Answers will vary but should include that the cost of fuel is calculated into the price of bus, airline, and taxi fares. Energy costs also are calculated into the cost of shipping.*)
- How might energy costs be implicit in the food and beverage category? (*Answers will vary but should include that the cost of gas is calculated into the price of transporting food and beverages.*)
- How might energy costs be implicit in the housing category? (*Answers will vary but should include that the costs of heating, cooling, and cooking are energy costs embedded in housing costs.*)

Closure

28. Ask students the following questions, which are presented on slides 25 through 27:

- What is inflation? (*Inflation is a general rise in the level of prices over time. It is a sustained increase in the average price level of goods and services.*)
- How does inflation affect purchasing power? (*If a consumer's personal income stays the same or increases at a slower rate than inflation, the consumer is no longer able to buy the same amount of goods and services. Inflation also reduces the value of people's savings if the interest rate at which the savings grows is less than the rate of inflation.*)
- What is the inflation rate? (*The inflation rate is the percent change in the price level determined by comparing the percentage increase or decrease in the price level of goods and services from one time period to another.*)
- What is the CPI and how does it differ from core CPI? (*The CPI [consumer price index] is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. The core CPI is the CPI excluding food and energy.*)
- What are the major consumer spending groups included in the CPI? (*Food and beverages, housing, apparel, transportation, medical care, recreation, education and communication, and other goods and services*)
- What is the role of the BLS? (*The BLS [Bureau of Labor Statistics] is a federal agency that collects and analyzes economic data. It is responsible for measuring labor market activity, working conditions, and price changes in the economy to provide information for private and public decisionmaking.*)

29. Review the lesson vocabulary by displaying Slide 28 and completing the self-checking activity.
30. Display Slide 29. Read the rules together for how to play the Matching Game.
31. Display Slide 30. Play the matching game, matching goods and services with their appropriate CPI group. (Answers are grouped on Slide 31.)

Assessment

32. As a class, listen to *The Economic Lowdown Podcast* "Volume 1, Episode 4: Inflation" (length: 8:18) found on the following website:
http://www.stlouisfed.org/education_resources/economic-lowdown-podcast-series/inflation/.
33. Provide each student with a copy of *Handout 3: Create a Podcast*. Divide the class into partners and assign the following: Partners are to work together to create a three- to five-minute podcast script using *The Economic Lowdown Podcast* as a model. Review the directions on Handout 3:

Using *The Economic Lowdown Podcast* "Volume 1, Episode 4: Inflation" (found at http://www.stlouisfed.org/education_resources/economic-lowdown-podcast-series/inflation/) as a model, work with a partner to create a three- to five-minute podcast script based on what you have learned in this lesson.

The podcast should include reference to and explanation of the eight major consumer spending groups in the representative market basket used to calculate the CPI:

Food and beverages	Housing
Apparel	Transportation
Medical care	Recreation
Education and communication	Other goods and services

The podcast should also include reference to and explanation of the following concepts:

Goods and services	Inflation
Inflation rate	CPI
Core CPI	BLS
Consumer	

Prepare to read the podcast aloud to the class.

34. Allow time for students to prepare and present the podcasts.

Handout 1: Inflation Effects

Selma is 75 years old and has a savings account to use in her retirement years. Each month she's pleased to see the interest added to her savings account balance. The account pays an annual percentage rate of 2 percent. The current annual inflation rate is 4 percent. **With inflation, is Selma financially better off, worse off, or the same?**

Doug has saved money for four years to pay for a new car. He has carefully tucked away part of his earnings each week in a cookie jar. During this four-year period, inflation has caused the price of new cars to increase about 3 percent each year. **With inflation, is Doug financially better off, worse off, or the same?**

Kara's retirement income is fixed at \$24,000 per year. She feels financially secure knowing exactly how much her income will be each month and that her purchasing power will remain fixed. She is not planning to change her spending patterns. The current inflation rate is 3 percent. **With inflation, is Kara financially better off, worse off, or the same?**

Tanika loaned her friend \$5,000 last year and was paid back \$5,020 at the end of this year. Tanika thought her friend was generous to add an extra \$20 for interest. The inflation rate for the two years averaged 2 percent per year. **With inflation, is Tanika financially better off, worse off, or the same?**

Allen received a 1 percent pay increase last year, a 10 percent pay increase this year, and no other increases in his wages. Over that time, the inflation rate averaged 3 percent per year. **With inflation, is Allen financially better off, worse off, or the same?**

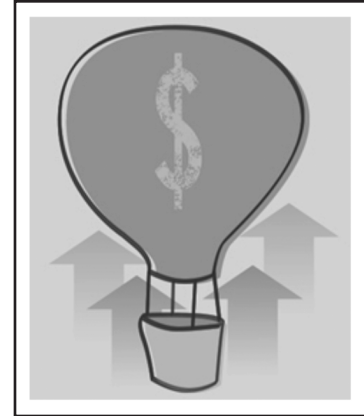
Joann borrowed \$1,000 from her sister two years ago. Today she wrote her sister a check for \$1,010—\$1,000 for the loan and \$10 for interest. The inflation rate has averaged 3 percent each year since she borrowed the money. **With inflation, is Joann financially better off, worse off, or the same?**

Robert thinks he has a good retirement plan because he can count on an annual increase that matches the inflation rate. **With inflation, is Robert financially better off, worse off, or the same?**

John has worked at the same job for five years. During that time, he received a 1 percent pay increase one year, a 3 percent increase in another year, and no other increases in his wages. Over the same time, the inflation rate has averaged 3 percent per year. **With inflation, is John financially better off, worse off, or the same?**

Handout 2: Inflation-Adjusted Prices

1. Use the online calculator found at the following link to determine the price of a McDonald’s hamburger in the current year if the price was \$0.15 in 1964 and the price increased at the inflation rate:
<http://data.bls.gov/cgi-bin/cpicalc.pl>.
2. Use the online calculator to determine what the inflation-adjusted prices of these items might be in the current year based on their prices in 1981.



Item	Price in 1981	Inflation-adjusted price (20____)
First-class stamp	\$0.20	\$
Gallon of gas	\$1.38	\$
Dozen eggs	\$0.90	\$
Gallon of milk	\$2.22	\$
TOTALS		

SOURCE: 1981 prices, <http://www.1980sflashback.com/1981/economy.asp>.

3. What was the total price of the four items in the chart in 1981?
4. If the prices of these items increased at the rate of inflation, what would the total price of the items in the chart be in the current year?
5. How much more or less money would be needed in the current year to buy the four items in the chart than in 1981?
6. Is the price of any of the four items in the chart actually more now than the inflation-adjusted price?
7. Is the price of any of the four items in the chart actually less now than the inflation-adjusted price?
8. Why is it important for personal income to increase at the same rate as inflation?

Handout 3: Create a Podcast

Directions: Using *The Economic Lowdown Podcast* "Volume 1, Episode 4: Inflation" (found at http://www.stlouisfed.org/education_resources/economic-lowdown-podcast-series/inflation/) as a model, work with a partner to create a three- to five-minute podcast script based on what you have learned in this lesson.

The podcast should include reference to and explanation of the eight major consumer spending groups in the representative market basket used to calculate the CPI:

Food and beverages	Housing
Apparel	Transportation
Medical care	Recreation
Education and communication	Other goods and services

The podcast should also include reference to and explanation of the following concepts:

Goods and services	Inflation
Inflation rate	CPI
Core CPI	BLS
Consumer	

Prepare to read the podcast aloud to the class.

Standards and Benchmarks

National Standards in Economics

Standard 11: Money and Inflation

Money makes it easier to trade, borrow, save, invest, and compare the value of goods and services. The amount of money in the economy affects the overall price level. Inflation is an increase in the overall price level that reduces the value of money.

- **Benchmark 4, Grade 8:** Inflation reduces the value of money.
- **Benchmark 3, Grade 12:** The consumer price index (CPI) is the most commonly used measure of price-level changes. It can be used to compare the price level in one year with price levels in earlier or later periods.
- **Benchmark 4, Grade 12:** The annual inflation rate is the percentage change in the average prices of goods and services over a twelve-month period.

Standard 19: Unemployment and Inflation

Unemployment imposes costs on individuals and the overall economy. Inflation, both expected and unexpected, also imposes costs on individuals and the overall economy. Unemployment increases during recessions and decreases during recoveries.

- **Benchmark 2, Grade 8:** When people's incomes increase more slowly than the inflation rate, their purchasing power declines.
- **Benchmark 6, Grade 12:** Unexpected inflation imposes costs on many people and benefits others because it arbitrarily redistributes purchasing power among different groups of people. Unexpected inflation hurts savers and people on fixed incomes; it helps people who have borrowed money at a fixed rate of interest.
- **Benchmark 7, Grade 12:** Inflation can reduce the rate of growth of national living standards because individuals and organizations use resources to protect themselves against the uncertainty of future prices.

Common Core State Standards: Literacy in History/Social Studies, Science, and Technical Subjects, Grades 6-12

History/Social Studies (CCSS.ELA-Literacy)

- **Key Ideas and Details**
RH.9-10.1, RH.11-12.1: Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.
RH.9-10.2, RH.11-12.2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.
- **Craft and Structure**
RH.9-10.4, RH.11-12.4: Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning

of a key term over the course of a text (e.g., how Madison defines *faction* in *Federalist* No. 10).

- **Integration of Knowledge and Ideas**

RH.9-10.7, RH.11-12.7: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.

- **Range of Reading and Level of Text Complexity**

RH.9-10.10, RH.11-12.10: By the end of grade 12, read and comprehend history/social studies texts in the grades 11–CCR text complexity band independently and proficiently.

Writing (CCSS.ELA-Literacy)

- **Text Types and Purposes**

WHST.9-10.2, WHST.11-12.2: Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

W.11-12.2a: Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

W.11-12.2b: Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

W.11-12.2c: Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

W.11-12.2d: Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.

W.11-12.2e: Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).