What Did It Cost 100 Years Ago?

Subjects

- Arts & Humanities
  - Language Arts
- Educational Technology
- Mathematics
  - Algebra
  - Applied Math
  - Arithmetic
  - Statistics
- Social Studies
  - Economics
  - Geography
  - History
    - U.S. History

Grades

- 3-5
- 6-8
- 9-12
- Advanced

Brief Description

Students compare prices of goods across the century in this lesson that introduces the concept of inflation.

Objectives

Students will
- understand the concepts of inflation and Consumer Price Index (CPI).
- use online calculators to figure the approximate cost of goods across the years.
- create a graph or table to illustrate data.

Keywords

data, consumer, money, Consumer Price Index, CPI, inflation, graph, table, chart, gasoline, food, currency

Materials Needed

- computer with Internet access
- one of the following: art supplies, graphing software, or access to the Create a Graph tool
Lesson Plan

In this lesson, students learn about the Consumer Price Index (CPI). They graph changes over time to the cost of common goods and use an online CPI calculator to estimate the cost of goods in other eras.

Students have probably heard or read news reports in which the word inflation was used. They probably have heard about the Consumer Price Index (CPI) too. Simply stated, the CPI compares the cost of a series of goods or services purchased by members of the average household.

The Bureau of Labor Statistics (BLS), the group responsible for tracking the costs of those goods, monitors more than 200 categories of goods or services arranged into eight major groups. According to the BLS Web site, major groups and examples of categories in each are as follows:

- Food and Beverages -- breakfast cereal, milk, coffee, chicken, wine, full service meals, and snacks;
- Housing -- rent of primary residence, owners' equivalent rent, fuel oil, bedroom furniture;
- Apparel -- men's shirts and sweaters, women's dresses, jewelry;
- Transportation -- new vehicles, airline fares, gasoline, motor vehicle insurance;
- Medical Care -- prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, hospital services;
- Recreation -- televisions, cable television, pets and pet products, sports equipment, admissions;
- Education and Communication -- college tuition, postage, telephone services, computer software and accessories;
- Other Goods and Services -- tobacco and smoking products, haircuts and other personal services, funeral expenses.

The average cost of all those goods is monitored on a weekly, monthly, and yearly basis. The CPI is the percent by which the average cost of all those goods and services increases during a specified period of time. This is also referred to as the inflation rate.

Ready to Calculate?
After sharing basic information about the CPI, you might introduce an online tool -- a CPI calculator -- and have some fun with it.

You might start with the Inflation Calculator on the Web site of the Bureau of Labor Statistics. (Scroll down to click the link to the "Inflation Calculator" and a small calculator will pop up.) The calculator enables you to compare the buying power of your money today with its buying power in past years. For example, to compare buying power of the money it costs to buy a product (say, a loaf of bread) today and 100 years ago, enter in the first window of the Inflation Calculator the cost of that loaf of bread this week (say, $2.59) and select the current (or a recent) year from the first drop-down menu. Then select from the second drop-down menu the year to which you wish to compare current prices; then click Calculate. You will learn that the equivalent buying power of the $2.59 you spent this week for a loaf of bread.

Here are two more online tools that will accomplish a similar purpose to the Inflation Calculator above:

- The Relative Value Calculator provides comparisons from 1789 to present day. Type your data request; for example, What was the relative value 100 years ago of $2.59 today? Check the box next to CPI, then click the Submit Query button. (Note: Type only numbers; do not type the dollar sign.)
- The Inflation Calculator offers comparisons between 1800 and today. Simply input the data; for example, Enter the amount of money: 2.59. Then enter the initial year and final year. Then click Submit.

Be sure students understand that those calculators will not provide precise costs of goods in different eras; they provide only estimates of relative value/buying power of a specified amount of money based on changes in the average cost of all goods and services (the CPI) over time. Above, we used the example of a loaf of bread. The
followed precisely the CPI/rate of inflation (the average cost of all goods over time); but most products would not follow inflation that exactly. What we can say is that the money spent to buy a loaf of bread last week had the same buying power of 11 cents in 1913.

It is also important that students keep all calculations in perspective. In 1913, people earned far less money than they earn today. Even though they made much less, the money they made probably had about the same buying power as our money does today; in 1913, people probably complained when the newspaper went up a penny as much as we do when it goes up a dime!

While the CPI calculator is not the best tool to use to make cost or salary comparisons, you might use it to approximate the relative buying power of a person’s salary through history. Use the calculator to learn that a salary of $50,000 in 2001 might have had the same buying power as a salary of about $2,750 had in 1913. Stated another way, if a person made $2,750 dollars in 1913 and received annual raises that matched exactly the rate of inflation/CPI -- and if that person was still alive today! -- he or she would be making about $50,000.

The important concepts for students to derive from this lesson and their use of the online CPI tools is that the cost of goods changes over time and that the CPI can be used to “guess-timate” the relative value/buying power of goods over time. That way, when a student reads that in the 1960s a loaf of bread cost 25 cents, they should not simply respond, “Boy, I wish I lived in 1960!” They should understand that, although the cost of most goods has increased over time, average income also has increased; today’s salaries have the same buying power as a lesser amount (an amount tied to the CPI/rate of inflation) in the 1960s.

**Follow-Up Activity**

Have students brainstorm a list of goods or services that almost every family purchases today that a family might have purchased 100 years ago. (Examples: bread, milk, shoes, a box of stationery, a candle, sewing thread, eyeglasses, a magazine, a haircut, having a tooth pulled.) Then assign one of those products to each student. Students will use store ads, library materials, and other sources to research the current price of the item. Then students will use one of the three online calculators to calculate the buying power of the money spent for that product throughout the last century. For example, have students calculate the buying power of the cost of their assigned product in 2005, 1995, 1985, 1975, 1965, 1955, 1945, 1935, 1925, and 1915. Extend the lesson by having students use art supplies, graphing software installed on classroom computers, or the free and easy-to-use [Create a Graph](http://nces.ed.gov) tool to create bar graphs to illustrate the buying power of that amount of money over time. For an easier-to-read graph, students might only graph data for every 20 years (2003, 1983, 1963, 1943, and 1923).

Note: Be cautious about letting students draw conclusions such as “the computer I paid $1,500 for last month would have cost about $342 if I bought it 30 years ago” or “a gallon of gasoline that costs $1.57 today would have cost 24 cents in 1952.” First off, re-emphasize that, while statements such as those about some products might be true, most goods to not “follow inflation” that exactly. Additionally, we cannot compare the buying power of computers in that way because computers were not available to consumers 30 years ago. And, as for gasoline, there are many variables that such a statement does not consider, including:

- Gasoline is probably one of the most volatile commodities. Its cost can fluctuate a great deal in a year’s time. Many things influence the cost of gasoline, including world politics.
- The price of gasoline often fluctuates in response to supply or demand. In 1952, there was nowhere near the demand for gasoline that there is today. Higher demand might increase the cost of some goods/services (due to limited availability) or decrease the cost (due to savings that result from mass production/consumption).
- It is also important that students be aware that they might not be comparing like items. In the above example, we calculated the relative value of a gallon of regular unleaded gasoline -- but regular unleaded gasoline did not even exist in 1952.
Additional Resources & Activities

CPI Average Price Data
These data collections show the cost of 18 of the most commonly purchased goods by month for the past ten years. The tables offer an option to view data back to 1976. Activity: Students might select a specific item and monitor its cost each week during the school year.

Weekly Gasoline Prices
The Department of Energy offers data showing the cost of a variety of grades of gasoline in 15 different locations around the United States. Activity: Students might create a map or graph to illustrate the current cost of gasoline in different locations. Discuss why there might be such disparity in the cost of gasoline. Students might mention supply and demand, distance from refineries/cost of transporting gasoline, different taxes imposed on gasoline by different states…

What Was the Inflation Rate Then?
Use this online tool to learn the inflation rate for each year or to calculate the inflation rate between years (for example, the percent by which prices rose between 1903 and 2000).

CPI: 1913-2007
Use this resource to calculate and produce a table or graph that illustrates data by decade (for example, the inflation rate during the 1920s, 1930s, 1940s…)

Assessment
In the computer lab, you might provide the cost of a product students might buy (for example, a paperback book or a pair of shoes) and have students use one of the online calculators to estimate the relative cost of that item across the years.

Lesson Plan Source
Education World

National Standards

FINE ARTS: Visual Arts
GRADES K - 4
NA-VA.K-4.6 Making Connections Between Visual Arts and Other Disciplines

GRADES 5 - 8
NA-VA.5-8.6 Making Connections Between Visual Arts and Other Disciplines

GRADES 9 - 12
NA-VA.9-12.6 Making Connections Between Visual Arts and Other Disciplines

MATHEMATICS: Number and Operations
GRADES 3 - 5
NM-NUM.3-5.1 Understand Numbers, Ways of Representing Numbers, Relationships Among Numbers, and Number Systems

GRADES 6 - 8
NM-NUM.6-8.1 Understand Numbers, Ways of Representing Numbers, Relationships Among Numbers, and Number Systems

GRADES 9 - 12
NM-NUM.9-12.1 Understand Numbers, Ways of Representing Numbers, Relationships Among Numbers, and Number Systems
MATHEMATICS: Algebra
GRADES 6 - 8
NM-ALG.6-8.1 Understand Patterns, Relations, and Functions
NM-ALG.6-8.4 Analyze Change in Various Contexts
GRADES 9 - 12
NM-ALG.9-12.1 Understand Patterns, Relations, and Functions
NM-ALG.9-12.4 Analyze Change in Various Contexts

MATHEMATICS: Data Analysis and Probability
GRADES 3 - 5
NM-DATA.3-5.3 Develop and Evaluate Inferences and Predictions That Are Based on Data
GRADES 6 - 8
NM-DATA.6-8.3 Develop and Evaluate Inferences and Predictions That Are Based on Data
GRADES 9 - 12
NM-DATA.9-12.3 Develop and Evaluate Inferences and Predictions That Are Based on Data

MATHEMATICS: Connections
GRADES Pre-K - 12
NM-CONN.PK-12.3 Recognize and Apply Mathematics in Contexts Outside of Mathematics

MATHEMATICS: Representation
GRADES Pre-K - 12
NM-REP.PK-12.3 Use Representations to Model and Interpret Physical, Social, and Mathematical Phenomena

SOCIAL SCIENCES: Economics
GRADES K - 4
NSS-EC.K-4.7 Markets and Market Prices
NSS-EC.K-4.8 Supply and Demand
NSS-EC.K-4.11 Money
NSS-EC.K-4.13 Income and Earning
GRADES 5 - 8
NSS-EC.5-8.7 Markets and Market Prices
NSS-EC.5-8.8 Supply and Demand
NSS-EC.5-8.10 Market Institutions
NSS-EC.5-8.11 Money
NSS-EC.5-8.13 Income and Earning
GRADES 9 - 12
NSS-EC.9-12.7 Markets and Market Prices
NSS-EC.9-12.8 Supply and Demand
NSS-EC.9-12.10 Market Institutions
NSS-EC.9-12.11 Money

SOCIAL SCIENCES: Geography
GRADES K - 12
NSS-G.K-12.1 The World in Spatial Terms
NSS-G.K-12.2 Places and Regions

SOCIAL SCIENCES: U.S. History
GRADES K - 4
NSS-USH.K-4.3 The History of the United States: Democratic Principles and Values and the People from Many Cultures Who Contributed to Its Cultural, Economic, and Political Heritage
GRADES 5 - 12
NSS-USH.5-12.7 Era 7: The Emergence of Modern America (1890-1930)
NSS-USH.5-12.8 Era 8: The Great Depression and World War II (1929-1945)
NSS-USH.5-12.9 Era 9: Postwar United States (1945 to early 1970s)
NSS-USH.5-12.10 Era 10: Contemporary United States (1968 to the Present)

TECHNOLOGY
GRADES K - 12
NT.K-12.1 Basic Operations and Concepts
NT.K-12.4 Technology Communications tools
NT.K-12.5 Technology Research tools

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