That Was Then, This is Now

Wyoming Social Studies, Mathematics

Objectives:

- Students will perform mathematical computations, analyze data charts, and compare and contrast statistical information in order to learn about food prices and how they have changed over time.

Background:

This lesson includes information on how food price data can be used to make mathematical computation practice interesting and informative. Review the materials and revise them to meet the needs of your students.

You may choose to customize the lesson to include current and past newspaper grocery ads. Consider comparing commodity prices from one season to the next and from one year to another.

Statistics and colorful graphs are available from a variety of sources.

As you use the this lesson, it is important for students to realize that the United States has the safest, most abundant food supply in the world. Most farmers do not make a lot of money producing the food Americans consume. In fact, people who farm most often do it because they have a passion for it.

Today, over 72% of the farmers have income outside of farming. Profit made in agriculture is most often accrued on the marketing end. It may be interesting for your students to meet an actual producer and learn about his/her operation.

Activity Procedures:

1. Review the enclosed worksheets and statistics. If necessary, rewrite the worksheets or create math problems that supplement the worksheets.
2. Introduce your students to the lesson by having them think about the prices their family pays for specific food items and how they think that price is determined. Possible discussion and/or writing prompts are listed below.
   - What would your parents say if you asked, "Is the price of food going up or down?"
   - On the average, is it less expensive, more expensive, or about the same to eat at a restaurant than at home? Explain.

Standards

Social Studies

Production, Distribution & Consumption:
3.1, 3.2, 3.3
Time, Continuity, & Change:
4.2, 4.3

Mathematics

5th Grade:
Data Analysis & Probability:
5.1, 5.2, 5.3
6th Grade:
Data Analysis & Probability:
5.1

Materials

- Reading a Chart I Worksheet
- Reading a Chart II Worksheet
- The Price of Food Today Homework Assignment
- Colored pencils
- Graph paper

Estimated Time

60 Minutes

Grades 5-6

vocabulary:

- *data*
- *average*
- *retail*
- *profit*
- *loss*
- *consumer*

- How do you think the price of food is determined?
- Do the farmers who grow the crops make a lot of money on the food you are eating?
- If you were to compare the price of food in the United States to the price of food in other countries, would it be more or less expensive?

3. Introduce your students to the Average Prices of Foods—Retail chart. In general, discuss what the chart shows. Review the meaning of average.
4. Have the students complete the Reading a Chart I and Reading a Chart II Worksheets and the homework assignment. Part of the homework assignment requires students to make a graph. Be sure they have the rough drafts of their graphs approved before preparing their final copies.
5. Share the graphs the students have created. Display the student graphs in the library, hallways, grocery stores, and at special events such as parent meetings and open houses.

Additional Activities:

1. Convert the homework activity to a class field trip. Have students work in teams of two as they find information at the grocery store.

2. Create large colorful graphs of the information they collected at the grocery store. Display the student graphs at the stores the students visited.

3. Use the Farm Facts Booklet, available from the American Farm Bureau Federation, to illustrate a variety of graphic ideas as well as information on the current agricultural status of American agriculture. Use grocery ads to determine the prices of the food items in the homework assignment.

Reading a Chart—I

A Look at Averages

Name: _____

Date: _____

Instructions

Using the chart provided by your teacher, answer the questions below.

1. For what years does the chart have food prices listed? _____

   _____

2. What do the numbers in the columns actually represent? _____

   _____

3. How many food items are represented in this chart? _____

4. Why do you suppose the United States decided to have these food items available for price comparison? _____

   _____

5. Averages:

   a) What does average mean in math? _____

   _____

   b) How much did an average one-half gallon of milk cost in 1989? _____

   _____

   c) In 1970, did every dozen eggs cost 61.4 cents? Explain. _____

   _____

   d) How do you think the average retail price of food is determined? _____

   _____

   _____

   _____

Reading a Chart—I

A Look at Averages (Page 2)

6. How many cents did an average pound of tomatoes cost in 1960? _____¢. Express that number using a dollar sign and a decimal. _____

7. Did all food items listed in the chart cost more in 1989 than they did in 1988? Yes No.

   Explain. _____

   _____

8. An Average Meal

   Suppose it is 1970. Your family is going to have a hearty meal consisting of one loaf of bread, two pounds of chicken, 3 pounds of potatoes, 1/2 gallon of milk, and a salad made of 1/2 pound of tomatoes and one bunch of leaf lettuce (the lettuce cost 29 cents).

   a) What would the total average cost be for this meal? _____ Show how you got your answer in the space below.

   b) Explain why some families would have paid more for this meal and why some families would have paid less for this meal._____

   _____

   _____

   c) Using the trends you see in the chart, would the same meal today cost more or less than the meal in 1970? More Less

9. What is one thing you found interesting about the chart of data? (*Write your answer in a complete sentence.*) _____

   _____

   _____

Reading a Chart—II

Comparing Data

Name: _____

Date: _____

Instructions

Using the chart provided by your teacher, answer the questions below.

1. How much did a dozen eggs cost in 1980? _____ In 1950? _____

2. According to the chart, in what year did five pounds of sugar cost the most? _____

   What was that price in cents? _____¢. Rewrite that price using a decimal and a $ sign.

   _____

3. Name two items that were more expensive in 1960 than they were in 1950.

   _____ _____

4. In what year(s) was the average price of a pound of potatoes less than a dime? _____

5. Name one item whose average price was less expensive in 1980 than it was in 1970.

   _____

   Discuss one possible reason why this happened. _____

   _____

   _____

6. Look at the average price of tomatoes in the years 1970 and 1990. How much increase was there in the price per pound of tomatoes over this twenty- year period? _____

7. In 1950, about how much would it cost for two pounds of apples? _____

8. Pretend it is 1960 and you have three one-dollar bills. If you bought one pound of bacon, how many dollar bills would you give the cashier? _____ How much change would you get back? _____

9. It is 1970 and you plan to make cookies. You have all the supplies you need except the sugar, eggs, and butter. How much money would you need to buy a five-pound bag of sugar, one dozen eggs, and one pound of butter? _____

Reading a Chart—II

Comparing Data (Page 2)

10. How much would you have left over if, in 1989, you gave a grocery clerk two dollars for one-half gallon of milk? _____

11. In 1950, how many one-pound loaves of bread could you buy with two dollars? _____

12. Write one problem of your own using information from the chart. Include the answer and show how you determined the answer.

Problem: _____

_____

_____

_____

_____

Answer: _____

13. Farmers produce the food we eat. Since on the average, most food prices have increased over the years, do you suppose the farmers are making more money off the food we eat? Yes No

Explain your reasoning. _____

_____

_____

The Price of Food Today

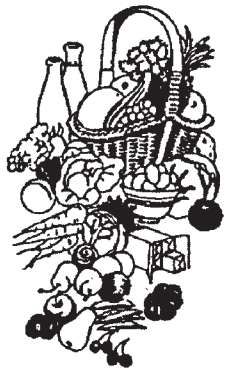
Name: _____

Date: _____

Dear Parent/Gardian:

As part of a math lesson, your student will need to spend some time at the grocery store. Please include your child in one of your grocery store shopping trips so that he/she can complete the assignment below by the following date: _____. He/she will be doing a graphing assignment using this information.

Thank you!



1. Go grocery shopping with a parent this week or make a special trip to the grocery store for this assignment. *As you travel throughout the store, remember to be courteous and respectful. You are representing your school, as well as yourself.*

2. Go to the approriate section of the store and examine the prices of several brands of the items listed in the chart below.

3. Complete the following chart:

Item	**Least Expensive Price**	**Most Expensive Price**	**Estimated Average Price**
1 pound bacon			
5 pounds sugar			
1 dozen eggs			
1 pound butter			
1 pound tomatoes			
1 pound apples			
1 loaf standard white bread			
½ gallon of whole milk			
1 item of your choice			

The Price of Food Today

4. How did you decide what to write in the "estimated average price" column?

_____

_____

5. Do you suppose that the price of tomatoes is always about the same price? Why/Why not?

_____

_____

6. Name one item in the store that you think will not be in the store three months from now.

_____ Why do you think this? _____

_____

_____

7. In one well-written paragraph, explain what you learned from doing this exercise.

_____

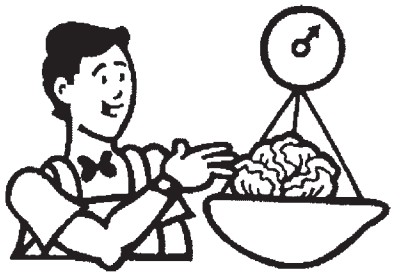
_____

_____

_____

8. Graphs often show information in a clear and simple way. Pick one of the ideas below and make a creative and colorful graph that represents your information. Be sure to have a rough draft of your graph approved by your teacher before preparing your final copy.

   - Show how one item's price has changed over time (ex. The price of bread in 1950, 1960, 1989 etc.)
   - Show today's current average prices (as you have determined them) of different food items.
   - Using your own idea, make a graph showing how prices change over time. Obtain permission from your teacher before beginning your graph.



Average Prices of Food—Retail*

(Prices are in cents per pound, unless otherwise indicated)

Year	Apples	Bread	Whole Milk ½ Gallon	Tomatoes	Bacon	Potatoes	Chicken	Sugar (5lbs.)	Eggs (Dozen)	Butter	Corn Flakes
1950	12.0	14.3	38.6	24.3	63.7	4.6	59.5	48.7	60.4	72.9	18.5
1960	16.2	20.3	49.4	31.6	65.5	7.2	42.7	58.2	57.3	74.9	25.8
1970	21.9	24.3	57.4	42.0	94.9	90.0	40.8	64.8	61.4	86.6	31.5
1980	63.0	51.0	87.3	67.0	146.0	20.4	70.9	215.0	93.0	188.0	79.7
1988	73.0	61.0	116.0	83.0	188.0	26.0	85.0	182.0	79.0	216.0	N/A
1989	69.0	66.0	126.9	91.0	178.0	30.6	92.7	185.0	100.0	213.0	N/A
1990	72.0	70.0	142.0	53.0	213.0	33.8	90.0	200.0	101.0	N/A	146.0
1995	76.0	78.0	117.0	89.0	221.0	36.1	107.0	214.0	175.0	222.0	204.0
2000	81.0	83.1	123.0	99.0	247.0	37.9	109.0	222.0	189.0	232.0	209.0

* Obtained from the United States Department of Agriculture and the California Department of Food and Agriculture