

MATH

Can Take You Places

LESSON 17

“Is Your Money Rolling Away”

by Debbie Miskiewicz

CONCEPT AREA Problem Solving

GRADE LEVEL 4-6

TIME ALLOTMENT 60 minutes

LESSON OVERVIEW Students will engage in problem-solving situations that make them more aware of their roles as consumers.

LESSON ACTIVITIES OVERVIEW Students will determine the best purchase price of a product in a problem-solving situation.

LEARNING OBJECTIVES Students will be able to:

- Determine the reason for solving the problem.
- Devise a plan for solving the problem.
- Utilize a variety of strategies to solve the problem.

STANDARDS (TEKS) From the Texas Essential Knowledge and Skills (TEKS) for Math for grades 4-6:

Grade 4
4.1A, B, D, G; 4.5B
Grade 5
5.1A, B, D, G; 5.3E
Grade 6
6.2D; 6.8A; 6.11A, D

MEDIA COMPONENTS Video: *Math Can Take You Places #004 “Problem Solving”*
Internet:

MATERIALS

- Graph
- Rulers
- Two colored pencils
- Variety of boxes of fruit rolls (chocolate candies for Spanish version)
- Calculators to check work
- Balance for measuring

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PREP FOR TEACHERS

Teachers will need to purchase any brand of fruit rolls of varying quantities.

Note:

The following concepts will be covered during this lesson: **volume, weight, metric units of measurement** and **customary units of measurement**. Students may need to review the concepts prior to beginning the activities.

If your class includes students who are acquiring English as a second language (ESL), you may also need to brainstorm problem-solving strategies or offer a list of possible strategies for students to refer to while completing the activities. They may also need to review how to read a ruler and a balance.

INTRODUCTORY ACTIVITY: SETTING THE STAGE

1. Students enter the classroom. The teacher has placed an individually-wrapped fruit roll, a regular box and a family box of fruit rolls on the table at the front of the classroom.

2. A message is posted either on the chalkboard or overhead that reads, “Analyze these boxes and prices!” Students begin to write down their findings. How are the flavors of fruit rolls packaged? What is the number of fruit rolls in each box? Which purchase is the better buy? Students will also justify their reasoning to each question. The class will have a discussion about the fruit rolls.

LEARNING ACTIVITIES

Watch the video *Math Can Take You Places #004 “Problem Solving”*. Ask students to listen closely and be able to name three problem-solving strategies. Stop the video after the students on screen list several strategies. Discuss as a class.

Students will solve a real-life problem.

1. Do you want to buy the fruit rolls in regular bulk, family bulk or individually? Help students think through this question by creating charts for each of the three different costs of the fruit rolls. For example, individually, the fruit rolls cost \$.28. For a regular box of 10, the price is \$2.56. For a family box of 24, the price is \$4.98. For example, students may calculate the cost on each of the graphs of one fruit roll, five, 10, and so on.

Sample Chart (for the regular box):

Cost of the entire box: \$2.56 – Number of rolls in the box: 10

Number of Fruit Rolls	Estimated Total Cost of These Fruit Rolls
1	\$.26
5	\$1.30
10	\$2.60
25	\$6.50

2. What is the unit price for a fruit roll from a family box? From a regular box?

3. You have a coupon for \$0.25 off a fruit rolls family box or two regular boxes. How would you justify which use of the coupon gets the consumer the better buy?

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4. If you need 63 fruit rolls for a grade-level party, what is the most cost-effective way to purchase this amount?

5. Students will use graph paper, colored pencils and a ruler to graph three different tables of data (total cost for those fruit rolls vs. the total cost for those fruit rolls), accounting for the three different unit prices.

CULMINATING ACTIVITY

1. Students will use grocery store fliers to compare prices of products sold at each store.

2. Students will verify all box measurements for accuracy. They will evaluate how the box was measured for volume and weight (standard or metric). The students will need balances to weigh fruit rolls.

CROSS- CURRICULAR EXTENSIONS

Language/Writing

(How to) How does a consumer make the best purchase?

(Persuasive) Persuade your reader to buy a store brand or name brand box of fruit rolls.

(Descriptive) Use each of your senses to describe a fruit roll.

Science

Is the fruit roll a nutritional snack? What standard does the FDA set that determines whether a fruit roll is a nutritional snack or junk food?

REAL-WORLD CONNECTIONS

Have guest speakers, including retail buyers, grocery store managers, dieticians and parent experts, visit to speak to the class.

ASSESSMENT

Assessments are ongoing through student activities. Teachers will need to design their own rubric for grading.

STUDENT HANDOUTS

“Is Your Money Rolling Away” Activity Sheet

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Name _____ Date _____

Activity Sheet

1. Fill in the chart below using information for an individual fruit roll.

Cost of an individual fruit roll: _____

Number of Fruit Rolls	Estimated Total Cost of These Fruit Rolls
1	
5	
10	
25	

2. Create charts like the one above for the regular box and the family-sized box of fruit rolls. Be sure to write down the cost of each type of box and the number of fruit rolls in each.

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3. What is the unit price for a fruit roll from a family box?

From a regular box?

4. You have a coupon for \$0.25 off a fruit rolls family box or two regular boxes. How would you justify which use of the coupon gets the consumer the better buy?

5. If you need 63 fruit rolls for a grade-level party, what is the most cost-effective way to purchase this amount?

6. Use words to describe how you would find the cost of 100 individually-wrapped fruit rolls.

7. Write a number sentence to explain how you could calculate the cost of an unknown number of fruit rolls at an unknown cost.

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Te Lleva a Muchos Lugares

LECCIÓN 17

“¿Está Tu Dinero Rodando De Tus Manos?”

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Nombre _____ Fecha _____

1. Completa la tabla de abajo usando la información de un dulce de chocolate individual.

Costo de un dulce de chocolate individual

Numero de Dulces de Chocolate	Costo Total Estimado de Estos Dulces
1	
5	
10	
25	

2. Crea tablas como la de aquí arriba para una caja regular y una caja familiar de dulces de chocolate. Asegúrate que escribas el costo de cada tipo de caja y el número de dulces de chocolates que hay en cada una.

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3. ¿Cuál es el precio por unidad de cada caja familiar de dulces de chocolates?

¿De una caja regular?

4. Tú tienes un cupón de \$0.25 de descuento para una caja familiar de dulces de chocolates ó dos cajas regulares. ¿Cómo justificarías cual uso del cupón le será al consumidor la mejor compra?

5. Si tú necesitas 63 cajas de chocolates para una fiesta en tu aula, ¿cuál es la manera más ahorrativa para comprar esta cantidad?

6. Usa palabras para describir como tu podrás calcular el costo de 100 dulces de chocolates individuales.

7. Escribe una oración numérica que explica como tú podrás calcular un número desconocido de dulces de chocolates con un precio desconocido.