

Lesson Description

This lesson continues with characters from Mr. Cash's fourth grade class. The students want to raise money for the playground fund at Capital Elementary School. Students are to determine the supplies needed for each fundraising project, decide which of the supplies can be donated and which supplies must be purchased, and find the cost of the purchased supplies given necessary information.

For each fundraising project, additional information is provided so students can compute the amount of money collected for each project. Students will calculate the profit for each project and determine the total profit earned by Mr. Cash's class.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 4.10B:** calculate profit in a given situation

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 4.1:** Mathematical process standards
- **Math 4.2E:** represent decimals, including tenths and hundredths, using concrete and visual models and money
- **Math 4.4A:** add and subtract whole numbers and decimals to the hundredths place using the standard algorithm

National Standards (Supporting standards)

- **CEE Earned Income 4.6:** People who own a business can earn profits, which is a source of income.
- **CCSS Math 4.OA:** Use the four operations with whole numbers to solve problems.
- **CCSS Math 4.NBT:** Use place value understanding and properties of operations to perform multi-digit arithmetic.

CEE - Council for Economic Education

CCSS - Common Core State Standards

Time Required

One 45-minute period class

PFL Terms

- Profit
- Expenses
- Revenue

Materials Required

- Chart paper and markers or interactive white board
- Paper and pencil for students
- A copy of **Activity 4.2-1** for each student
- A copy of **Activity 4.2-2** for each student

Procedure**Engage**

1. Introduce this lesson by informing students that Capital Elementary School is getting ready to begin a fundraiser to buy additional playground equipment for their school. Mr. Cash's fourth grade class has asked if they could work together to help with the project.
2. Review the idea of Readers' Theater. **Activity 4.2-1** is to be read by students playing the parts of Penny, Buck, Richey, Bill, and Mr. Cash, a fourth grade teacher. Students should be allowed to practice reading their parts prior to presenting the story to the class.

Explore/Explain

3. After reading the Readers' Theater on **Activity 4.2-1**, ask students: *What are some of the things each team will need to consider before you can put your fund raising plan into effect?* List all responses given by the class. Introduce any of the following ideas that students did not mention: **supplies, setting the price, school store location(s), starting date and ending date for sales, date profits must be turned in.**
4. Divide the class into four teams. Assign each team one of the projects described in the Readers' Theater. Each team should work together to create a supply list needed to carry out their fund raising project. Teams need a recorder and a reporter. Allow 5 minutes for teams to brainstorm.
5. Bring the class back together. Have the reporter from each team share their list as you record it on a class chart. After you record the responses for a group, ask the remainder of the class if they have any other suggestions for materials needed for that fund raising project. Add any other responses. Have each team share in this manner. Below are some possible responses.

Dog Shampooing	Cookie Sales
Aunt Sally's Dog Grooming Tub Source of water/Sprayer Shampoo Towels Leash Blow dryer Brush Change box	Flour Sugar Oven Cookie Sheets Bowls Spoons Recipe Eggs Spices Chocolate chips Baggies Change box
Pencil Sales	Bracelet Sales
Pencils Boxes of pencils Change box	Pony Beads: red, white, blue, purple, green, gold, yellow, orange, pink, black Elastic stretch cord Scissors Change box

6. Have each team review their needs list and distinguish between Items that must be purchased and items that will be borrowed or donated. Students circle all items that must be purchased.

Elaborate

7. Remind students that Mr. Cash told his class that they must make more in sales than they spend on supplies in order to make a profit. *Let's find out how to calculate profit.* Give the class the following example:

Yesterday my neighbor bought a birdhouse that I made. I spent \$1.50 for wood and 25¢ for nails to make the birdhouse. I already had glue and paint. My neighbor gave me \$5.00 for the birdhouse. How much profit did I make?

8. Allow a few minutes for each team to determine the profit from selling the birdhouse. Have students share their procedure(s) by modeling their calculations. This can be done by adding the cost of the supplies and then subtracting from the amount paid or subtracting the cost of the wood from the amount paid and then subtracting the cost of the nails from the difference.
9. Distribute **Activity 4.2-2** to each student. Tell the students that this worksheet has the results of Mr. Cash's class fund raiser. Read the directions to the students. Guide students through finding the profit for the Dog Shampooing. They should complete the remaining three fundraising projects independently. Be sure students answer the two questions on the bottom of the second page of **Activity 4.2-2**.

Evaluate/End

10. On the back of **Activity 4.2-2** have each student do a quick-write and explain which of the fundraiser projects they would most like to be a part of. Students should tell why they made that decision. They should consider their talents, the amount of money made or even how much fun the project might be. If time allows, have a few volunteers share their responses with the class.

EXTENSION

- Pose this question to students: *If you were in Mr. Cash's class, what other fundraising project would you suggest?* Then instruct students to determine the cost of your supplies and the price of your goods or services. Be realistic about how many units you might sell. Determine your profit.

Activity 4.2-1

Name _____ Class Period _____

Directions: Your teacher will assign the roles of Penny, Buck, Richey, Bill, and Mr. Cash for the Readers' Theater below. Those students will practice their parts first and then read their parts. Listen to directions from your teacher.

PENNY: Mr. Cash, we have been thinking that it would only be fair for our class to help with the fundraising for the new playground equipment project.

MR. CASH: Penny, that would be wonderful! What are some of your ideas for raising money?

PENNY: I like to bake cookies, so we could make cookies and sell them here at school, at the carnival, or at the next PTA meeting.

BUCK: Kids always need pencils. My uncle can get us a great deal on big boxes of pencils. We could sell them in the cafeteria before school.

MR. CASH: Great ideas! Who else has an idea?

RICHEY: My aunt has a dog grooming shop. She said we could use her dog bathtub one Saturday. We can keep whatever we make and donate it to the school project. Aunt Sally said it might even be good for her business.

BILL: My sister makes bracelets with beads. Her friends like to wear the ones she makes for them. I've got a great idea! We can make some for girls, but we can make them in team colors and guys would wear them. They're fun and easy to make.

MR. CASH: OK, let's get started. Let me remind you that it is important that our fund raising projects make a profit. That means that we need to make more in sales than we spend on supplies. Will each one of you head up a team?

ALL FOUR STUDENTS: YES, SIR!!!

Activity 4.2-2

Name _____ Class Period _____

Directions: Use the information given to find the total expenses for each of the projects. Then determine the total amount of money each project earns. This is called revenue. Use the total expenses and the total amount each project earned to calculate the profit. Your teacher will help you with the first one.

Dog Shampooing		Cookie Sales	
Dog Shampoo 2 bottles x \$6.18 per bottle =		Chocolate chips 2 bags x \$5.68 per bag =	
Grooming Brush	\$4.97	Flour	\$2.44
		Sugar	\$2.88
		Eggs	\$1.18
		Baggies	\$2.98
Total Expenses:		Total Expenses:	
If the class shampoos 15 dogs and charges \$8 for each shampoo, what is the total revenue collected for shampooing dogs?		This recipe makes 3 dozen cookies. 4 batches of 3 dozen cookies makes _____ cookies. If there are 6 cookies in a package, how many packages can be made with 4 batches of 3 dozen cookies? _____ If these packages are sold for \$2 each, what is the total revenue collected from the cookie sale? _____	
Total Revenue:		Total Revenue:	
Calculate Profit: Revenue for dog shampooing _____ Expenses _____		Calculate Profit: Revenue from cookie sales _____ Expenses _____	
Profit:		Profit:	

Pencil Sales		Bracelet Sales	
Large box of pencils (1 gross) (Recall that 1 gross = 144)	\$31.99	Pony beads 1 package of each color: red, white, blue, pink, purple, yellow, green, black, orange, and gold \$2.99 per package x _____ packages =	
		Elastic stretch cord	\$8.99
Total Expenses:		Total Expenses:	
Sell 144 pencils for 50¢ per pencil 144 x 50¢ = <i>(Be sure to change the cents to dollars. Use a calculator if needed.)</i>		Sell 97 ten-inch bracelets for \$1 each 97 x \$1 =	
Total Revenue:		Total Revenue:	
Calculate Profit: Revenue from pencil sales _____ Expenses _____		Calculate Profit: Revenue from bracelet sales _____ Expenses _____	
Profit:		Profit:	

1. Order the amounts of profit from each team project from least to greatest.

2. The fundraiser was a success! All four groups sold out. What is the total amount of money Mr. Cash's class will donate to the playground equipment fundraiser for Capital Elementary School? Show your work in the space below.

Key 4.2-2

Name _____ Class Period _____

Directions: Use the information given to find the total expenses for each of the projects. Then determine the total amount of money each project earns. This is called revenue. Use the total expenses and the total amount each project earned to calculate the profit. Your teacher will help you with the first one.

Dog Shampooing		Cookie Sales	
Dog Shampoo 2 bottles x \$6.18 per bottle =	\$12.36	Chocolate chips 2 bags for \$5.68 per bag =	\$11.36
Grooming Brush	\$ 4.97	Flour	\$ 2.44
		Sugar	\$ 2.88
		Eggs	\$ 1.18
		Baggies	\$ 2.98
Total Expenses:	\$17.33	Total Expenses:	\$20.84
If the class shampoos 15 dogs and charges \$8 for each shampoo, what is the total revenue collected for shampooing dogs? <u>\$120.00</u>		This recipe makes 3 dozen cookies. 4 batches of 3 dozen cookies makes <u>144</u> cookies. If there are 6 cookies in a package, how many packages can be made with 4 batches of 3 dozen cookies? <u>24</u> If these packages are sold for \$2 each, what is the total revenue collected from the cookie sale? <u>\$48</u>	
Total Revenue:	\$120.00	Total Revenue:	\$48.00
Calculate Profit:		Calculate Profit:	
Revenue for dog shampooing	<u>\$120.00</u>	Revenue from cookie sales	<u>\$48.00</u>
Expenses	— <u>\$17.33</u>	Expenses	— <u>\$20.84</u>
Profit:	\$102.67	Profit:	\$27.16

Pencil Sales		Bracelet Sales	
Large box of pencils (1 gross)	\$31.99	Pony beads 1 package of each color: red, white, blue, pink, purple, yellow, green, black, orange, and gold \$2.99 per package x <u>10</u> packages =	\$29.90
		Elastic stretch cord	\$ 8.99
Total Expenses:	\$31.99	Total Expenses:	\$38.89
Sell 144 pencils for 50¢ per pencil $144 \times 50¢ = \underline{7200¢}$ <i>(Be sure to change the cents to dollars. Use a calculator if needed.)</i>		Sell 97 ten-inch bracelets for \$1 each $97 \times \$1 = \underline{\$97}$	
Total Revenue:	\$72.00	Total Revenue:	\$97.00
Calculate Profit:		Calculate Profit:	
Revenue from pencil sale	<u>\$72.00</u>	Revenue from bracelet sales	<u>\$97.00</u>
Expenses	— <u>\$31.99</u>	Expenses	— <u>\$38.89</u>
Profit:	\$40.01	Profit:	\$58.11

1. Order the amounts of profit from each team project from least to greatest.

\$27.16, \$40.01, \$58.11, \$102.67 (Cookie Sales, Pencil Sales, Bracelet Sales, Dog Shampooing)

2. The fundraiser was a success! All four groups sold out. What is the total amount of money Mr. Cash's class will donate to the playground equipment fundraiser for Capital Elementary School? Show your work in the space below.

\$27.16 + \$40.01 + \$58.11 + \$102.67 = \$227.95