

SUPERMARKET SPREE

Project Based Learning

4th Grade

CHALLENGE #3: CHECKING OUT

4. When you get home, you need to put the groceries away. You have 12 items you need to put in the pantry. You have 7 items you need to put in the fridge. Write and solve an addition equation showing what fraction of your 25 total groceries go in the pantry or the fridge.

$$\frac{19}{25}$$

CHALLENGE #3: CHECKING OUT

Solve the problems below.

5. Your mom asks you to give are 5 people who will be ea will be eaten at dinner?

1. You have 25 total items in your cart. Five of these items are dried goods. Show what fraction
2. Write two equivalent fractions for your answer to question 1. Write the fraction as a decimal.

$$\frac{10}{50}$$

$$0,20$$

fractions

decimal

BUDGET CHECK #6

In the table below, copy the data for how much you spent in the produce aisle from Budget Check #5. Next, fill in the cost of the items for Dad's cookout. Calculate how much money you have left to do the rest of the shopping.

Category	Cost	Total Running Cost
Produce Aisle	\$10	\$15
Dad's Cookout	\$5	\$10
Dried Goods	\$2	\$2
Refrigerated Goods		
At the Checkout		

you can place them in the bags. You bags. You put the leftover items in sh bag.



DAD'S COOKOUT ITEMS

Next, you pick up the items for Dad's cookout. Look back at which items you chose for Dad's cookout prices are listed below.



ost of the items you chose.

budget of \$25. Do your items still fit within that budget? Explain.

do.

anges to your item choices to make sure your total is less than \$25, or add r to the budget. Explain any changes you made.

SETTING THE BUDGET

Before you leave for the store, your mom gives you the money to buy the groceries. She shows you the type and number of bills and coins below. Calculate how much money you have to spend at the supermarket. Write the amount under each bill and coin type.



2 - \$20 bills 2 - \$10 bills 4 - \$5 bills 4 - \$1 bills 3 quarters 4 dimes 3 nickels 6 pennies

Print and Digital



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resource to your own Google Drive.

FOR THE TEACHER

SUPERMARKET SPREE is a project-based learning task that involves using fourth grade math standards to plan a budget and plan and carry out a grocery shopping trip. It was created for students in fourth grade. The following standards are addressed:

- 4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.
- 4.NBT.B.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers.
- 4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals.
- 4.NF.A.2 Compare two fractions with different numerators and different denominators.
- 4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100.
- 4.NF.C.7 Compare two decimals to hundredths by reasoning about their size.



DIRECTIONS:

1. Assign students to work alone or in small groups.
2. Preview the activity with your students.
3. Allow students class time to complete the activity. This can span several days.
4. Allow students an opportunity to complete extra challenge activities (Optional).
5. Allow students to complete the self-reflection and evaluation rubric.
6. Allow students an opportunity to share their completed projects.

SUPERMARKET SPREE

Your parents have given you the responsibility of going to the supermarket and purchasing all the food and necessary items your family will need for the week. It is your job to budget for all the items, compare costs of similar items, analyze sales prices, and make other decisions about your family's grocery purchase.

Here are your tasks:

- Read through the entire packet before beginning.
- Count money to determine your shopping budget.
- Estimate the cost of the items your family members want you to purchase.
- Help your sister calculate how much money she has in her piggy bank.
- Determine the price of items at the supermarket by counting coins and calculating coupons and sales.
- Solve one- and two-step word problems about item prices.
- Keep track of how much money you are spending to ensure you don't go over budget.
- Complete the challenge pages. (Optional)
- Complete the self-reflection and evaluation rubric.



SETTING THE BUDGET

Before you leave for the store, your mom gives you the money to buy the groceries. She shows you the type and number of bills and coins below. Calculate how much money you have to spend at the supermarket. Write the amount under each bill and coin type.



2 - \$20 bills



2 - \$10 bills



4 - \$5 bills



4 - \$1 bills



3 quarters



4 dimes



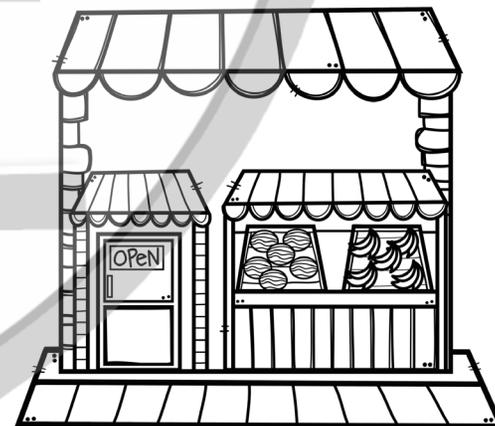
3 nickels



6 pennies

1. Find the total amount of money you have. Show your work below.

2. The total budget for my supermarket shopping trip is _____



MOM'S GROCERY LIST

Different people in your family have given you lists of things they need from the store. Below is the list of items Mom wants. Estimate what you think the cost of each item may be. Then, find the total estimate.

Item	My Estimate
 1 gallon of milk	\$ _____ . _____
 1 loaf of bread	\$ _____ . _____
 1 fish	\$ _____ . _____
 1 jar of peanut butter	\$ _____ . _____
 1 pound of cherries	\$ _____ . _____
TOTAL	\$ _____ . _____



BUDGET CHECK #1

It's important that you keep track of the budget to make sure you have enough money to buy all the items. In the table below, fill in your estimate for Mom's groceries from the previous page. Calculate how much money you estimate you will have left after getting Mom's items.

Person's Groceries	Estimated Cost	Estimated Total Cost
Mom		
Grandma		
Dad		
Julia		

Final Amount Remaining

$$\begin{array}{rcccl} \boxed{\$85.36} & - & \boxed{} & = & \boxed{} \\ \text{Starting} & & \text{Estimated} & & \text{Money} \\ \text{Budget} & & \text{Total Cost} & & \text{Remaining} \end{array}$$

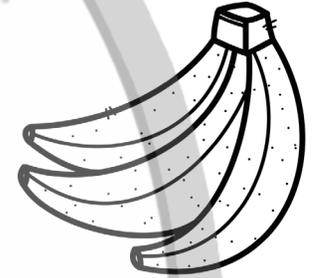


GRANDMA'S RECIPE

Your grandmother needs the ingredients to make a loaf of her special banana bread. She gave you the recipe card so that you can be sure to purchase all the necessary ingredients. Read the recipe card and highlight all the ingredients you need to purchase.

grandma's special banana bread

Ingredients	Directions
3 ripe bananas, mashed	• Preheat oven to 325 degrees.
$\frac{2}{3}$ cup sugar	• Put all ingredients into a large bowl. Mix well.
1 egg	• Pour batter into greased loaf pan.
$\frac{1}{4}$ cup melted butter	• Bake 1 hour.
1 $\frac{1}{2}$ cups flour	
1 tsp. salt	



Now, complete the table with the items you will need to purchase for Grandma. Estimate the price of each item. Then, find the total estimate.

Item	My Estimate
	\$ _____ . _____
	\$ _____ . _____
	\$ _____ . _____
	\$ _____ . _____
	\$ _____ . _____
	\$ _____ . _____
TOTAL	\$ _____ . _____

DAD'S COOKOUT

Your dad is having your Uncle Ricky over tomorrow for a cookout. He needs you to pick up some items for him to barbecue, but he doesn't want to spend more than \$25 on all the ingredients. Below are a list of some items Dad could use for his cookout and what you estimate they might cost. Circle the items you are going to get for Dad. Remember: you need enough food for Dad and Uncle Ricky to have for dinner, but you can't spend more than \$25.



2 steaks
\$18.45



1 chicken
\$8.95



2 ears of corn
\$3.10



Sausage links
\$5.85



Quart of
lemonade
\$1.99



1 pound shrimp
\$13.89



4 turkey legs
\$16.15

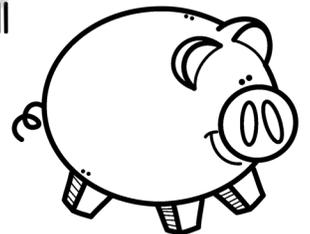
Now, complete the table with the items you will purchase for Dad and the estimated prices from above. You might not use all spaces in the table. Calculate the total estimated cost.

Item	My Estimate
	\$ _____ . _____
	\$ _____ . _____
	\$ _____ . _____
	\$ _____ . _____
	\$ _____ . _____
TOTAL	\$ _____ . _____

JULIA'S PIGGY BANK

Your sister Julia has been doing odd jobs for the neighbors after school, and she has been saving up the money she has earned in her piggy bank. Answer the questions below.

1. Julia has walked your neighbor's dog every day for the past 3 days. Each day, she is paid \$5.15. How much has Julia earned dog walking?
2. Julia earned \$12 by weeding Mrs. Morrison's garden. She spent half what she earned on a new book, then \$3 on some snacks one day at the store. How much money from weeding does Julia have left?
3. Your parents give Julia a quarter each day she makes her bed. She has made her bed 7 times in the last two weeks. How much money does Julia have from making her bed?
4. How much money does Julia have in total?
5. Julia gives you a shopping list that she estimates will cost \$18.60. How much money will she have left over after?



PRODUCE AISLE

You have arrived at the grocery store! Your first stop is the produce aisle. From this aisle, you need to buy one pound of cherries for Mom and a bunch of bananas for Grandma. Answer the questions below.

1. There are three different types of cherries to choose from. Fill in the missing prices below.



Rainier Cherries

Cost: \$3.79 per pound



Bing Cherries

Cost: 13¢ less per pound than Rainier cherries. They cost _____ per pound.



Morello Cherries

Cost: 21¢ more per pound than Bing cherries. They cost _____ per pound.

2. You call your mom to ask which type of cherries to buy. She tells you to buy one pound of the most expensive cherries. You pick _____ cherries that cost _____ per pound.
3. There is a sale on bananas today. Each banana costs 27¢. If you buy a bunch of 6 bananas, how much will it cost?
4. How much did you spend in total in the produce aisle?



DAD'S COOKOUT ITEMS

Next, you pick up the items for Dad's cookout. Look back at which items you chose for Dad's cookout circle those items. The actual prices are listed below.



2 steaks
\$19.10



1 chicken
\$5.98



2 ears of corn
\$2.05



Sausage links
\$4.85



Quart of
lemonade
\$4.09



1 pound shrimp
\$15.90



4 turkey legs
\$15.25

1. Calculate the actual total cost of the items you chose.
2. Remember that Dad had a budget of \$25. Do your items still fit within that budget? Explain.
3. If necessary, make any changes to your item choices to make sure your total is less than \$25, or add any extra items to get closer to the budget. Explain any changes you made here.
4. You had \$25 set aside for Dad's cookout. How much of that money will be left over after buying these items?

DRIED GOODS

Your next stop is the section of the supermarket with dried goods- items that won't perish (like fruits and vegetables) and don't need to be kept cold. The table below shows the items you need in this section.

Item	 Loaf of Bread	 Jar of Peanut Butter	 Bag of Sugar	 Bag of Flour	 Canister of Salt
Cost					

- You have a coupon for \$1.55 off a loaf of bread. The bread usually costs \$3.60. How much does it cost now? Fill in the table with the price.
- There are two choices for peanut butter: Peanuttly! brand peanut butter for \$5.95 or the store brand for \$1.85 less. Choose one and write the price in the table.
- Bags of sugar or flour that weigh 500 grams costs \$2. A one kilogram bag of sugar or flour costs \$3.50. You choose the size that is a better deal. Write the prices in the table.
- There is an error on the price sign for the salt. It says that the price is $2\frac{12}{100}$ dollars. How much does the salt cost? Fill in the table with the price.
- How much will the dried goods cost in total?

BUDGET CHECK #7

In the table below, copy the data for how much you spent in the produce aisle and Dad's cookout items from Budget Check #6. Next, fill in the cost of the dried goods. Calculate how much money you have left to do the rest of the shopping.

Category	Cost	Total Running Cost
Produce Aisle		
Dad's Cookout		
Dried Goods		
Refrigerated Goods		
At the Checkout		



Final Amount Remaining

\$85.36	-	□	=	□
Starting Budget		Total Running Cost		Money Remaining

REFRIGERATED GOODS

You take a turn down the refrigerated aisle. First, you stop at the seafood counter to buy a fish for your mom. There are different types of fish with different prices, as shown below.



2 pound Trout
\$8.33 per pound



3 pound Red Snapper
\$7.15 per pound



1 pound Salmon
\$14.50 per pound

- Using the price per pound and the weight of each fish, determine the total price of each and write the prices in the spaces.
- Your mom told you not to buy the most expensive fish or the least expensive fish when looking at the total price. Which fish do you buy?
- Next, you stop at the dairy refrigerator. Your mom told you to buy the type of milk that costs \$3 per gallon. Determine the prices of the milks in the table below. Circle the milk you choose.

Type of Milk	Skim	1%	2%	Whole
Price per Gallon (coins)	6 quarters, 2 dimes, 7 nickels, 9 pennies	7 quarters, 3 dimes, 5 nickels, 4 pennies	5 quarters, 7 dimes, 4 nickels, 10 pennies	8 quarters, 6 dimes, 7 nickels, 5 pennies
Price per Gallon (dollars)				

AT THE CHECKOUT

You are almost finished! All of the items your sister, Julia, wanted can be found near the registers at the checkout. So, you head there. Answer the questions about Julia's shopping list.

1. Julia asked for three magazines: *Pony & Horse Aficionados*, *Kids News Weekly*, and *Arts & Crafts Digest*. *Pony & Horse Aficionados* costs \$2.25. *Kids News Weekly* costs \$1.98, and *Arts & Crafts Digest* costs \$2.36. How much do the magazines cost in total?
2. Julia estimated that the magazines would cost \$10. How close was her estimate?
3. Julia asked for some candy, but she didn't specify which kind. A chocolate bar costs \$1.30. A super-sized lollipop costs 18¢ more than a chocolate bar, and a pack of gum costs 7¢ less than a chocolate bar. What are the prices of the lollipop and the pack of gum?
4. You decide to buy Julia one of each type of candy listed in the previous question. How much does the candy cost in total?
5. How much did you spend all together on Julia's shopping list?



CHALLENGE #1: MAKING CHANGE

As you're waiting to pay for your groceries, the customer in front of you is paying for their items. Answer the questions.

1. The other customer's total is $34\frac{3}{10}$ dollars, plus $3\frac{17}{100}$ dollars in tax. How much is their total? Explain which dollars and bills you could use to pay that amount in exact change.
2. The customer gives the cashier two \$20 bills. How much change does the cashier owe the customer?
3. Give two different combinations of bills and coins that the cashier could give the customer in change.
4. As the customer is leaving, he puts some change in a donation jar. When you look in the donation jar, you see the following coins. Use multiplication to calculate how much money is in the donation jar.

Type of Coin	 Quarter	 Dime	 Nickel	 Penny
Number in Jar	12	15	18	57

SELF-EVALUATION

Circle or shade one box per row on the rubric that expresses how you rate yourself on this Project Based Learning Activity.

+	✓	-
I felt very confident about the math in this project.	I felt pretty good about my ability to complete the math in this project.	I felt a lot of the math in this project was too hard for me to do alone.
I understood all of the math and did not need help to complete the problems.	I understood most of the math but needed a little help to solve some of the problems.	I understood some of the math but needed help to complete most of the problems.
I easily used many strategies to solve the math problems efficiently.	I needed some help to use the best strategies for solving the math problems.	I had trouble understanding the best way to solve many of the math problems.
I feel I am ready for a harder math project.	I feel I would like to spend more time practicing similar math problems.	I feel I need assistance to work on similar math problems

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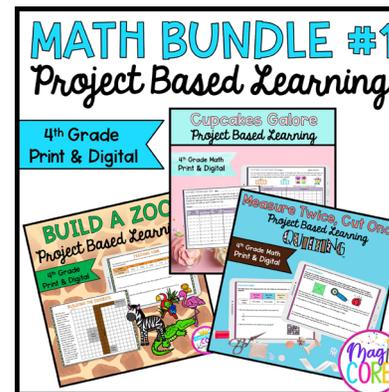


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