

MATH BUNDLE #3

Project Based Learning

4th Grade
Print & Digital

Pizza Fractions Project Based Learning

4th Grade Math
Print & Digital

PIZZA FRACTIONS-3

On Saturday, the Barone family come into Pizza. Pizza to celebrate their mom's birthday.

1. The family wants three large pizzas but cannot agree on toppings. Help them decide what to put on each pizza based on their preferences. Read the information on the slides and develop a plan for the Barone family. Next, drag the toppings onto the pizzas. Then, drag each person's name onto their slices to identify the ones they will eat.

Everyone will get 3 slices of pizza. Toppings can only be added to half or whole pizzas. All pizzas come with sauce and cheese. There will be slices left over.

SUPERMARKET SPREE

Project Based Learning

4th Grade Math
Print & Digital

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.



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

2. The total budget for my supermarket shopping trip is

DAD'S COOKOUT ITE

Next you pick up the items for Dad's cookout. Look back at which items you chose to add and drag a check to these items. The actual prices are listed below.



1. Calculate the actual total cost of the items you choose.

2. Remember that Dad had a budget of \$25. Do your items add up 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 make here.

4. You had \$25 set aside for Dad's cookout. How much of that money will be left over after buying these items?



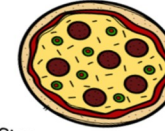
Pizza Fractions

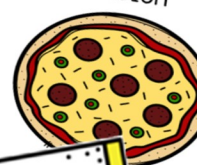
Project Based Learning

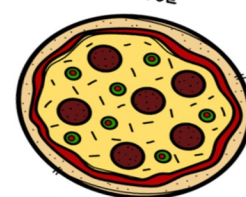
4th Grade Math
Print & Digital

PIZZA FRACTIONS-1

You are working at PIZZA, PIZZA, the best pizza shop in town. Today, you were asked to help Ahmed, the new employee, cut the pizzas before they are served. Use the line tool  to draw lines to show Ahmed how to cut the pizzas based on the criteria from Mr. and Mrs. Caesar.

SMALL

CUT INTO QUARTERS

MEDIUM

CUT INTO EIGHTHS

LARGE

CUT INTO EIGHTHS

How many slices will you each get?
How many pieces would you have cut? Drag the dots

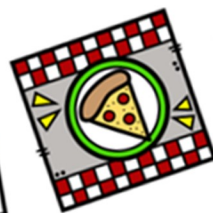
PIZZA FRACTIONS-3

On Saturday, the Barone family came into Pizza, Pizza to celebrate their mom's birthday.

1. The family wants three large pizzas but cannot agree on toppings. Help them decide what to put on each pizza, based on their preferences. Read the information on the slides and develop a plan for the Barone family. Next, drag the toppings onto the pizzas. Then, drag each person's name onto their slices to identify the ones they will eat.



Everyone will get 3 slices of pizza. Toppings can only be added to half or whole pizzas. All pizzas come with sauce and cheese. There will be slices left over.





Standards Addressed:

- 4.OA.A.1 Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
- 4.OA.A.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the 4 operations.
- 4.NBT.B.4 Fluently add & 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, using strategies based on place value and properties of operations. Illustrate and explain by using equations, rectangular arrays, and area models.
- 4.NF.A.1 Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models.
- 4.NF.A.2. Compare two fractions with different numerators and different denominators.
- 4.NF.B.3.D Solve word problems involving addition and subtraction of fractions.
- 4.NF.B.4.C Solve word problems involving multiplication of a fraction.
- 4.MD.A.2 Use the four operations to solve word problems.
- 4.MD.B.4 Make a line plot to display a data set of measurements in fractions of a unit. Solve problems involving addition and subtraction of fractions.

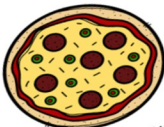
Print & Digital Versions



COOKING PIZZA-2

 **SMALL PIZZAS-18 MINUTES**

 **MEDIUM PIZZAS-24 MINUTES**

 **LARGE PIZZAS-30 MINUTES**

3. Mr. Caesar is preparing a large "to-go" order and asks you to keep track of the cooking times. He made 2 large pepperoni pizzas, 4 medium meatball pizzas, 3 medium cheese pizzas, and 1 small mushroom pizza for the order. Write a plan that shows when the pizzas will go in and come out of the ovens. Include which ovens you use.

4. The restaurant was slow from 2:00 p.m. to 4:00 p.m. so Mrs. Caesar used only one oven to cook. Read the information below and determine how many minutes the oven was used during the two hours. Show your thinking.

1 small pizza was put in at 2:05 *2 large pizzas were put in at 2:47* *3 medium pizzas were put in at 3:26*

COOKING PIZZA-2

 **SMALL PIZZAS-18 MINUTES**

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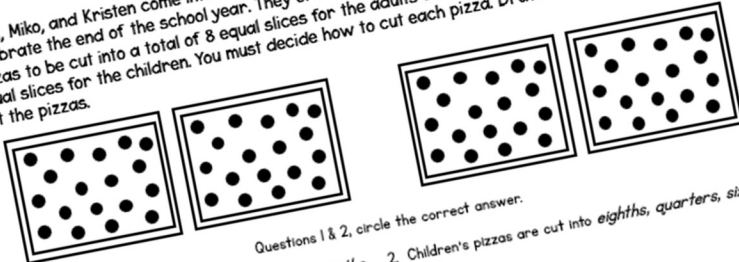


Explores Fractions & Partitioning



MAKE THE CUT-2

Sami, Miko, and Kristen come into PIZZA PIZZA with Mom, Dad, Grandmother, and Grandfather to celebrate the end of the school year. They order 4 large pizzas and soda. Dad asks for two pizzas to be cut into a total of 8 equal slices for the adults and two pizzas be cut into a total of 12 equal slices for the children. You must decide how to cut each pizza. Draw lines to show how you cut the pizzas.



Questions 1 & 2, circle the correct answer.

- Adult pizzas are cut into *eighths*, *quarters*, *sixths*.
- Children's pizzas are cut into *eighths*, *quarters*, *sixths*.
- Why do you think Dad asked for the pizzas to be cut differently?
- How many slices can each adult eat if they share them equally? Show with an equation.
- Kristen thinks if the children each eat $\frac{1}{3}$ of the slices, they will get 3 slices each. Is she correct? Explain.

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PIZZA FRACTIONS-4

Use the pizzas that you created for the Barone family to answer the following questions.

- How many slices are there in *total*? Use multiplication to solve.
- How many slices have mushrooms on them? Write as a fraction of the *total* two different ways.
- How many slices have added 2 toppings? Write as a fraction of the *total* two different ways.
- Circle the fractions that show how many slices of the *total* have just cheese. $\frac{1}{6}$ $\frac{1}{4}$ $\frac{4}{24}$ $\frac{2}{12}$ $\frac{2}{8}$

Complete each statement.

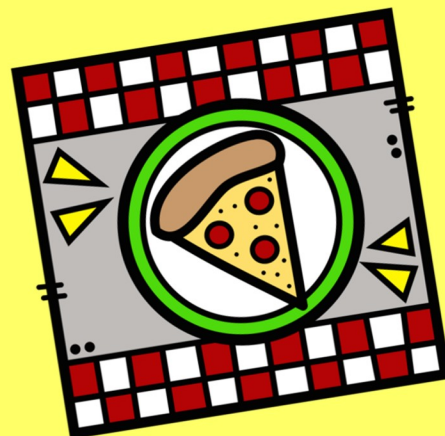
- There are out of total slices that have pepperoni on them.
- Write a fraction that shows how many slices were eaten.
- Olives, and are on the same number of slices.
- More slices have than any other topping, other than cheese.



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Challenge Activities



CHALLENGE 2

Complete the table using the information from the Weekly Special challenge on the previous page.

PIZZA SPECIALS	COST TO MAKE	PRICE TO PURCHASE	PROFIT EARNED

- Which two pizzas make the same amount of profit?
- On Saturday, Mr. and Mrs. Caesar sold 10 *Nana's Favorite* pizzas, 15 *Meat Lover's* pizzas, 12 *Lulu's Veggies*, and 18 *The Bomb* pizzas. What is the total profit earned selling specials at PIZZA, PIZZA on Saturday?
- If Mrs. Caesar sells 4 *The Bomb* pizzas, how much money will she earn as profit? Solve using an area model.
- Create a pizza with 4 toppings. Describe and name your pizza. Then, determine the total cost to make it. Decide on a reasonable price for your pizza. What is your profit per pizza?

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Student Self-Assessment



Pizza, Pizza

SELF REFLECTION: Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this activity? Why or why not?

RATE THIS PROJECT

Color the pizza of the statement you most agree with.

I am ready for something harder.



It was just right.



PIZZA, PIZZA

SELF REFLECTION: Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this activity? Why or why not?

A large, empty rectangular box with a light orange background, intended for the student to write their self-reflection.

RATE THIS PROJECT

Drag the checkmark to the pizza of the statement you most agree with.

I am ready for something harder.



It was just right.



I found this very challenging.



Perfect Party Planners

Project Based Learning

4th Grade Math
Print & Digital

Amazing Amos

Mr. Bell has a friend who is a magician. His name is Amazing Amos. He is available to come to the celebration to entertain everyone. He offers three shows that are all different lengths. Review the options to help you decide which show is best for the barbecue.

Version 2, page 17

Amazing Amos		
Show 1	Snakes Alive	35 minutes
Show 2	Disappearing Doves	1 hour & 10 minutes
Show 3	Seeing is Believing	50 minutes

1. Mr. Bell suggests that before you decide which show to schedule, you should consider the length of each magic show. The celebrations must be cleaned up by 7:45 p.m. If Amazing Amos begins at 6:15 p.m., at what time will each of his shows end? Use a number line to show your math. Drag the vertical lines to partition the number line to show elapsed time.

Budget Break #1

Version 2, page 8

Periodically, you must return to the budget sheet and do your calculations. It is time to enter the cost for meat and rolls. After you enter the actual cost, you must calculate the difference as + (over) or - (under) from the budgeted cost.

Purchases	Budgeted cost	Actual cost	Difference +/-
Meat	\$600.00		
Rolls	\$200.00		
Water	\$50.00		
Paper Goods	\$150.00		
Rented Chairs	\$1500.00		
Rented Tables	\$1500.00		
Activities & Decorations	\$500.00		
Total	\$4500.00		



Standards Addressed:

- 4.OA.A.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the 4 operations, including problems with remainders.
- 4.NBT.A.2 Read and write multi-digit whole numbers using base ten numerals.
- 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, using strategies based on place value and the properties of operations.
- 4.NF.B.4 Apply and extend previous understanding of multiplication to multiply a fraction by a whole number.
- 4.MD.A.1 Know relative sizes of measurement units within one system of units.
- 4.MD.A.2 Use the 4 operations to solve word problems, including problems involving single fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as a number line that feature a measurement scale.
- 4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Print & Digital Versions

Perfect Party Planners

Complete the table using the data from the previous page. Then answer the questions.

Version 2, page 2

	Votes for Lazy Luau	Votes for Campfire Fun	Votes for I Scream for Ice Cream	Total Students
Mr. Green's class				
Ms. Butler's class				
Mrs. Bradford's class				
Ms. Clifford's class				
Miss Gardner's class				
Mr. Bell's class				
Total				

1. What is the difference in number between the theme with the most votes and the one with the fewest votes?

2. What will the theme be for the end of year celebration?

3. How many students are in your grade? Show how you know.



Perfect Party Planners

Complete the table using the data from the previous page. Then answer the questions.

Version 2, page 2

	Votes for Lazy Luau	Votes for Campfire Fun	Votes for I Scream for Ice Cream	Total Students
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Ms. Butler's class				
Mrs. Bradford's class				
Ms. Clifford's class				
Miss Gardner's class				
Mr. Bell's class				
Total				

1. What is the difference in number between the theme with the most votes and the one with the fewest votes?

2. What will the theme be for the end of year celebration?

3. How many students are in your grade? Show how you know.



Aligned to CCSS Math Standards

Arranging Tables

Version 2, page 13

Mr. Clifford will rent you the tables for a flat fee of \$1,500.00. The tables are square and can seat one person on each side. Tables can be pushed together to form rectangles or larger squares. Your teachers have asked each student to design one table arrangement with seating options for the party. Use the graph paper page to plan and draw your design for the barbecue.

Each square table is the size of one square on the graph paper. You must assign squares to tables and seats. As you arrange your tables, you must consider space between seats so that people can get in and out of their seats. Use the shape tool  to draw and place your shapes on the grid. Once you are happy with your design, create a key to help your teachers understand your plan. Be sure to shade the tables and chairs according to your key.

How many tables do you need from Mr. Clifford's store?

Use the example provided to help you get started. You must have the number of seats listed for each table. Your plan must include the correct number of seats for the party.

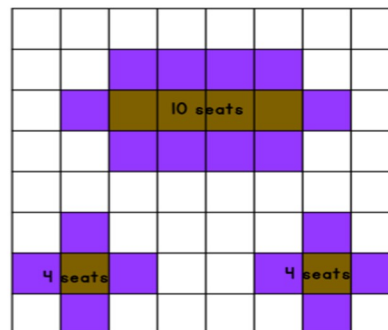
KEY:



= table



= chair



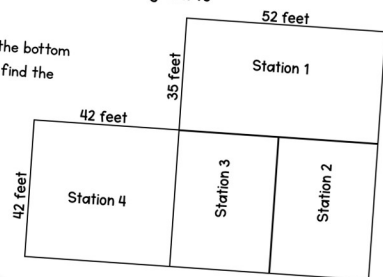
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Challenge Activities

Challenge 2 – Outside Games-Part 1

In addition to the relay races, Mr. Green organized several outside games and activities for students. He painted lines on the field to divide the space into stations. Use the diagram to answer the questions about the field.

- Mr. Green asked for help to determine the measurement of the bottom and right sides of the field. How would you explain the steps to find the missing measurements?



- What is the perimeter of the entire field?

Challenge 1 – Relay Races

- On the night of the party, Mr. Green set up relay races for all students. He created teams of 4 students each. Counting only students, how many teams were there in all?

- Each team ran a relay around the soccer field. The top 5 teams and the runners' times are listed in the table below. Your task is to determine each teams' total time in minutes/seconds. Then, rank the teams in order from 1st through 5th. Calculate the team's total time in the box below the individual scores.

The Razors	We Got This	The Cheetahs	Go Dog Go	Track Stars
Elle 2 min. 23 sec.	Eric 2 min. 9 sec.	Amy 2 min. 4 sec.	Lenny 2 min. 35 sec.	Lucy 1 min. 46 sec.
Ray 1 min. 59 sec.	Jan 2 min. 24 sec.	Dan 1 min. 56 sec.	Meg 1 min. 51 sec.	Will 1 min. 52 sec.
Mel 2 min. 18 sec.	Ron 1 min. 48 sec.	Bria 2 min. 15 sec.	Jon 1 min. 53 sec.	Cara 2 min. 44 sec.
Max 2 min. 7 sec.	Mia 2 min. 12 sec.	Nate 2 min. 27 sec.	Barb 2 min. 15 sec.	Ken 1 min. 58 sec.

Student Self- Reflection & Assessment

Perfect Party Planners

Self Reflection: Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this activity? Why or why not?

Name: _____

Drag the checkmark to the statement you most agree with

☒ I am ready for something harder

☐ It was just right

☐ I found this challenging

Perfect Party Planners

Name: _____

Self Reflection Rubric: Select the parts of the rubric that express how you rate yourself on this Project Based Learning Activity. Circle or shade your selections.

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 understand 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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SUPERMARKET SPREE

Project Based Learning

4th Grade Math
Print & Digital

DAD'S COOKOUT ITE

Next, you pick up the items for Dad's cookout. Look back at which items you chose on slide II and drag a check to 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. 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?

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

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

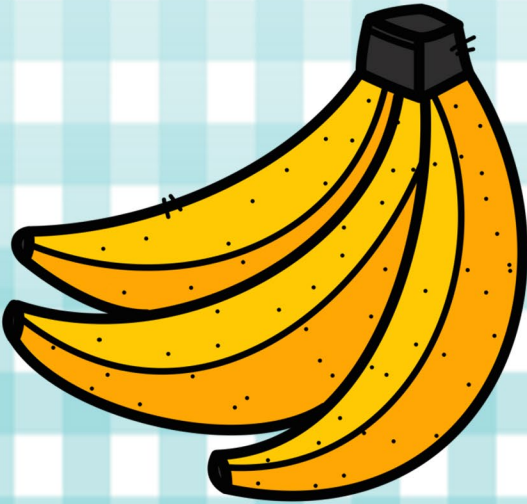
2. The total budget for my supermarket shopping trip is



Standards 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.

Print & Digital Versions



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

- 3 ripe bananas, mashed
- ½ cup sugar
- 1 egg
- ¼ cup melted butter
- 1½ cups flour
- 1 tsp. salt

Directions

- Preheat oven to 325 degrees.
- Put all ingredients into a large bowl. Mix well.
- Pour batter into greased loaf pan.
- Bake 1 hour.



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	\$ _____

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Drag to highlight

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- Bake 1 hour.



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

Explores Various Standards-Based Skills



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 Re



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. Drag checkmarks to 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	\$.

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Challenge Activities

CHALLENGE #3: CHECKING OUT

Solve the problems below.

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

fractions decimal

- After the cashier has scanned your items, you arrange them so you can place them in the bags. You put an equal number of items in each of three reusable shopping bags. You put the leftover items in a brown paper bag. Use division to show how many items go in each bag.



• items • items • items • items

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CHALLENGE #2: PICKING TREATS

In the checkout line, you find an extra \$5 bill in your pocket that you had forgotten about! You decide to use this money to buy yourself a treat for a job well done. The table below shows the prices of some goodies in the checkout aisle.

Treat	Chips	Candy Bar	Gummy Bears	Jerky	Mints	Fruit Snacks
Price	\$1.45	\$1.30	\$2.05	95¢	\$1.05	\$1.55

- If you bought gummy bears and a candy bar, how much would it cost? Express this amount as a mixed number.
- What combination of treats could you purchase that would cost exactly \$5 all together?
- Which treats do you choose to buy? You can buy as many or as few as you would like, but your total must not be more than \$5. How much do your treats cost? Express as a decimal and as a mixed number.
- How much change will you receive after paying for your treats with a \$5 bill?



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Student Self-Assessment



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.	I used a few strategies to solve the math.	I had trouble understanding the best way to solve many of the math problems.
		I feel I need assistance to work on similar math problems.

SELF-REFLECTION

Write a reflection of your experience with this project. How did you feel about the math problems and activities? Explain what you found easy to do and any difficulties you had while working on this project. Did you enjoy this activity? Why or why not?

✓ RATE THIS PROJECT

Drag the checkmark to the statement you most agree with.

I am ready for something harder.

This was just right.

I found this very challenging.