

MATH BUNDLE #3

Project Based Learning

1st Grade
Print & Digital

Dinosaur Measurement Project Based Learning

1st Grade Math
Print & Digital

Which Tool is Best?

In this exploration, you and a partner will use your measurement skills and compare the heights of some dinosaurs. You will not bring to the approximate height of real-life dinosaurs based on scientific estimations. The strings will help you compare the heights of the dinosaurs.

Look at the dinosaur heights in the table below. Decide which tool you think would be the best choice for measuring the height of each dinosaur. You can use these tools: a ruler, a yardstick, or a tape measure. Drag your choice into the boxes.

Dinosaur	Height (in feet)	Which Tool?
Triceratops	2	
Stegosaurus	4	
Brachiosaurus	35	
Spinosaurus	8	
Tyrannosaurus Rex	1	
Velociraptor	1	

SUPERMARKET SPREE

Project Based Learning

1st Grade Math
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SETTING THE BUDGET

Before you leave for the store, your mom gives you the money to buy the groceries. She shows you bills below. Calculate how much money you have to spend at the supermarket.



How much money did your mom give you?

As you are about to leave the house, your dad gives you \$5 extra. How much money do you have now?

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 on slide 42 and drag a check to those items. The actual prices are listed below.

- 1 chicken \$10
- 2 bags of corn \$2
- 1 bag of beans \$3
- 1 bag of rice \$2
- 1 bag of salad \$2
- 1 bag of fruit \$2
- 1 bag of bread \$2
- 1 bag of chips \$2

What total cost of the items you chose?

What had a budget of \$20? Do your items still fit within that budget? Explain.

Make any changes to your item choices to make sure your total is less than \$20, or add more items to the budget. Explain any changes you make here.

What had a budget of \$20? Do your items still fit within that budget? Explain.

Make any changes to your item choices to make sure your total is less than \$20, or add more items to the budget. Explain any changes you make here.



Pizza Fractions Project Based Learning

1st Grade Math
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PIZZA, PIZZA

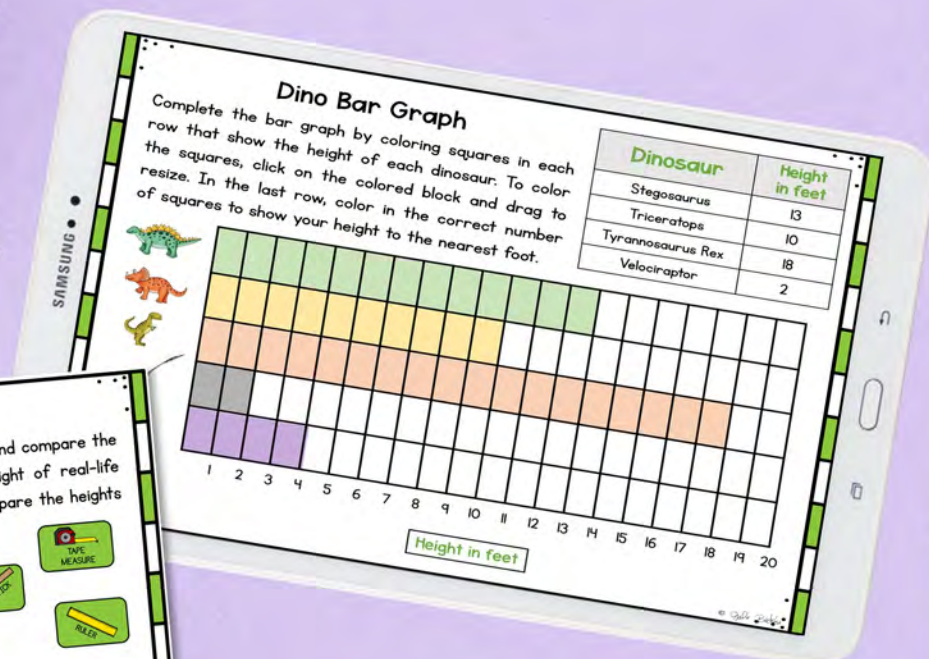
As these green peppers and pepperoni, Kally, these pepperoni and mushrooms.



Dinosaur Measurement

Project Based Learning

1st Grade Math
Print & Digital



Which Tool is Best?

In this exploration, you and a partner will use your measurement skills and compare the heights of some dinosaurs. You will cut string to the approximate height of real-life dinosaurs based on scientists' estimations. The strings will help you compare the heights of the dinosaurs.

Look at the dinosaur heights in the table below. Decide which tool you think would be the best choice for measuring the height of each dinosaur. You can use these tools: a ruler, yardstick, or tape measure. Drag your choice into the boxes.



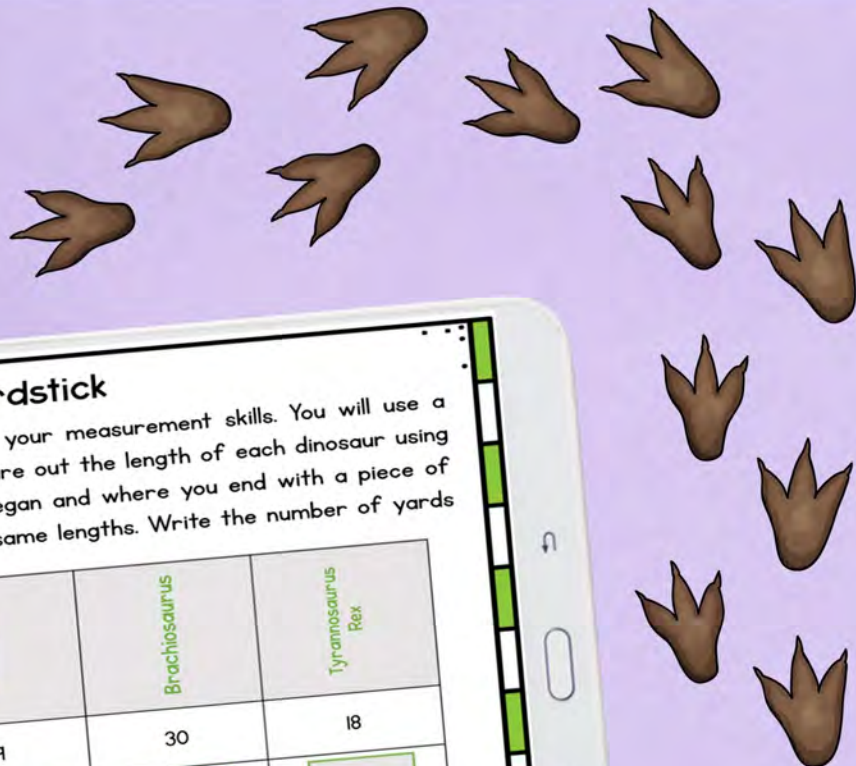

Dinosaur	Velociraptor	Gallimimus	Brachiosaurus	Tyrannosaurus Rex	Troodon	Stegosaurus	Triceratops
Height in feet	2	9	30	18	4	13	
Which Tool?							



Standards Addressed:

- **I.MD.A.1** Order three objects by length; compare the lengths of two objects indirectly by using a third object.
- **I.MD.A.2** Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.
- **I.MD.C.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
- **I.OA.A.1** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.¹
- **I.OA.A.2** Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Print & Digital Versions



Using a Yardstick

You and your partner will continue practicing your measurement skills. You will use a ruler and a yardstick to do this activity. Measure out the length of each dinosaur using a ruler. Mark the floor to show where you began and where you end with a piece of tape. Now, use the yardstick to measure the same lengths. Write the number of yards in the table.



Dinosaur	Gallimimus	Brachiosaurus	Tyrannosaurus Rex
Height in feet	9	30	18
Number of yards			

Why is the number of yards less than the number of feet?

Using a Yardstick

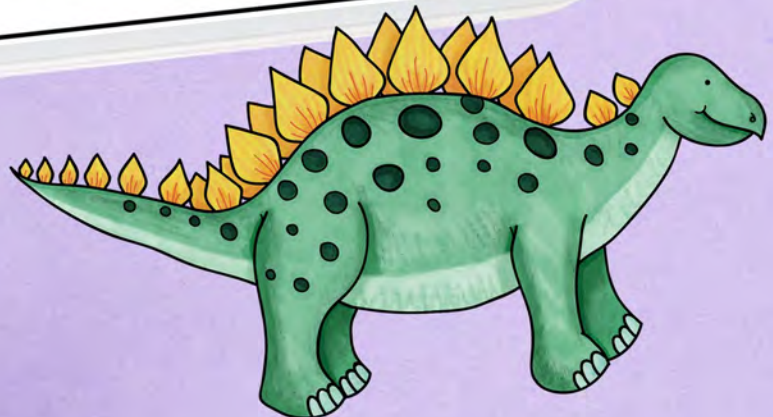
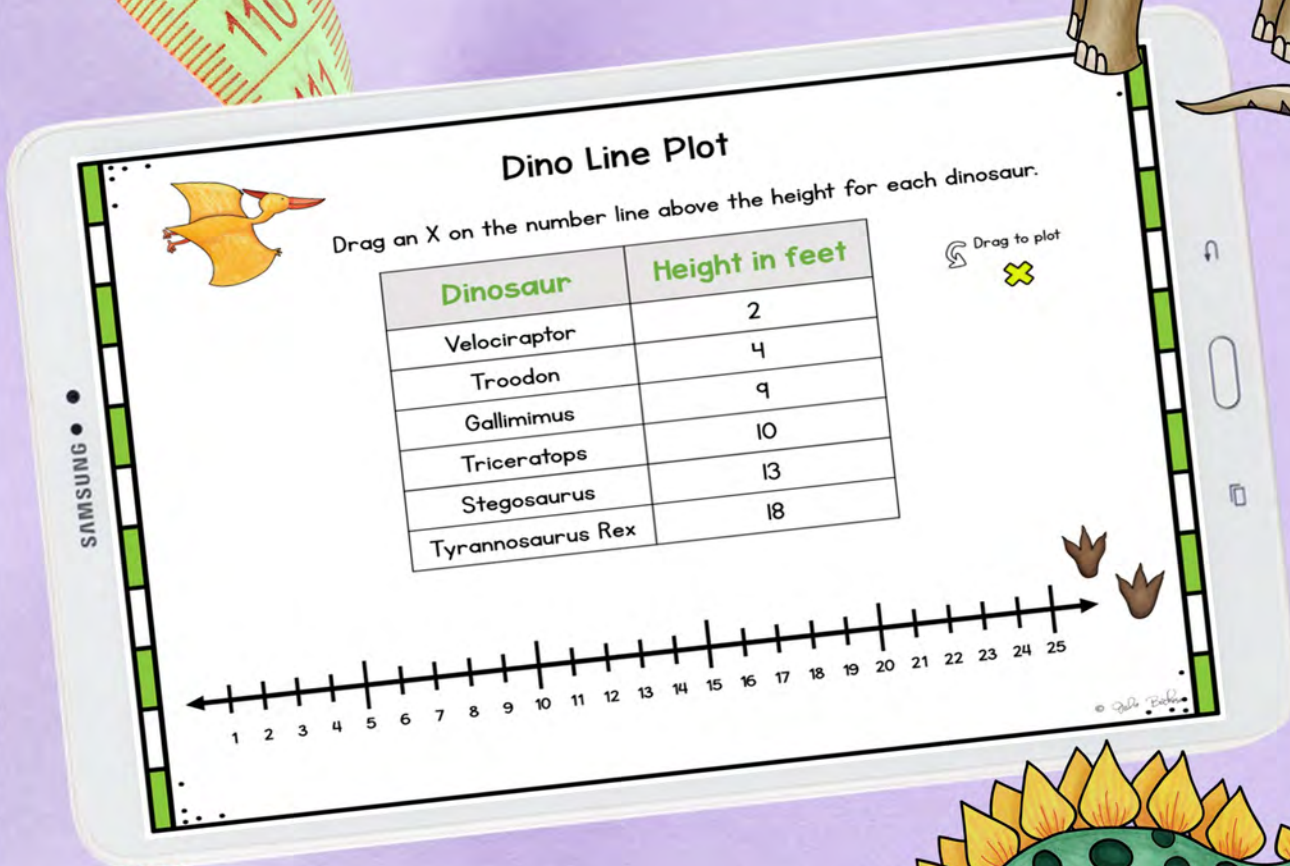
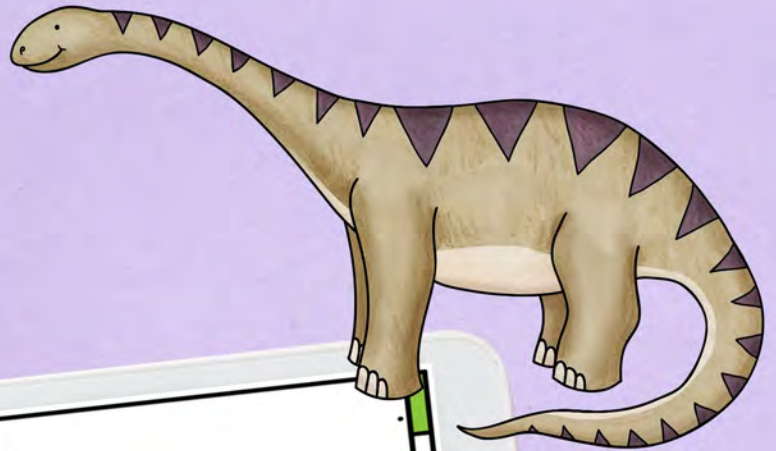
You and your partner will continue practicing your measurement skills. You will use a ruler and a yardstick to do this activity. Measure out the length of each dinosaur using a ruler. Mark the floor to show where you began and where you end with a piece of tape. Now, use the yardstick to measure the same lengths. Write the number of yards in the table.



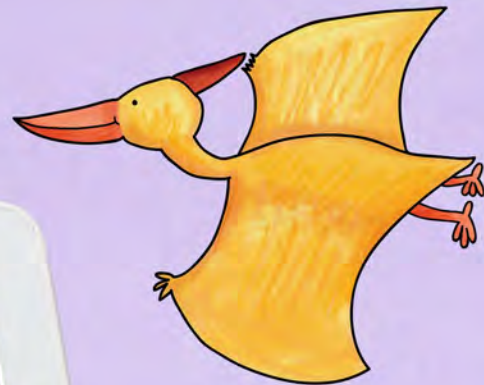
Dinosaur	Gallimimus	Brachiosaurus	Tyrannosaurus Rex
Height in feet	9	30	18
Number of yards			

Why is the number of yards less than the number of feet for each dinosaur?

Interactive Movable Pieces



Explores Measurement & Data



Let's Measure!



Materials

- String or Yarn...lots of it!
- Scissors
- Masking tape or painter's tape
- Marker
- You and a partner
- LARGE workspace to lay the measurements out (Big empty room or pavement outside)
- The measurement tools you selected on the previous slide (ruler, yardstick, tape measure)

Let's see how large these dinosaurs were in real life!

1. With your partner, pick 3 dinosaurs from the table that you want to measure.
2. Measure and cut 3 pieces of string the same length as each dinosaur you picked. Be sure to measure with your tool using end-to-end measurement.
3. Write the name of each dinosaur on a piece of tape and attach it to each string.
4. Put the strings in order from shortest to longest. You can tape each end of the string to the floor.
5. Take turns with your partner and measure your heights to the nearest inch.
6. Cut the strings for your height and your partner's height.
7. Place both of your strings where they fall in the order of dinosaur heights.

My height:

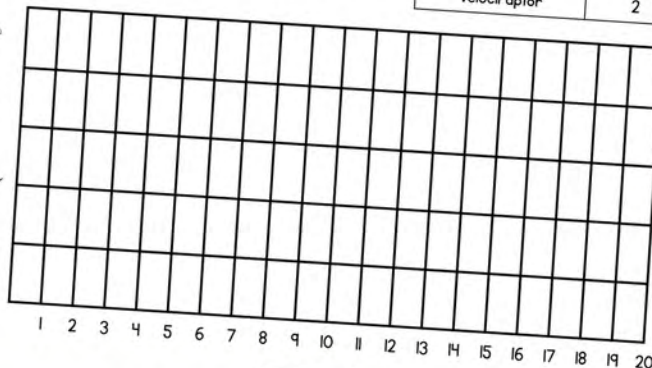
Dino Bar Graph

Complete the bar graph by coloring squares in each row that show the height of each dinosaur. In the last row, color in the correct number of squares to show your height to the nearest foot.

Dinosaur	Height in feet
Stegosaurus	13
Triceratops	10
Tyrannosaurus Rex	18
Velociraptor	2



Me



Height in feet

Challenge Activities



Challenge 3 → More Dino Estimation

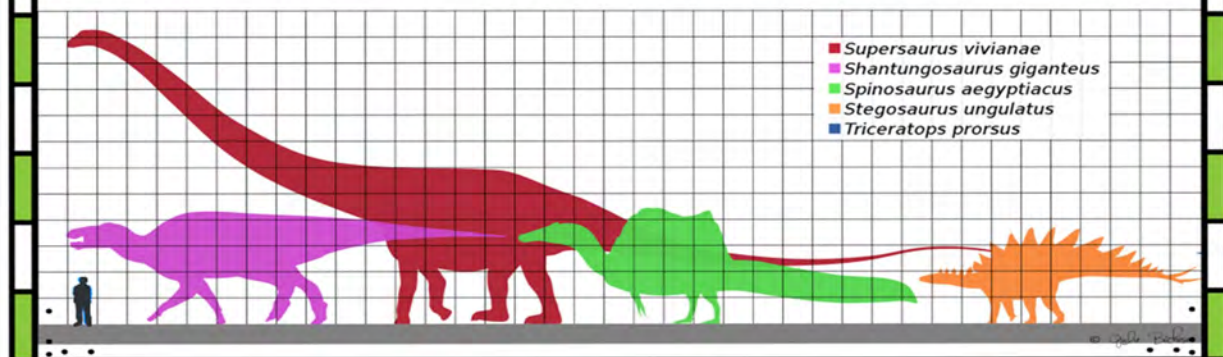
Look at this diagram of dinosaur heights. If the man in the diagram is about six feet tall, about how tall are each of the dinosaur groups? Use the grid lines to help you with your answer. Be sure to ask yourself, "Is my answer reasonable?"

Supersaurus vivianae =

Shantungosaurus giganteus =

Spinosaurus aegyptiacus =

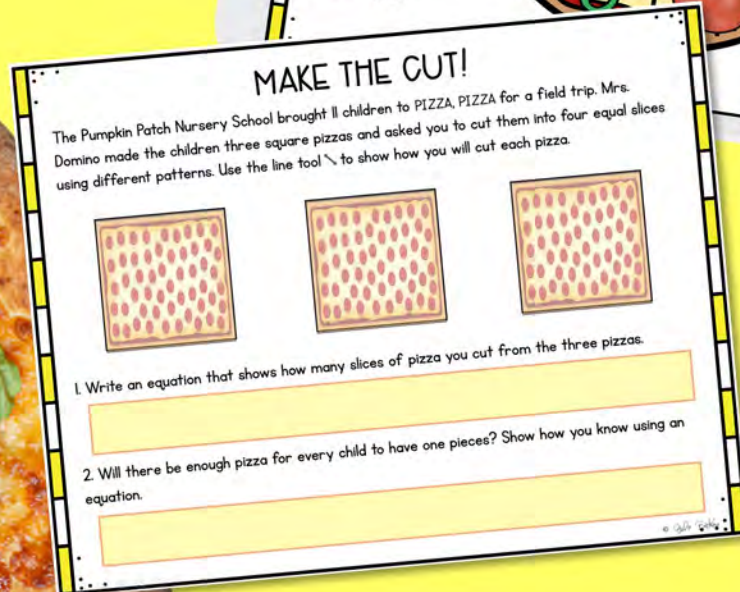
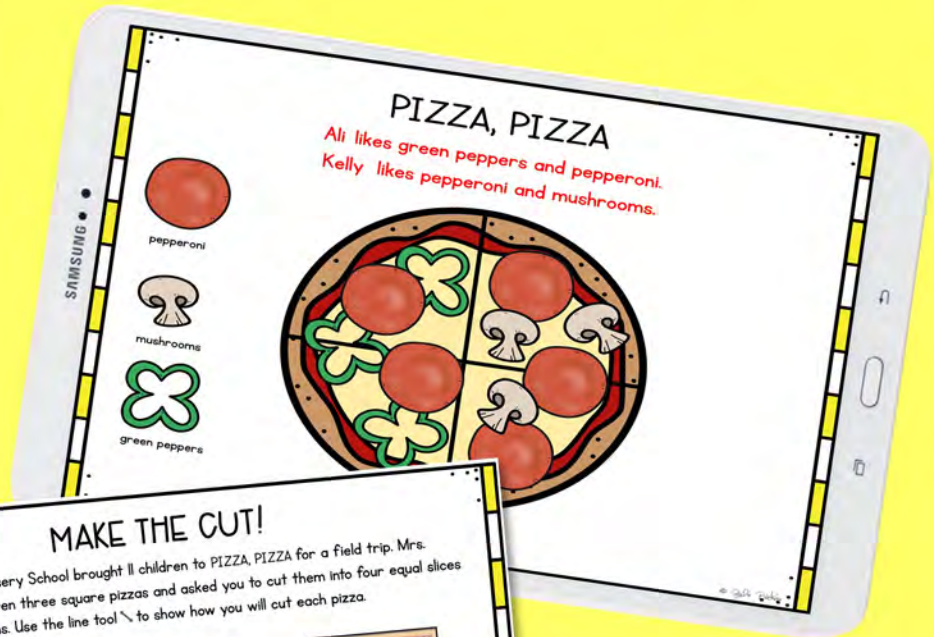
Stegosaurus ungulatus =



Pizza Fractions

Project Based Learning

1st Grade Math
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Explores Fractions & Partitioning



MAKE THE CUT!

Your friends, Mara and Nicole, come into the pizza shop and order individual pizzas. They ask you to cut their pizzas into quarters.

Mara's Pizza

Nicole's Pizza

1. Mara thinks her slices are smaller. Nicole says they are the same size. Who is correct? How do you know?

2. Mara ate 3 pieces of her pizza. Draw an X on the slices that Mara ate. Then complete the statement.

Mara has _____

BE A PIZZA MAKER!

Complete the table and answer the questions below.

TOPPING	Is on _____ out of 4 pieces
Green Pepper	
Pepperoni	
Black Olive	
Mushroom	

1. How many slices have only 1 topping?

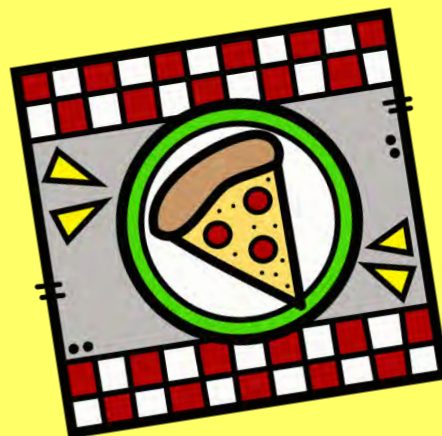
2. How many slices have 2 toppings?

3. Describe one quarter of your pizza.

4. Describe one half of your pizza.



Challenge Activities



CHALLENGE 1 (OPTION 1)

Your class voted for their favorite pizza toppings. Create a bar graph using the data collected. Shade the squares to show the number of people who picked that topping as their favorite. Shade by clicking on the colored blocks and dragging to resize.

PEPPERONI IIII

MEATBALLS IIII IIII

ONIONS I

BACON IIII II

OLIVES IIII I

TOMATOES IIII

TOPPINGS	1	2	3	4	5	6	7	8	9	10
pepperoni										
meatballs										
bacon										
onions										
olives										
tomatoes										

SAMSUNG



Engaging & Interdisciplinary



BE A PIZZA MAKER!

You will be creating the perfect pizza to share with your best friend.
Follow the directions below to help you make the best pizza ever!

1. You must put all 4 toppings on your pizza.
2. You must have toppings on all 4 slices of your pizza.
3. You must have more than 1 topping on 2 slices of pizza.
4. Drag and arrange the toppings on your pizza.
5. You can put toppings on $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ or the whole pizza.



Student Self-Assessment

Pizza, Pizza

SELF REFLECTION RUBRIC: In each row, choose one statement that expresses how you would rate yourself on this math project. Drag the circle to mark the box.

I felt very confident about the math in this project.	I felt good about most of the math in this project.	A lot of the math was hard for me to do alone.
I understood the math problems. I did not need help to complete the problems.	I understood most of the math problems. I needed help to solve some of the problems.	I understood some of the math problems. I needed help to solve most of the problems.
I used good strategies to solve the math.	I needed a little help using the best strategies for solving some of the math problems.	I did not know the best strategy to use for many of the math problems.
I am ready for harder math.	I want more time for similar math projects.	I need help to complete some math problems.

Drag me

PIZZA, PIZZA

SELF REFLECTION: Write about your experience with this project. How did you feel about the math problems and activities? What was easy? Was anything hard for you to do? What did you like best?

RATE THIS PROJECT
Circle the statement you most agree with.

I am ready for something harder It was just right I found this very challenging

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SUPERMARKET SPREE

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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 on slide 10 and drag a check to those items. The actual prices are listed below.

					
1 chicken \$5	2 ears of corn \$2	Sausage links \$6	Quart of lemonade \$3	1 pound shrimp \$12	4 turkey legs \$15

What is the actual total cost of the items you chose.

Dad had a budget of \$20. Do your items still fit within that budget? Explain.

Make any changes to your item choices to make sure your total is less than \$20, or add items to get closer to the budget. Explain any changes you made here.

How much money is left over after you pay for Dad's cookout. How much of that money will be left over after you buy the groceries.

SETTING THE BUDGET

Before you leave for the store, your mom gives you the money to buy the groceries. She shows you bills below. Calculate how much money you have to spend at the supermarket.



Count your money. Keep track of the total by writing the amount under each bill as you count by 10.

How much money did your mom give you?

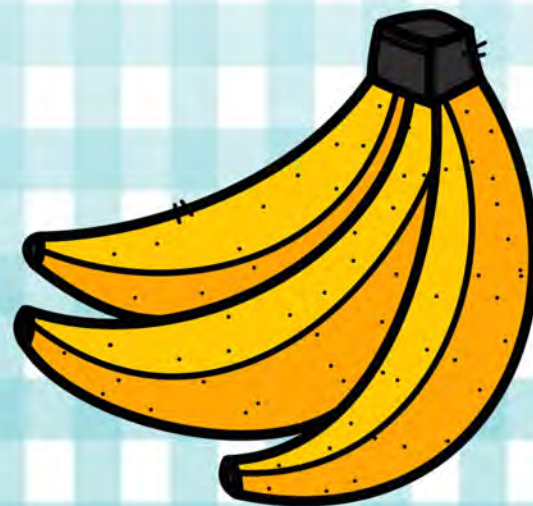
As you are about to leave the house, your dad gives you \$5 extra. How much money do you have now?



Standards Addressed:

- I.OA.A.1 Use addition and subtraction within 20 to solve word problems.
- I.OA.C.5 Relate counting to addition and subtraction.
- I.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits.
- I.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10.
- I.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count.
- I.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.
- I.MD.C.4 Organize, represent, and interpret data with up to three categories.

Print & Digital Versions



SETTING THE BUDGET

Before you leave for the store, your mom gives you the money to buy the groceries. She shows you the bills below. Calculate how much money you have to spend at the supermarket.



1. Count your money. Keep track of the total by writing the amount under each bill as you count by 10s.
2. How much money did your mom give you?
3. As you are about to leave the house, your dad gives you \$5 extra. How much money do you have now?



SETTING THE BUDGET

Before you leave for the store, your mom gives you the money to buy the groceries. She shows you the bills below. Calculate how much money you have to spend at the supermarket.



1. Count your money. Keep track of the total by writing the amount under each bill as you count by 10s.
2. How much money did your mom give you?
3. As you are about to leave the house, your dad gives you \$5 extra. How much money do you have now?



Explores Various Standards-Based Skills



GRANDMA'S RECIPE

GRANDMA'S RECIPE

Your grandmother needs the ingredients to make a loaf of her special banana bread. She gave you the recipe card. You need to purchase all the necessary ingredients. Read the recipe card. Highlight all the ingredients you need to purchase.

Grandma's special Banana Bread

Directions

- Preheat oven to 325 degrees.
- Add all ingredients into a large



grandma's special banana bread

Directions

- Preheat oven to 325

Directions

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

Ingredients

- Ingredients
3 ripe bananas, mashed
1 cup sugar
1 egg
1/4 cup melted butter
1 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 to the nearest dollar. Then, find the total estimate.

1 cup sugar
 1 cup melted butter
 1 1/2 cups flour
 1 tsp salt

• Roll out
 pan.
 • Bake 1 hour.

Item	My Estimate
	\$
	\$
	\$

TO

Your dad is having your Uncle
 for him to barbecue. He does
 some items Dad could use for

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. He doesn't want to spend more than \$20 on all the ingredients. Below is a list of some items Dad could use for his cookout. Below each item is what you estimate it 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 \$20.



2 steaks
\$12



1 chicken
\$6



2 ears of corn
\$3



Sausage link
\$4



Quart of
lemonade
\$2



1 pound shrimp
\$14



4 turkey legs
\$11

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.

[illegible]

Challenge Activities

CHALLENGE #1: TIME

The clocks below show at what time you began shopping in each aisle at the supermarket. Use the clocks to answer the questions.



Produce Aisle
[]



Dried Goods Aisle
[]



Refrigerated Aisle
[]



Checkout
[]

- Write the time shown on each clock in the space underneath.
- You arrive at the checkout at 12:00. Use the line tool  to draw hands on the clock showing this time.
- It takes you a half hour to get home with all the groceries after you check out. What time do you arrive home?
[]
- Write each time shown on the analog clocks above on the digital clocks below.



Dried Goods Aisle



Refrigerated Aisle



Checkout

CHALLENGE #3: CHECKING OUT

5. You bought a total of 25 items. You want to place your items into your shopping bags. Each bag must have more than 6 items but less than 12 items. There cannot be the same number of items in any two bags. How many items will you place in each bag? Draw dots to help you solve. Fill in the spaces under the bags with the number of items in each.



[]
_____ items



[]
_____ items



[]
_____ items

6. When you get home, your mom tells you to put 12 of the items in the fridge. You want to arrange the items in three rows with the same number of items in each. Draw dots to create a diagram to show how you might arrange the items in the fridge.

Row 1 []

Row 2 []

Row 3 []



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 -	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.

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