

MATH BUNDLE #2

Project Based Learning

1st Grade
Print & Digital

BUILD A ZOO

Project Based Learning

1st Grade
Print & Digital

BUILDING THE EXHIBITS



FEEDING TIME

The table below shows how much food one of each type of animal is fed in one hour to answer the questions.

ANIMAL	100g	200g	300g	400g
FEED CONSUMERS PER MEAL	80g	160g	240g	320g

1. How much more does a gorilla eat in one meal than a zebra?

2. The lion ate 3 meals over a day. How much food does one lion have to eat in a day to eat 3 meals?

3. How much does one flamingo eat in one meal?

Measure Twice, Cut Once

Project Based Learning

QUILTING

1st Grade Math
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FINDING LINES OF SYMMETRY

- Quilters use lines of symmetry to help them create patterns for their quilts. Follow the directions as you explore lines of symmetry.
1. How many lines of symmetry do these shapes have? Draw the lines and write the number under the shape.
 2. Imagine these shapes have a paper covering the bottom half of the line of symmetry. Draw the part that is under the paper.

ICE CREAM TRUCK MANIA

Math Project Based Learning

1st Grade
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ICE CREAM SUPPLY

The ice cream truck owner has a supply of ice cream cones. The table below shows how many of each ice cream cone you have. Use the information in the table to answer the questions.

Ice Cream Cone	Vanilla	Chocolate	Strawberry	Orange
Vanilla	10	15	20	25
Chocolate	15	20	25	30
Strawberry	20	25	30	35
Orange	25	30	35	40

1. You received an additional shipment of 10 blue raspberry poppers. How many blue raspberry poppers do you have now?

2. How many chocolate cones can you sell? Write your answer in the space below.

3. How many cones can you sell if you have 100 cones?

4. How many cones can you sell if you have 100 cones?



BUILD A ZOO

Project Based Learning

1st Grade
Print & Digital

FEEDING TIME

The table below shows how much food one of each type of animal is fed in one meal. Use the data on the table to answer the questions.

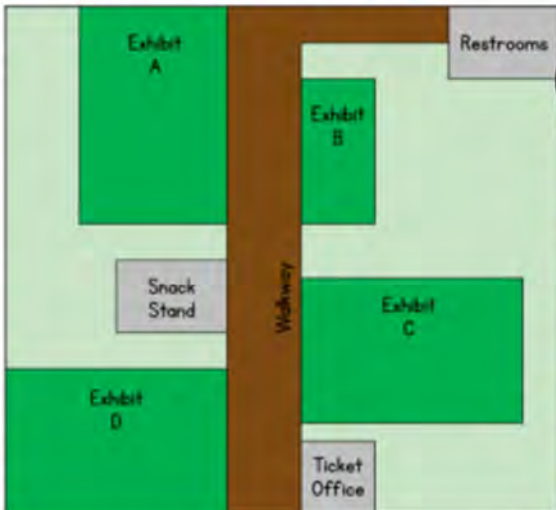
ANIMAL	Zebra	Giraffe	Lion	Flamingo	Gorilla	Crocodile
FOOD CONSUMED PER MEAL	8 lbs.	10 lbs.	3 lbs.	1 lb.	20 lbs.	2 lbs.

- How much more does a gorilla eat in one meal than a zebra?
- The lions are fed 3 meals every day. How much food does one lion eat in a day? Use the shape tool  to draw a diagram to show your thinking.
- How much do one flamingo and one crocodile eat in one meal in total?

BUILDING THE EXHIBITS

Now that you've chosen your 4 animals, you must assign them to their exhibits. Decide which animal should live in each exhibit. Consider how large each animal is, how many of each animal you anticipate placing in each exhibit, and how much space they need to live comfortably. Write the name of each animal in the space in their exhibit.

Tape Measure



Standards Addressed

- 1.OA.A.1 Use addition and subtraction within 20 to solve word problems.
- 1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20.
- 1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.
- 1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits with the symbols $>$, $=$, and $<$.
- 1.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.
- 1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number.
- 1.MD.A.1 Order three objects by length.
- 1.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.

Realistic Scenarios

FEEDING TIME

The table below shows how much food one of each type of animal is fed in one meal. Use the data on the table to answer the questions.

ANIMAL	Zebra	Giraffe	Lion	Flamingo	Gorilla	Crocodile
FOOD CONSUMED PER MEAL	8 lbs.	10 lbs.	3 lbs.	1 lb.	20 lbs.	2 lbs.

1. How much more does a gorilla eat in one meal than a zebra?

2. The lions are fed 3 meals every day. How much food does one lion eat in a day? Use the shape tool  to draw a diagram to show your thinking.

3. How much do one flamingo and one crocodile eat in one meal in total?



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Aligned to CCSS Math Standards



CHALLENGE #1: REPTILE HOUSE



Your zookeepers take excellent care of the snakes in the reptile house by measuring them to make sure they are a healthy size. Compare the lengths of the snakes below. Drag the correct symbol $<$, $>$, or $=$ from the bottom of the slide into the blank.

5.

Olive Python
89 inches



Black Mamba
96 inches

6.

Northern
Copperhead
26 inches



Pigmy
Rattlesnake
27 inches

7.

Tiger Snake
42 inches



Eastern
Kingsnake
38 inches

8.

Anaconda
94 inches



Reticulated
Python
94 inches

9.

Milk Snake
72 inches



Gaboon Viper
75 inches

10.

Papua Python
83 inches



Boa
Constrictor
80 inches



SAMSUNG

Measure Twice, Cut Once

Project Based Learning

QUILTING

1st Grade Math
Print & Digital

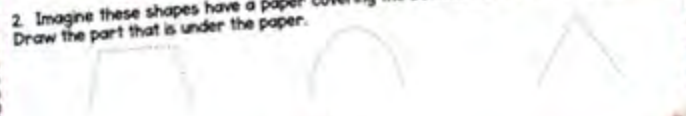
FINDING LINES OF SYMMETRY

Quilters use lines of symmetry to help them create patterns for their quilts. Follow the directions as you explore lines of symmetry.

1. How many lines of symmetry do these shapes have? Draw the lines and write the number under the shape.



2. Imagine these shapes have a paper covering the bottom half at the line of symmetry. Draw the part that is under the paper.



CUTTING TRIANGLES

Grandmother drew the picture below to help you understand how you will cut your paper squares when you make your own pattern.



Use different color pieces of construction paper that have been cut into squares. Draw two cutting lines on each square that go diagonally from corner to corner like Grandmother's picture. Carefully, cut each square along your cutting lines.

Use the triangles and quarters to complete the sentences.

_____ are into

_____ with my first cut.

_____ are into

_____ with my last cut.

_____ into quarters, how many pieces do you get?

Standards Addressed

- I.OA.A.1 Use + and - within 20 to solve word problems
- I.OA.A.2 Solve, word problems that call for + of 3 whole numbers whose sum is less than or equal to 20.
- I.OA.C.6 Use + and - within 20, demonstrating fluency with 10. Use strategies for addition and subtraction.
- I.MD.A.1 Order three objects by length, compare lengths or two objects indirectly by using a third object.
- I.MD.A.2 Express length of object as whole number of length units by laying multiple copies of shorter object end to end.
- I.MD.C.4 Organize, represent, and interpret data with up to 3 categories; ask and answer questions about the data points, how many?, and how many more or less? are in one category than in another.
- I.GA.1 Distinguish between defining attributes vs non-defining attributes;
- I.GA.2. Compose 2-D shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or 3-D shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape and compose new shapes from the composite shape.
- IGA.3 Partition circles and rectangles into 2 and 4 equal shares, describe the shares using words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares

Print & Digital Versions



MEASURE TWICE, CUT ONCE

Your grandmother is a master quilter. She wants to teach you about the history and art of quilt making. Follow the directions in this packet and you will learn about quilt making as you practice many fun math skills, like geometry and measurement. When you are done, you will be ready to make your own quilt.

HERE ARE YOUR TASKS:

- Read through the entire packet before beginning.
- Read the informational slide about quilt making.
- Follow directions to create a pattern for your quilt.
- Measure, cut and compare lengths of fabric.
- Classify and sort shapes by attribute.
- Complete and extend patterns.
- Identify and draw lines of symmetry.
- Prepare and design your pattern.
- Solve quilting word problems.



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- Classify and sort shapes by attribute.
- Complete and extend patterns.
- Identify and draw lines of symmetry.
- Prepare and design your pattern.
- Solve quilting word problems.
- Create a line plot and a bar graph based on data.
- (Optional) Complete the challenge pages.
- Complete the self-reflection and evaluation rubric.



graph based on data
inge pages.
nd evaluation rubric.



Interactive Movable Pieces

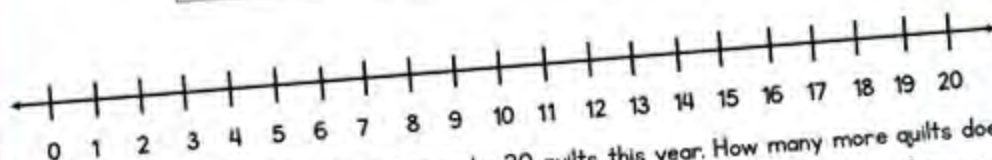


CHALLENGE 2-GRANDMOTHER'S FAVORITE PATTERNS

Grandmother uses different patterns for her quilts. The table shows how many quilts she made with her three favorite patterns. Drag an X above the numbers on the number line to show how many quilts Grandmother made for each pattern.

Drag me

Grandmother's three favorite quilt patterns.		
Log Cabin	Pop Dots	Triple Triangle
7	10	12



1. Grandmother set a goal for herself to make 30 quilts this year. How many more quilts does she need to make to reach her goal? Use the shape tool  to draw a model to show your thinking.

2. How many more *Triple Triangle* quilts than *Log Cabin* quilts did grandmother make? Use the shape tool  to show the difference with a model.

Explores Measurement & Data



MEASURING FABRIC

The table shows the number of pieces of each fabric you need to make your quilt. Calculate the total number of inches you need for each fabric.

	Green Solid Fabric	Blue Solid Fabric	Blue Print Fabric	Green Print Fabric
Length in inches	6 inches	12 inches	9 inches	10 inches
Number of pieces	3	1	2	2
Total number of inches				

- Which two fabrics have the same total number of inches?
- Name the fabric with the largest total of inches. How many inches is it?

is in order from shortest to longest.



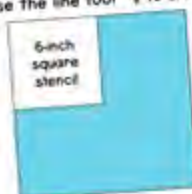
MEASURING AND CUTTING YOUR SQUARES

You know that each piece of fabric is 12 inches wide and are different lengths. Let's find out how many 6-inch squares you will get from each piece of solid fabric. Grandmother made a 6-inch stencil for you to trace on each piece of fabric.

- Estimate how many 6-inch squares you can cut from each fabric.

I estimate 6-inch green squares and 6-inch blue squares.

- Grandmother placed one stencil on each piece of fabric to use as a guide. Drag the ruler to measure where you will cut the fabric. Use the line tool  to show all your cuts.



- How many squares of each color will you get from one piece of fabric?

Green squares =

Blue squares =



ICE CREAM TRUCK MANIA

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HUNGRY CUSTOMERS

The pictograph below shows how many people purchased ice cream from the truck at each stop today. Use the pictograph to answer the questions.

NUMBER OF CUSTOMERS PER STOP



 = 1 customer

- How many customers purchased ice cream at the James Avenue stop?
- How many more people purchased ice cream at Poplar Drive than Highland Street?
- There were 3 more customers at the Fieldstone Lane stop than at the Oak Circle stop. How many people bought ice cream at Fieldstone Lane?
- How many customers bought ice cream from all the stops listed on the pictograph together?

ICE CREAM SUPPLY

You receive an order from your ice cream supplier to stock your truck. The table below shows how many of each ice cream type you have. Use the information in the table to answer the questions.

Ice cream type					
Number in truck	25	30	36	40	60

- You receive an additional shipment of 18 blue raspberry popsicles. How many blue raspberry popsicles do you have now?
- How many chocolate sprinkle cones and soft serve swirl cones do you have in all?
- You sell 20 pistachio cones. How many pistachio cones do you have left? Use the shape tool  to draw a diagram to show your thinking.
- Your freezer breaks, and 30 Patriotic Pops melt. You throw away the melted pops. How many Patriotic Pops do you have left?



Standards Addressed:

- I.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20.
- I.OA.B.4 Understand subtraction as an unknown-addend problem.
- I.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.
- I.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones.
- 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.6 Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90.
- 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.
- I.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.

Print & Digital Versions



ICE CREAM SUPPLY

First, determine how many of each ice cream you have in the freezer of your truck. Each frozen treat is shown as a counting on problem. Find the sum. This will tell you how many of each ice cream you have.

1

5 +



=

2

2 +



=

3

8 +



=

4

4 +



=

5

12 +



=

ICE CREAM SUPPLY

First, determine how many of each ice cream you have in the freezer of your truck. Each frozen treat is shown as a counting on problem. Find the sum. This will tell you how many of each ice cream you have.

1

5 +



=

2

2 +



=

3

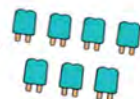
8 +



=

4

4 +



=

5

12 +



=

6

15 +



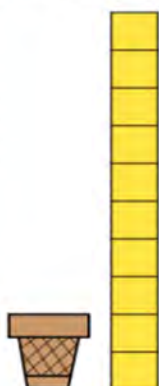
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Interactive Movable Pieces

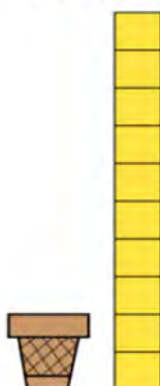


CHALLENGE #1: ICE CREAM SIZES

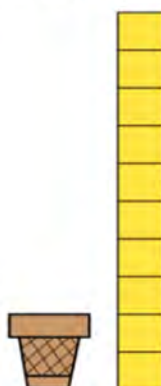
Five customers order ice cream cones from the truck. However, instead of ordering them as usual, they ask you to make ice cream cones that are a certain height! Drag any number and flavor of scoops on top of each cone. Use the base 10 blocks to ensure that each cone is the correct height.



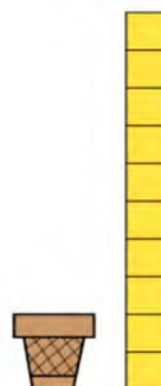
Juliana wants an ice cream that is 5 base 10 blocks tall.



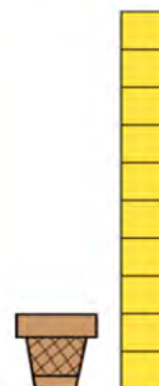
Tyrone wants an ice cream that is 7 base 10 blocks tall.



Miranda wants an ice cream that is 4 base 10 blocks tall.



Juan wants an ice cream that is 9 base 10 blocks tall.



Peyton wants an ice cream that is 6 base 10 blocks tall.

Drag me



Strawberry



Mint



Chocolate



Blue Raspberry



Lemon



Blackberry



Vanilla



Pumpkin Pie

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Student Self-Assessment

SELF EVALUATION

Circle 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 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...	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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