math mark

math activities that reach kids

GRADE 3
Ready, Prep, Go!

lead4ward®

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Ready, Prep, Go!

Supporting **STAAR** Fun ness in Grade 3

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READINESS

READINESS STANDARDS

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(3.2) **Number and operations.** The student applies mathematical process standards to represent and compare whole numbers and understand relationships related to place value. The student is expected to:		
3.2A	compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate.	8
3.2D	compare and order whole numbers up to 100,000 and represent comparisons using the symbols >, <, or =.	8
(3.3) **Number and operations.** The student applies mathematical process standards to represent and explain fractional unites. The student is expected to:		
3.3F	represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines.	90
3.3H	compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models.	90
(3.4) **Number and operations.** The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:		
3.4A	solve with fluency one-step and two-step problems involving addition and subtraction within 1,00 using strategies based on place value, properties of operations, and the relationship between addition and subtraction.	8, 13, 18
3.4K	solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial modes, including arrays, area models, and equal groups; properties of operations; and recall of facts.	23, 38
(3.5) **Algebraic reasoning.** The student applies mathematical process standards to analyze and create patterns and relationships. The student is expected to:		
3.5A	represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations.	13, 18, 55, 68
3.5B	represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations.	23, 38, 68
3.5E	represent real-world relationships using number pairs in a table and verbal descriptions.	112
(3.6) **Geometry and measurement.** The student applies mathematical process standards to analyze attributes of two-dimensional geometric figures to develop generalizations about their properties. The student is expected to:		
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3.6C	determine the area of rectangles wit whole number side lengths in problems using multiplication related to the number of rows times the number of unit square in each row.	99
(3.7) **Geometry and measurement.** The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement. The student is expected to:		
3.7B	determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems.	99
(3.8) **Data analysis.** The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:		
3.8A	summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals.	104

TABLE OF STANDARDS (PG. 2 OF 3)

SUPPORTING

SUPPORTING STANDARDS

	Standard	Page
(3.2) **Number and operations.** The student applies mathematical process standards to represent and compare whole numbers and understand relationships related to place value. The student is expected to:		
3.2C	represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers.	8
(3.3) **Number and operations.** The student applies mathematical process standards to represent and explain fractional unites. The student is expected to:		
3.3A	represent fractions greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 using concrete objects and pictorial models, including strip diagrams and number lines.	83
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3.3C	explain that the unit fraction $\frac{1}{b}$ represents the quantity formed by one whole that has been partitioned into b equal parts where b is a non-zero whole number.	83
3.3D	compose and decompose a fraction $\frac{a}{b}$ with a numerator greater than zero and less than or equal to b as a sum of parts $\frac{1}{b}$.	83
(3.4) **Number and operations.** The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:		
3.4B	round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems.	13, 18
3.4D	determine the total number of objects when equally sized groups of objects are combined or arranged in arrays up to 10 by 10.	68
3.4E	represent multiplication facts by using a variety of approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip counting.	23, 38
3.4F	recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts.	23, 38
3.4G	use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties.	38, 55
3.4H	determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally.	23, 38
3.4J	determine a quotient using the relationship between multiplication and division.	23, 38
(3.6) **Geometry and measurement.** The student applies mathematical process standards to analyze attributes of two-dimensional geometric figures to develop generalizations about their properties. The student is expected to:		
3.6B	use attributes to recognize rhombuses, parallelograms, trapezoids, rectangles, and squares as examples of quadrilaterals and draw examples of quadrilaterals that do not belong to any of these subcategories.	93
3.6D	decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area.	99

SUPPORTING STANDARDS

HEY—READ THIS!

What's in this book?

The activities in this book address every Readiness Standard in 3rd grade, as well as most of the Supporting Standards which make the Readiness Standards work.

We've mixed the standards up (just like STAAR does) so that your students get practice in reading a problem, discerning what the problem is asking them to do, and figuring out how to solve it.

How do you use the activities?

Here are some ideas.

- Use them for STAAR prep instead of using only multiple choice problems.
- Let your students work in small groups on one of these activities while you tutor using a different mathmark activity.
- The great thing is that the story problems are written on a 3rd-grade reading level. Not only are your students practicing math, but they are also making inferences, one of the ELAR skills that many students have trouble with. Work with your ELAR or ESL partner teacher to share the reading load.
- Use these activities as a spiral review. Be sure that all of the skills on the page have been taught prior to using the activity. You can see which skills are included in each activity by reading the Topics on the Teacher Notes pages or by checking the Table of Standards on PG. 4–6.

Topics: Composing & Decomposing Large Whole Numbers

- Use the funny and interesting activities in this book to inject some fun into summer school learning, and teaching.
- Pair these activities with the STAAR released problems that assess the same skills.
- Use these activities as evidence that students can solve problems at the level expected by the end of the year.

MR. RADAR'S ROBOT WAREHOUSE

TEKS RS: 3.2A, 3.2D, 3.4A
SS: 3.2C

Topics: Composing & Decomposing Large Whole Numbers; Comparison; Addition & Subtraction

WHAT IT'S ALL ABOUT!

In this short project, students help the character Mr. Radar build his new toy robot warehouse. They divide the warehouse into sections and then answer a series of questions. When they are finished journaling, students can color and decorate their toy warehouse.

IT'S A SETUP!

- ☐ Copy **Mr. Radar's Robot Warehouse** (PG. 11) for each pair of students.
- ☐ Copy **Mr. Radar's Robot Warehouse Analysis** (PG. 12) for each student.
- ☐ Copy 1 piece of **cm grid paper** for each student (PG. 119).
- ☐ Other Materials:
  - □ **1" color tiles (red, green, and blue)**: approximately 15–20 of each color for every pair of students
  - □ **Crayons** or **colored pencils (red, green, and blue)**
  - □ **Scissors**

Place students in pairs and hand out materials. Students use the **color tiles** to represent the toys according to the quantities given in the problem. Then they create a rectangular warehouse on **grid paper** and label their creation. Finally, they answer the questions.

HEY—LOOK HERE!

No color tiles? Students can create the warehouse directly on the **grid paper**. They may want to sketch it out to be sure they are correct before coloring it. If they create the warehouse directly on grid paper, you'll need more than 1 sheet per student.

The warehouses will vary. The goal is that students represent the numbers accurately. It is fine if they are unable to figure out how to make a rectangle with the numbers. The sample drawing is provided as a reference.

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MR. RADAR'S ROBOT WAREHOUSE ANALYSIS

ANSWER KEY

Directions: Answer the following questions.

1 Are there more Armor Robots or Jeans Robots? How many more?

138 more Jeans Robots

Write the numbers of Armor and Jeans Robots using >, <, or =.

786 > 648 or 648 < 786

2 Make a list of the robots in order from greatest to least.

Green Jeans Robots

Green Armor Robots

Red Armor Robots

Red Jeans Robots

Blue Armor Robots

Blue Jeans Robots

3 Make a list of the robots in order from least to greatest.

Blue Jeans Robots

Blue Armor Robots

Red Jeans Robots

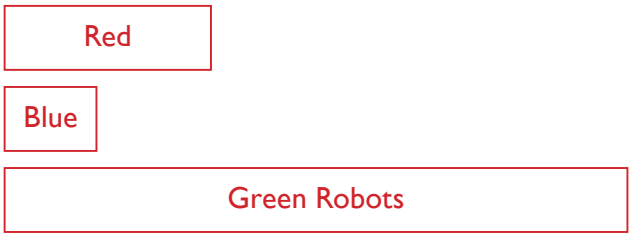
Red Armor Robots

Green Armor Robots

Green Jeans Robots

4 Draw a diagram that compares the numbers of red, green, and blue robots.

Diagrams will vary.



Write the comparison of blue robots and green robots using >.

999 > 143

5 If Mr. Radar sold all of the blue Armor Robots, how many blue robots would be in the warehouse?

Solution: 46 robots

6 There are 1,434 robots in the warehouse. Write this number in expanded notation.

(1 × 1,000) + (4 × 100) + (3 × 10) + (4 × 1)

Place a point on the number line to show about how many blue Jeans Robots there are.

ANSWER KEY

Sample Drawing. Drawings will vary.

MR. RADAR'S ROBOT WAREHOUSE

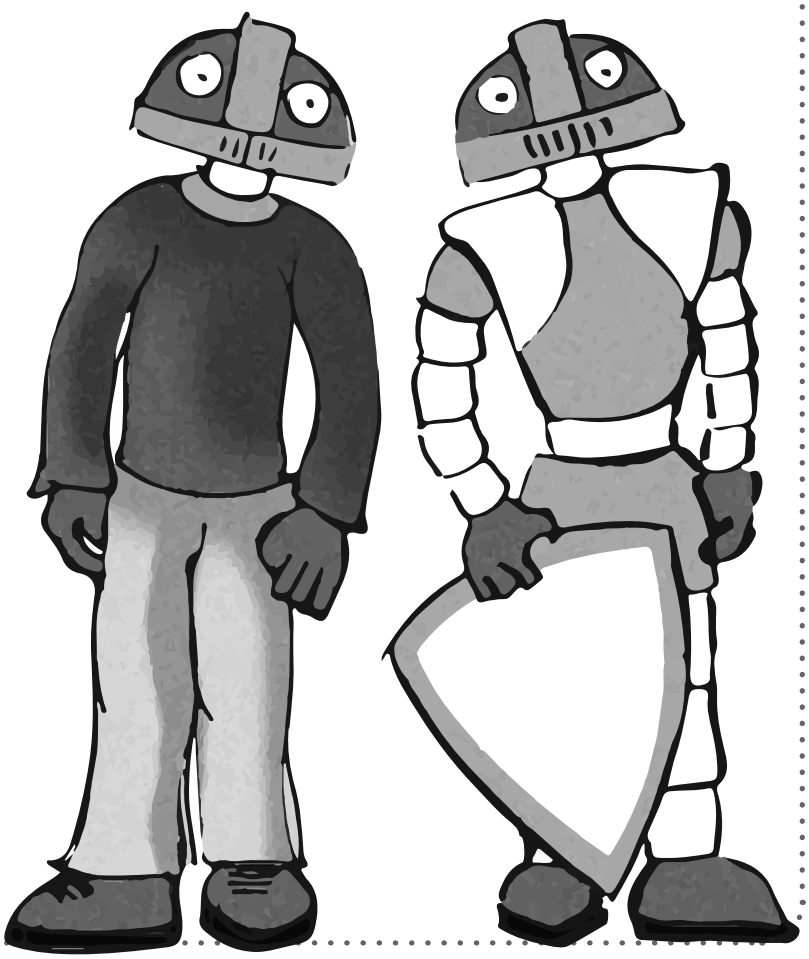
Directions: Mr. Radar, the toy-robot maker, is building a new warehouse for his top-selling items. He needs your help figuring out how to set up the warehouse so that the robots are organized.

Here are the rules for creating the warehouse:

- Divide the warehouse into sections. Each section will hold one type of robot.
- Use the numbers of robots to help you decide how large to make each section.
- Make a model of the warehouse first to decide how large to make each section.
- Draw and color the warehouse on grid paper.
- Label your drawing.

Each section in the warehouse will hold one type of robot:

- ☐ 150 Red Armor Robots
- ☐ 97 Blue Armor Robots
- ☐ 401 Green Armor Robots
- ☐ 142 Red Jeans Robots
- ☐ 46 Blue Jeans Robots
- ☐ 598 Green Jeans Robots



MR. RADAR'S ROBOT WAREHOUSE ANALYSIS

Name: _____

Directions: Answer the following questions.

1 Are there more Armor Robots or Jeans Robots? How many more?

Write the numbers of Armor and Jeans Robots using >, <, or =.

_____

2 Make a list of the robots in order from greatest to least.

_____

_____

_____

_____

_____

_____

3 Make a list of the robots in order from least to greatest.

_____

_____

_____

_____

_____

_____

4 Draw a diagram that compares the numbers of red, green, and blue robots.

Write the comparison of blue robots and green robots using >.

_____

5 If Mr. Radar sold all of the blue Armor Robots, how many blue robots would be in the warehouse?

Solution: _____

6 There are 1,434 robots in the warehouse. Write this number in expanded notation.

Place a point on the number line to show about how many blue Jeans Robots there are.

ONE WEEK FOR FRANKIE THE FEEDER

TEKS RS: 3.4A, 3.5A SS: 3.4B

Topics: One- & Two-Step Addition & Subtraction with Estimation, Rounding, & Multiple Representations

WHAT IT'S ALL ABOUT!

This activity uses the daily work of Frankie, the man who orders food for the local zoo, as its context. Students will work together to solve the problem. One student will either draw a pictorial model or mark on a number line, one will write an equation, and one will solve the problem. So each student will work on one part of each problem. They will also work in their groups to either estimate or round their answer, depending on the problem. The problems have either one or two steps.

HEY—LOOK HERE!

Problem #7 is a challenge for each student individually. It uses numbers larger than are called for in 3rd grade, but students do NOT have to solve it. Instead, they should write on this activity (or in their math journals) about how they WOULD solve it.

ANSWER KEY

1. 268 pounds
2. 72 pounds
3. 81 pounds
4. 432 pounds
5. 700 pounds
6. 725 pounds

IT'S A SETUP!

☐ Copy **One Week for Frankie the Feeder** (PGS. 14–17) for each student.

1. Place students in groups of 3 and have them number off. Student #1 starts with Problem #1. Student #2 starts with Problem #2. Student #3 starts with Problem #3.
2. Each student reads the problem, draws a pictorial model or marks a number line, and initials the box. Then they pass their papers clockwise.
3. Next each student reads the problem and checks the pictorial model/number line. Then they write the equation and initial the equation box. Students pass their papers again.
4. Next each student reads the problem and then checks the pictorial model/number line, as well as the equation. Finally, they will either a) estimate and then solve the problem or b) solve the problem and round to the given place, and initial the solution box. For a group of 3 students, all parts of Problems #1–#3 will be complete after this round.
5. Then students work the next set of problems in the same way.
6. Students should complete the final problem on their own, either on the recording sheet or in their math journals.

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ONE WEEK FOR FRANKIE THE FEEDER

Name: _____

Directions: Count off. Student #1 starts with Problem #1. Student #2 starts with Problem #2. Student #3 starts with Problem #3.

- Round 1: Read the problem. Draw a picture, a number line, or strip diagram and initial the drawing box. Pass your paper.
- Round 2: Read the problem and check the picture, number line, or strip diagram. Write an equation and initial the equation box.
- Round 3: Read the problem and check the equation. Next, either estimate before you solve the problem, or solve the problem and round your answer to the given place value. Initial the solution box.

At the end of Round 3, each of you should have drawn 1 strip diagram, written 1 equation, and solved 1 problem. Work the rest of the problems in rounds.

Hint: You may have to use information from one problem to solve another.

1 Frankie orders all the food for the local zoo. On Monday he ordered 20 pounds of fish food, 48 pounds of lizard food, and 200 pounds of lion food. How many pounds of food did Frankie order on Monday?

DRAW A STRIP DIAGRAM.

Initials _____

WRITE AN EQUATION.

Initials _____

SOLVE THE PROBLEM (ROUNDED TO THE NEAREST 10).

Initials _____

Name: _____

2 On Tuesday, a delivery truck came to the zoo with 612 pounds of monkey food. But that was too much! Frankie only wanted 540 pounds of food. He decided to send the rest back to the store. How many pounds of food did Frankie send back?

DRAW A NUMBER LINE.

Initials _____

WRITE AN EQUATION.

Initials _____

ESTIMATE, THEN SOLVE THE PROBLEM.

Initials _____

3 By Wednesday, Frankie only had 7 pounds of parrot food left. There was good news and bad news. The good news was that a new truck came with 96 more pounds of parrot food. The bad news was that it got left outside in the rain! Frankie had to throw away 22 pounds of it. How many pounds of parrot food did Frankie have after that?

DRAW A PICTORIAL MODEL.

Initials _____

WRITE AN EQUATION.

Initials _____

ESTIMATE, THEN SOLVE THE PROBLEM.

Initials _____

Name: _____

4 On Thursday, the alligator food arrived. There were 360 pounds of it, because alligators eat a lot! Frankie added it to the 72 pounds of alligator food that the zoo still had. How many pounds of alligator food did the zoo have at the end of Thursday?

DRAW A NUMBER LINE.

Initials _____

WRITE AN EQUATION.

Initials _____

SOLVE THE PROBLEM (ROUNDED TO THE NEAREST 100).

Initials _____

5 On Friday, a truck came with 1,000 pounds of animal food, but some of it was for the zoo next door. Frankie took 241 pounds of food for the bear cubs and 59 more for the pythons. How many pounds of food were left on the truck?

DRAW A NUMBER LINE.

Initials _____

WRITE AN EQUATION.

Initials _____

ESTIMATE, THEN SOLVE THE PROBLEM.

Initials _____

Name: _____

6 Before Frankie could go home on Friday, he had to place an order for next week. He needed 507 pounds of elephant food, 206 pounds of food for the tiger, and 12 pounds of acorns to feed the squirrels that came by. How many pounds of food did Frankie order Friday night?

DRAW A PICTORIAL MODEL.

Initials _____

WRITE AN EQUATION.

Initials _____

SOLVE THE PROBLEM (ROUNDED TO THE NEAREST 10).

Initials _____

7 Journal

Directions: You do not actually have to solve this problem. Instead, explain how you would go about solving it. Include (a) and (b) in your answer.

Back on Frankie's first day at the zoo, everything was a mess! He had to order 2,112 pounds of lion food; 3,729 pounds of bird food; 98 pounds of fish food; 6,887 pounds of alligator food; and 22,006 pounds of other kinds of food for all the different animals. But the food only came in 100-pound bags. How many pounds of food did he need to buy?

(a) What numbers do you need to round?

(b) What digit do you need to round to?

SUPERMOMO'S BURGER BIN!

TEKS RS: 3.4A, 3.5A SS: 3.4B

Topics: One- & Two-Step Addition & Subtraction

WHAT IT'S ALL ABOUT!

This activity is designed to reinforce fluency in addition and subtraction using multiple methods. Students will create and analyze a variety of pictorial models, including number lines. They will also build equations, assess and correct errors, round, and estimate.

ANSWER KEY

Note: Estimates, equations, and pictures will vary.

1. 126 burgers
2. 105 burgers
3. 280 + 110 + 20 = 410; Rounded solution: 400
4. 800 – (390 + 260) = 150; Rounded solution: 200 pounds
5. Mistake: only subtracted one group of tomatoes
   Equation: 735 – 46 – 46 = 643
   Solution: 643 tomatoes left
6. Mistake: Subtracted 89 instead of adding it
   Equation: 214 + 89 + 89
   Solution: 392 burgers
7. Mistake: Arithmetic error
   Equation: 548 – 451 = 97
   Solution: 97 orders of fries
8. Mistake: Added instead of subtracting
   Equation: 812 – 390 = 422
   Solution: $422

IT'S A SETUP!

- ☐ Copy **SuperMomo's Burger Bin!** (PGS. 19–22) for each group of 2–3 students.
- ☐ Other Materials:
  - □ **Scratch paper** for each student.
  - □ **Colored pencils** for each group.

Place students in groups of 2–3 to solve the problems.

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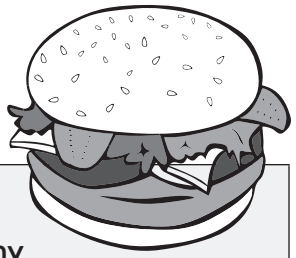
SUPERMOMO'S BURGER BIN! (PG. 1 OF 4)

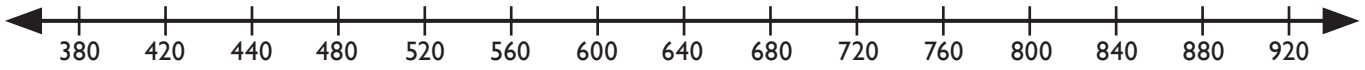
Name: _____



Directions: For Problems #1 and #2, estimate the answer, then use the number line to solve the problem. Write your answer on the line provided.

1 On top of Big Hill, SuperMomo makes the best burgers around. Last week he sold 603 burgers. 477 of the burgers had tomatoes. How many of the burgers did NOT have tomatoes?

Estimate: _____



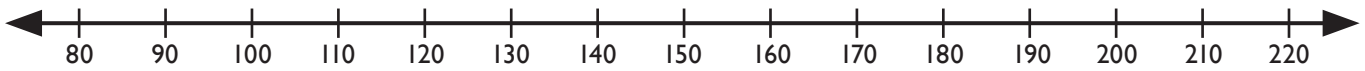
Solution: _____

2 For the Momo Tuesday Special, SuperMomo made a special sauce for his burgers. He sold 150 burgers that Tuesday.

- 10 of those burgers had a little bit of sauce.
- 35 of them had no sauce at all.

How many burgers had the normal amount of sauce?

Estimate: _____



Solution: _____

 Name: _____

Directions: For Problems #3 and #4, draw a model to solve the problem. Then round your answer to the nearest 100.

3 SuperMomo made burgers for the Big Hill Mega Music Dance Party. He made all the burgers the morning before the party.

- During the party, from 5:00–7:00 PM, he sold 280 burgers.
- He sold 110 more burgers after 7:00.
- At the end of the party, SuperMomo had 20 burgers left over. So he tore them up into pieces and he fed them to the birds.

How many burgers did SuperMomo make that morning?

Estimate: _____

Draw a model to solve the problem.

Solution: _____ **Solution Rounded to 100**: _____

4 SuperMomo gets up very early to bake bread for his secret burger buns, which are yellow and sweeter than cake.

- In his first year of baking, he used 800 pounds of flour to make all his buns.
- Last year, he used 260 pounds of flour.
- This year, he will use 390 pounds.

How many more pounds of flour did SuperMomo use in his first year of baking than in this year and last year combined?

Estimate: _____

Draw a model to solve the problem.

Solution: _____ **Solution Rounded to 100**: _____

 Name: _____

Directions: Problems #5–#8 tell a story about a bad day for SuperMomo. These problems are already solved. But all the solutions are WRONG! Your job is to figure out what is wrong, fix it, and find the correct solution.

5 SuperMomo's little brother CandyMomo needed a job, so he came to work at the Burger Bin. CandyMomo was nervous. He had never had a job before. He was so nervous that he threw away 46 fresh, new tomatoes along with 46 old, rotten tomatoes! There were 735 tomatoes in all before CandyMomo started. How many tomatoes were left?

Problem Worked Wrong!	**Mistake & Correct Solution**
Equation: 735 – 46 = 689 735 – 46 689 **Solution**: 689 tomatoes left	**Mistake:** **Equation:** **Solution**: _____

6 CandyMomo wanted to make up for his mistake, so he decided to make the special sauce for the Momo Tuesday Special. He would use his favorite ingredient: chocolate. But the chocolate made the sauce taste gross! SuperMomo had to throw away all the burgers with CandyMomo's chocolate sauce and make fresh new burgers for everyone for free.

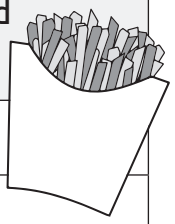
- SuperMomo had already made 214 burgers with the correct sauce.
- He threw away 89 burgers with the gross chocolate sauce.
- He made 89 with the correct special sauce.

How many burgers did SuperMomo make in all?

Problem Worked Wrong!	**Mistake & Correct Solution**
Equation: 214 – 89 + 89 = 113 214 – 89 = 125 214 + 89 = 214 **Solution**: 214 burgers	**Mistake:** **Equation:** **Solution**: _____

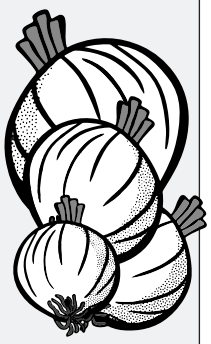
 Name: _____

7 CandyMomo was sad. He had messed up twice in a day. While he was taking orders from new customers, he was so sad that he forgot to write down who ordered fries! CandyMomo didn't know what to do. So he gave fries to everyone, whether they paid for them or not. He made so many fries that he used all the potatoes that SuperMomo had in storage. All in all, CandyMomo made 548 orders of fries, but he only sold 451 orders. How many orders of fries did CandyMomo give away for free?



Problem Worked Wrong!	Mistake & Correct Solution
Equation: 548 – 451 = 103 548 – 451 117 **Solution**: 117 orders	**Mistake:** **Equation:** **Solution**: _____

8 SuperMomo was tired of having to fix all of his brother's mistakes. He sent CandyMomo outside so that he could finish his day of work in peace. While CandyMomo was outside, he found a little pile of onions sitting by the back door. Since he didn't have anything else to do, CandyMomo began to juggle the onions. First 2 onions, then 3, then 5! A crowd started to form, and everyone was cheering "CandyMomo, the Onion Boy!" They left him tips because he was so much fun to watch. In CandyMomo's first hour of juggling, he made $390. In his second hour, he made $812. How much more did CandyMomo make during his second hour than his first?



Problem Worked Wrong!	Mistake & Correct Solution
Equation: 390 + 812 = 1202 390 + 812 1202 **Solution**: $1,202	**Mistake:** **Equation:** **Solution**: _____

THE FLYING, HOPPING, JUMPING RACE!

TEKS RS: 3.4K, 3.5B
SS: 3.4E, 3.4F, 3.4H, 3.4J

Topics: Multiplication & Division Basic Facts & Models

WHAT IT'S ALL ABOUT!

This activity uses strip diagrams, pictorial models, and other strategies to solve problems relating to a frog race. Students will read each part of the story, draw a picture or model, and then solve.

IT'S A SETUP!

- ☐ Copy **The Flying, Hopping, Jumping Race** (PGS. 31–37) for each student.
- ☐ Other Materials:
  - □ **Square tiles**: approximately 30 per student
  - □ **Crayons** or **colored pencils**

Place students in groups of 2–3 to draw the models and solve the problems.

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THE FLYING, HOPPING, JUMPING RACE!

ANSWER KEY

Directions: For each problem, draw a picture and then solve.

1 Spanky Hopper and Freddy Flyer are preparing for their jumping race. They do it every year. Frogs do things like that.

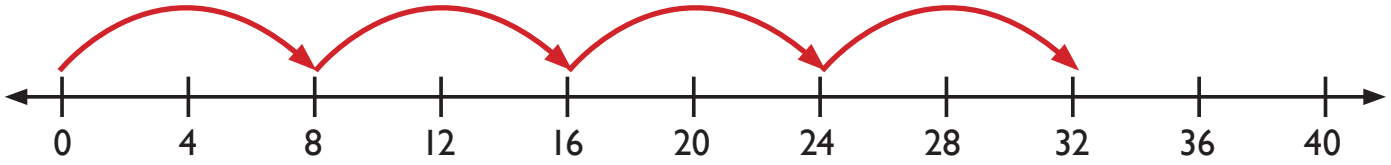
Each year they start at the **Lily Pad**. Then they race to the **Ugly Tree**, to the **Flat Rock**, to the **Prickle Bush**, and finally to the **Finish Line**.

Each part of the jumping race is 8 feet. How long is the whole race?

Draw a picture of the race. Label your picture. (Keep this picture handy. You are going to use it for every problem!)

Pictures will vary.

Use the number line to solve the problem.



Solve the problem using skip counting. Show how you skip counted here.

8 16 24 32

The equations below are the fact families that can be used to solve the problem. Circle the answer to the problem in each equation.

$4 \times 8 = (32)$ $8 \times 4 = (32)$ $(32) \div 4 = 8$ $(32) \div 8 = 4$

ANSWER KEY

2 Freddie takes 4 jumps to get from the **Lily Pad** to the **Ugly Tree**. How long are Freddie's jumps? (Use the information from Problem #1 to find the distance the **Lily Pad** to the **Ugly Tree**.)

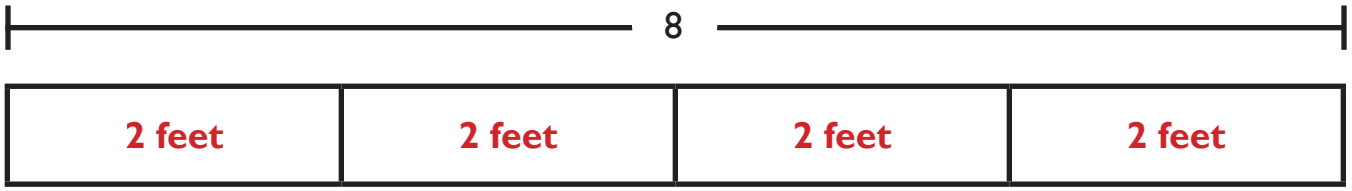
Draw a picture of the race. Label your picture. (Keep this picture handy. You are going to use it for every problem!)

Pictures will vary.

Write an equation to solve the problem.

$$8 \div 4 = 2$$

Label the diagram to show the number of feet in Freddie's jumps.



Which answer is correct? Circle the correct answer.

A. 4, because $8 \div 2 = 4$

B. 2, because $8 - 6 = 2$

C. 4, because $4 \times 2 = 8$

D. 2, because $8 \div 4 = 2$

ANSWER KEY

3 This year, they added a challenge on the Flat Rock that had to be completed before they could jump to the Prickle Bush. Each frog had to create an array of 24 pebbles.

Build the arrays to solve the problem first, then draw them.

Look for these arrays:

- 1 × 24
- 2 × 12
- 3 × 8
- 4 × 6

Drawings will vary.

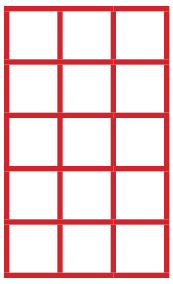
ANSWER KEY

4 Today, something is different. Spanky is jumping harder and farther than ever! First, he did 3 jumps and each one was 5 feet long. Then he did 2 more jumps. Each of those was 3 feet long. How far did Spanky jump?

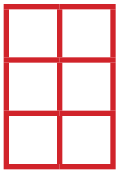
Draw a picture to show each of Spanky's jumps.

Answers will vary.

Draw an array for each group of jumps. How many are in each array? How far did Spanky jump?

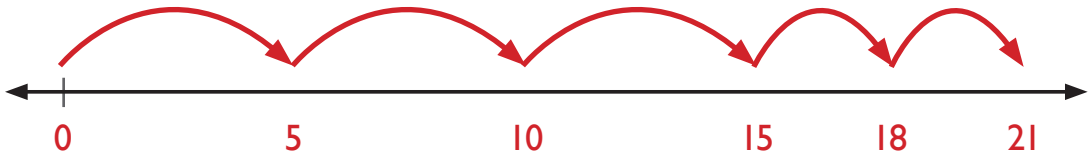


15 jumps



6 jumps

Show how far Spanky jumped on the number line. Label each jump and the total amount.



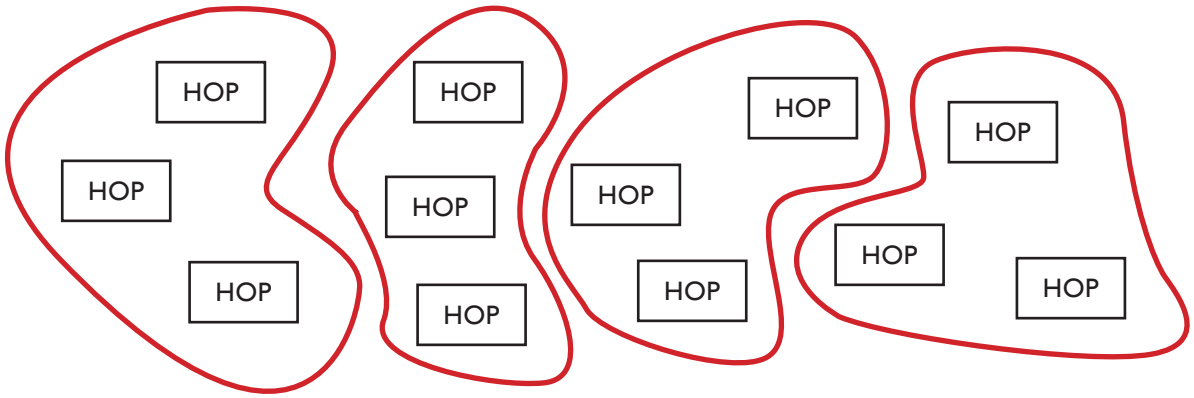
If Spanky started these long jumps at the Ugly Tree, did these jumps take him all the way to the finish line? How do you know? (You may use information in previous questions to help you answer.)

No; these jumps only get Spanky 21 feet but the whole race is 32 feet long.

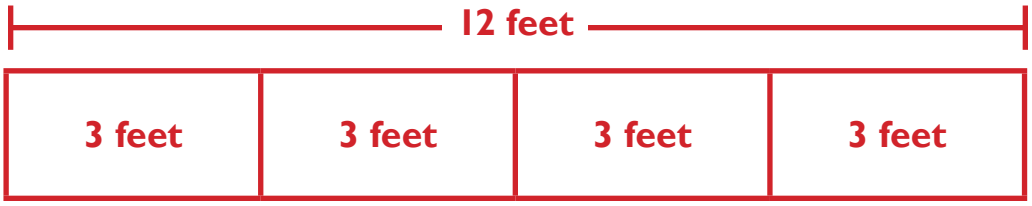
ANSWER KEY

5 Freddie was mad! How had Spanky learned to jump so far? Freddy decided that he needed to go 12 feet and fast! He knew that shorts hops were sometimes faster than long hops. He decided to hop 4 times to get to 12 feet. How long was each hop?

Draw circles around the hops to show how many feet are in each hop.



Draw a strip diagram to show how long each hop is.



Fill in the blanks.

4 (number of hops) groups of 3 (length of each hop) = 12 (total length of hops)

The equations below are the fact families for this problem. Which equation best describes this problem?

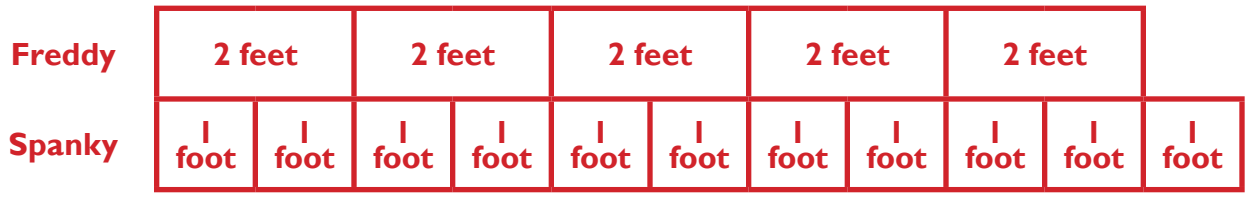
$4 \times 3 = 12$ $3 \times 4 = 12$ **$12 \div 4 = 3$** $12 \div 3 = 4$

Why?

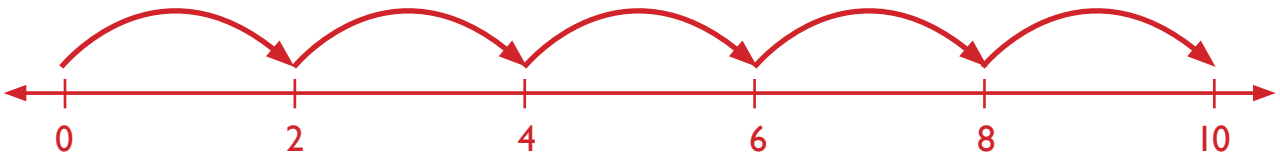
ANSWER KEY

6 Spanky and Freddy are close! Freddy has 12 feet left in the race and Spanky has 11 feet. Both of them were getting tired. Freddy does 5 jumps that are 2 feet each and then falls down because he's so tired. Spanky does 11 jumps that are 1 foot each. Then he falls down too. Who wins the race?

Draw strip diagrams to compare the length that Freddy jumped and the length that Spanky jumped. Be sure the drawings show who the winner is.



Show Freddy's hops on a number line. Label the number line to show how you could skip count to find the answer.



ANSWER KEY

7 Even though Spanky won the race, he decides to split the grand prize with Freddy – 2 big bags of fat, juicy flies! Spanky and Freddy were so excited! Each bag holds 24 flies. How many flies were in the grand prize?

Find the total number of flies using addition.

$$\begin{array}{r} 24 \\ +\ 24 \\ \hline 48 \end{array}$$

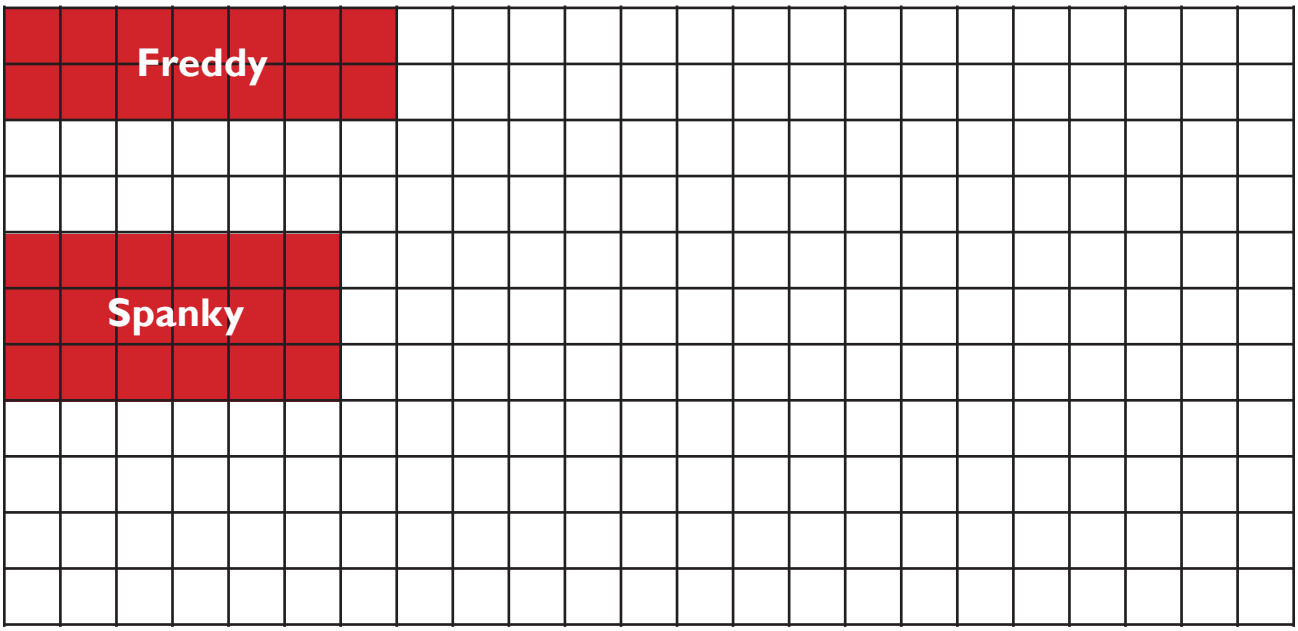
Find the total number of flies using multiplication.

$$\begin{array}{r} 24 \\ \times\ 2 \\ \hline 48 \end{array}$$

Do your answers match? yes

8 After eating all the flies, Spanky and Freddy went to practice jumping for next year's race. Freddy jumped 7 times and traveled 2 feet each jump. Spanky jumped 6 times and traveled 3 feet each jump. Which frog traveled farther?

Shade the grid below to show the length that Freddy jumped and the length that Spanky jumped.



Which frog jumped farther – Freddy or Spanky? Spanky

THE FLYING, HOPPING, JUMPING RACE!

Name: _____

Directions: For each problem, draw a picture and then solve.

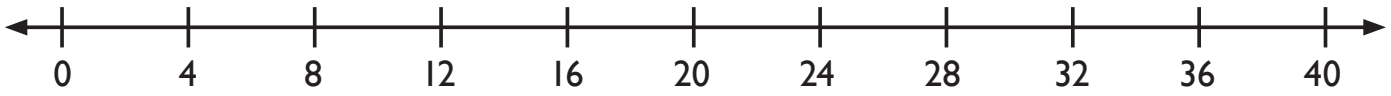
1 Spanky Hopper and Freddy Flyer are preparing for their jumping race. They do it every year. Frogs do things like that.

Each year they start at the **Lily Pad**. Then they race to the **Ugly Tree**, to the **Flat Rock**, to the **Prickle Bush**, and finally to the **Finish Line**.

Each part of the jumping race is 8 feet. How long is the whole race?

Draw a picture of the race. Label your picture. (Keep this picture handy. You are going to use it for every problem!)

Use the number line to solve the problem.



Solve the problem using skip counting. Show how you skip counted here.

The equations below are the fact families that can be used to solve the problem. Circle the answer to the problem in each equation.

$4 \times 8 = 32$ $8 \times 4 = 32$ $32 \div 4 = 8$ $32 \div 8 = 4$

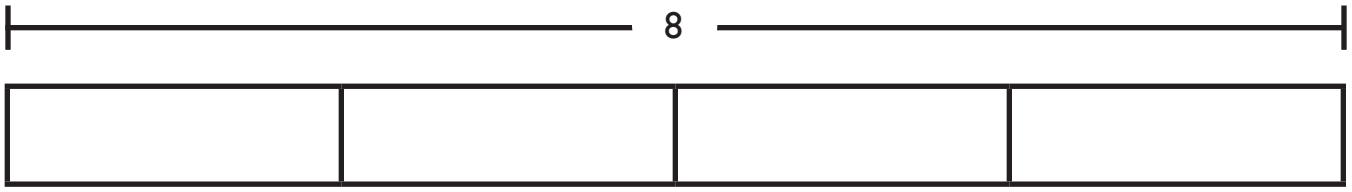
Name: _____

2 Freddie takes 4 jumps to get from the **Lily Pad** to the **Ugly Tree**. How long are Freddie's jumps? (Use the information from Problem #1 to find the distance the **Lily Pad** to the **Ugly Tree**.)

Draw a picture of the race. Label your picture. (Keep this picture handy. You are going to use it for every problem!)

Write an equation to solve the problem.

Label the diagram to show the number of feet in Freddie's jumps.



Which answer is correct? Circle the correct answer.

A. 4, because 8 ÷ 2 = 4

B. 2, because 8 – 6 = 2

C. 4, because 4 × 2 = 8

D. 2, because 8 ÷ 4 = 2

Name: _____

3 This year, they added a challenge on the Flat Rock that had to be completed before they could jump to the Prickle Bush. Each frog had to create an array of 24 pebbles.

Build the arrays to solve the problem first, then draw them.

Name: _____

4 Today, something is different. Spanky is jumping harder and farther than ever! First, he did 3 jumps and each one was 5 feet long. Then he did 2 more jumps. Each of those was 3 feet long. How far did Spanky jump?

Draw a picture to show each of Spanky's jumps.

Draw an array for each group of jumps. How many are in each array? How far did Spanky jump?

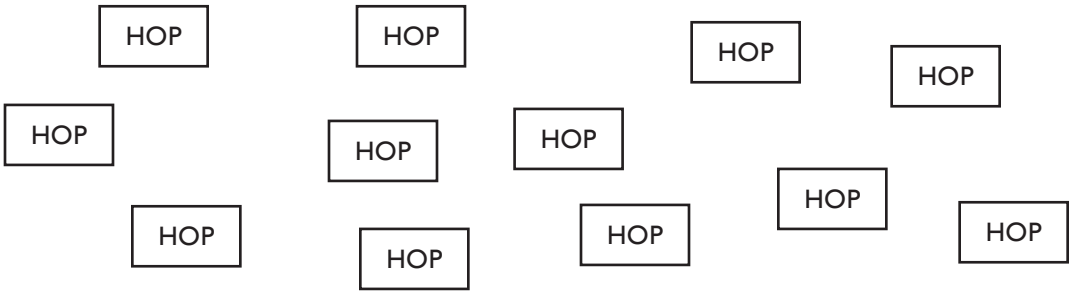
Show how far Spanky jumped on the number line. Label each jump and the total amount.

If Spanky started these long jumps at the Ugly Tree, did these jumps take him all the way to the finish line? How do you know? (You may use information in previous questions to help you answer.)

Name: _____

5 Freddie was mad! How had Spanky learned to jump so far? Freddy decided that he needed to go 12 feet and fast! He knew that shorts hops were sometimes faster than long hops. He decided to hop 4 times to get to 12 feet. How long was each hop?

Draw circles around the hops to show how many feet are in each hop.



Draw a strip diagram to show how long each hop is.

Fill in the blanks.

_____ groups of _____ = _____

number of hops | length of each hop | total length of hops

The equations below are the fact families for this problem. Which equation best describes this problem?

$4 \times 3 = 12$ $3 \times 4 = 12$ $12 \div 4 = 3$ $12 \div 3 = 4$

Why?

Name: _____

6 Spanky and Freddy are close! Freddy has 12 feet left in the race and Spanky has 11 feet. Both of them were getting tired. Freddy does 5 jumps that are 2 feet each and then falls down because he's so tired. Spanky does 11 jumps that are 1 foot each. Then he falls down too. Who wins the race?

Draw strip diagrams to compare the length that Freddy jumped and the length that Spanky jumped. Be sure the drawings show who the winner is.

Show Freddy's hops on a number line. Label the number link to show how you could skip count to find the answer.

Name: _____

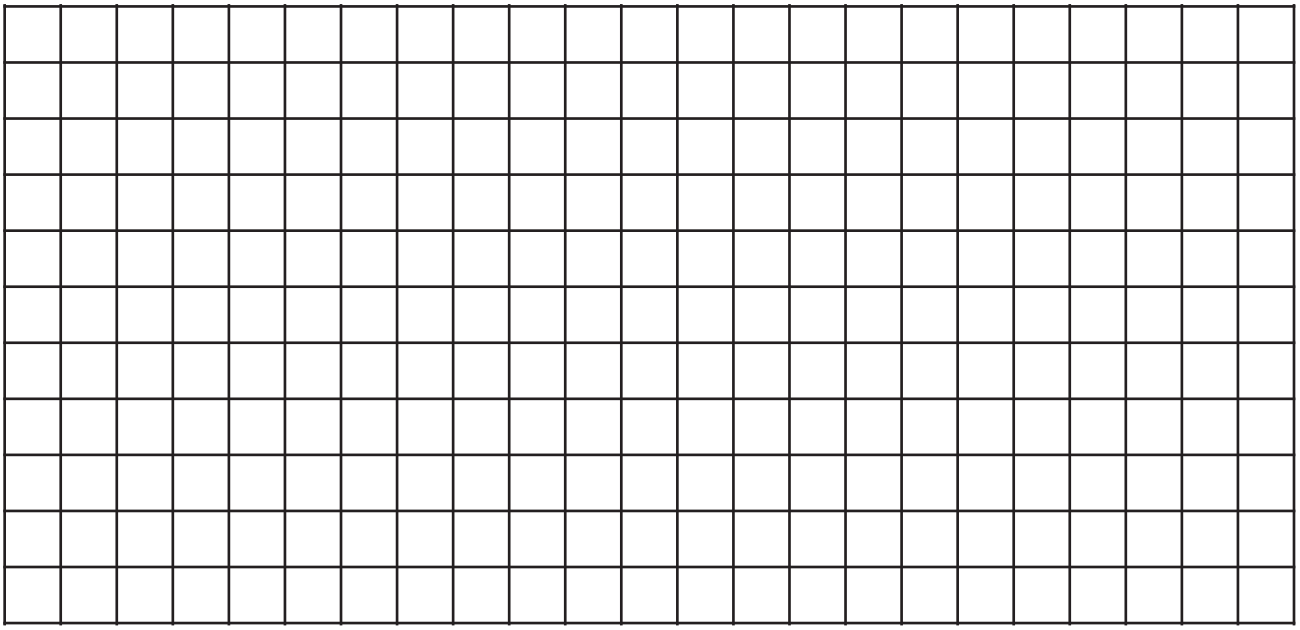
7 Even though Spanky won the race, he decides to split the grand prize with Freddy – 2 big bags of fat, juicy flies! Spanky and Freddy were so excited! Each bag holds 24 flies. How many flies were in the grand prize?

Find the total number of flies using addition.	Find the total number of flies using multiplication.

Do your answers match?

8 After eating all the flies, Spanky and Freddy went to practice jumping for next year's race. Freddy jumped 7 times and traveled 2 feet each jump. Spanky jumped 6 times and traveled 3 feet each jump. Which frog traveled farther?

Shade the grid below to show the length that Freddy jumped and the length that Spanky jumped.



Which frog jumped farther—Freddy or Spanky?

SYLVIE SPARKLE'S GREAT GIANT GEM MUSEUM

TEKS RS: 3.4K, 3.5B
SS: 3.4E, 3.4F, 3.4H, 3.4J

Topics: Multiplication & Division Facts & Models

WHAT IT'S ALL ABOUT!

This activity uses a context of a museum of fine jewels for students to practice multiplication and division, along with 2-step problems. Pictorial models and equations are specifically emphasized in this lesson. Allow your students to use concrete models if they wish.

IT'S A SETUP!

- ☐ Copy **Sylvie Sparkle's Great Giant Gem Museum** (PGS. 47–54) for each student.

Place students in groups of 2–3 to draw the models and solve the problems.

Back to the Table of **Contents** Table of **Standards**

SYLVIE SPARKLE'S GREAT GIANT GEM MUSEUM (PG. 1 OF 8)

ANSWER KEY

Directions: Solve each problem.

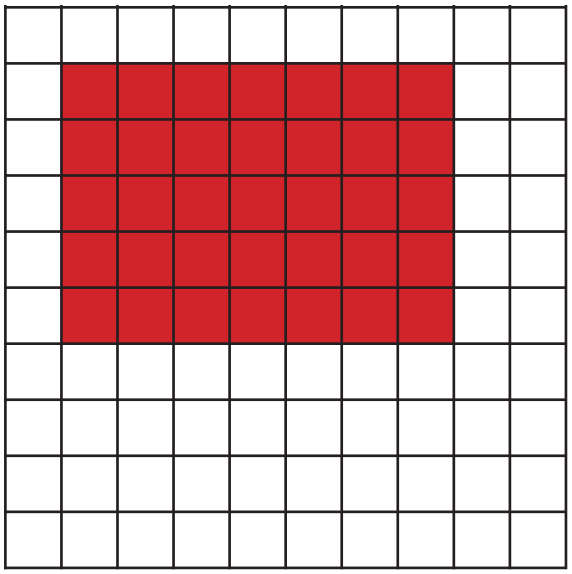
1. Sylvie Sparkle, the collector of fine jewels, is a very rich woman. She has so many beautiful stones and gems that she decides to build a jewelry museum. The two front rooms will hold her rubies and her emeralds. One of the rooms is larger than the other.

   Sylvie has 5 rows of chests containing emeralds. There are 7 chests in each row.

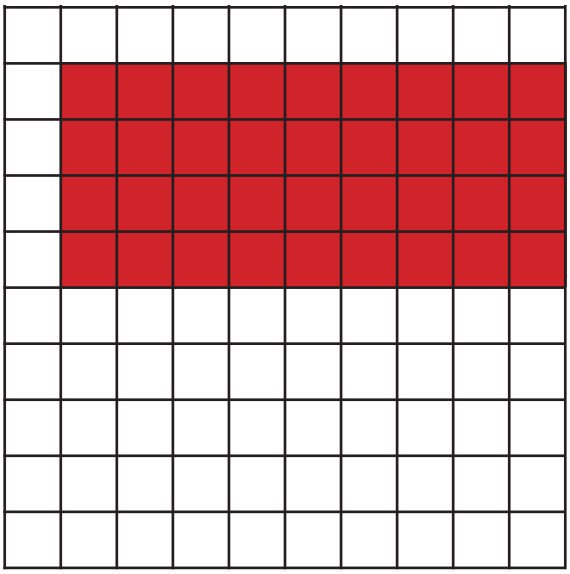
   She also has 4 rows of chests containing rubies. There are 9 chests in each row.

   Shade the grids below to show the emeralds and the rubies.

Emeralds



Rubies



Which jewel should she put in the larger room? Why? Use multiplication to explain your thinking.

She should put the rubies in the larger room because there are more rubies than emeralds.

$5 \times 7 = 35$; $4 \times 9 = 36$

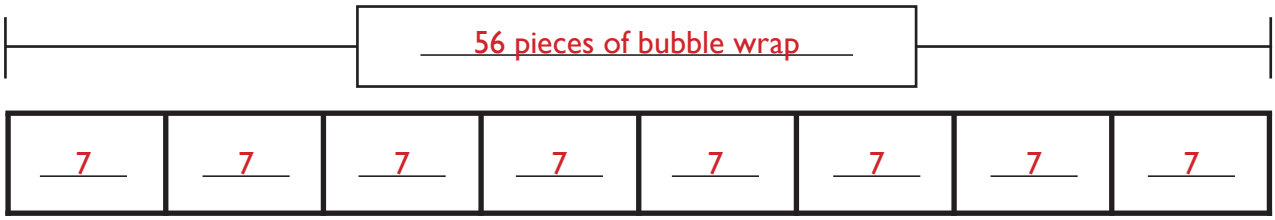
ANSWER KEY

2 In order to pack up her 8 largest and prettiest emeralds, Sylvie wraps them up in bubble wrap. She uses a total of 56 pieces of bubble wrap. She also uses the same number of pieces for each emerald. How many pieces of bubble wrap does she use to wrap each emerald?

Draw a picture to show your thinking.

Pictures will vary.

Fill in the blanks in the strip diagram.



Fill in the blanks.

8 (number of emeralds) groups of 7 (pieces of bubble wrap) = 56 (total pieces of bubble wrap)

The equations below are the fact families for this problem. Which equation best describes this problem?

$7 \times 8 = 56$ $8 \times 7 = 56$ $56 \div 7 = 8$ **$56 \div 8 = 7$**

Why?

ANSWER KEY

3 Sylvie carries her Perfect Rubies to the Ruby Room in 3 large bags. Each bag contains 3 boxes. Each box has the same number of rubies. She has 63 Perfect Rubies in all. How many Perfect Rubies are inside each tiny box?

Draw a picture to show your thinking.

Pictures will vary.

Write 2 equations that can help you solve this problem.

$3 \times 3 = 9$

$63 \div 9 = 7$

Answer the questions.

How many rubies are in each box? 7

How many rubies are in each bag? 21

If Sylvie sells one bag of rubies, how many rubies will she have left? 42

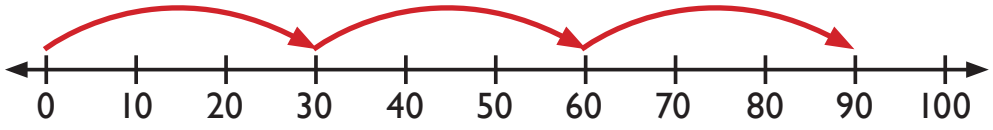
ANSWER KEY

4 One wall of Sylvie's museum is covered in diamonds. There are 3 rows of 30 diamonds along the bottom of the wall. The top of the wall has 6 rows of 15 diamonds. Which has more diamonds, the top or the bottom?

Use the number lines to model your thinking.

Diamonds at the Top of the Wall

Show your solution using a number line.

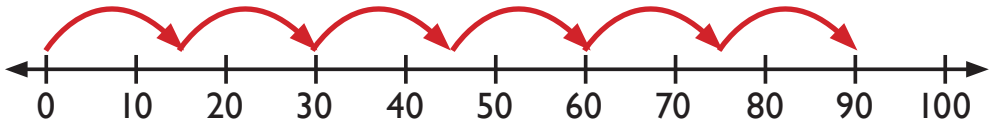


Solve using an equation.

$$\begin{array}{r} 30 \\ \times\ 3 \\ \hline 90 \end{array}$$

Diamonds at the Bottom of the Wall

Show your solution using a number line.



Solve using an equation.

$$\begin{array}{r} 15 \\ \times\ 6 \\ \hline 90 \end{array}$$

Answer the question.

They have the same number of diamonds.

ANSWER KEY

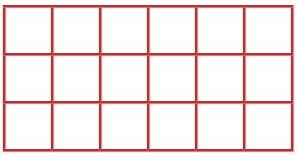
5 Since Sylvie's gems are worth a lot of money, she has a security system to protect them. If a thief enters the museum, the lights start flashing. Then an air horn honks with each step the thief makes.

One night 3 thieves broke into the museum, intent on stealing the diamonds. Each thief took 6 steps before the police caught them. How many times did the air horn honk?

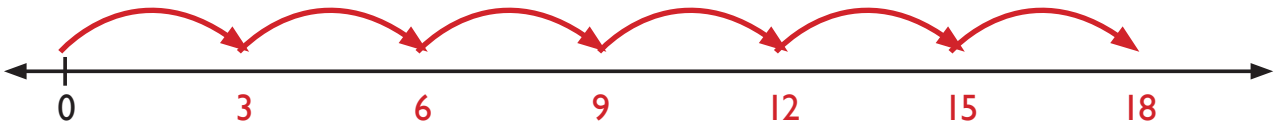
Draw a picture to show the number of times the air horn honked.

Pictures will vary.

Draw an array to show the number of times the air horn honked.



Show the number of times the air horn honked on the number line.



Which answer is correct? Circle the correct answer.

A. 2, because 6 ÷ 3 = 2

B. 2, because 6 – 4 = 2

C. 18, because 3 × 6 = 18

D. 18, because 3 + 6 + 9 =18

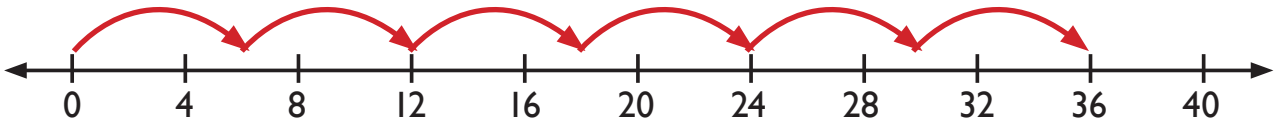
ANSWER KEY

6 Sylvie also keeps a team of 6 giant guard dogs. They're very sweet, unless you break in to the museum. The team of dogs eat 36 pounds of dog food per week in all. How many pounds of food do each of the dogs eat in a week?

Draw a picture to explain the problem. Label your picture.

Pictures will vary.

Use the number line to solve the problem.



Show how you could skip count to solve the problem.

6 12 18 24 30 36

or

36 30 24 18 12 6

The equations below are the fact families that can be used to solve the problem. Circle the answer to the problem in each equation.

(6) × 6 = 36 36 ÷ 6 = (6)

ANSWER KEY

7 That didn't seem safe enough for Sylvie Sparkle, so she designed a team of kung-fu robots to walk around the museum at night. There are 9 robots in all, and each robot has 6 arms. Well, all except for Marvin who is the slowest robot. He lost 4 of his arms in an accident. How many arms do the robots have in all? Draw a picture to help you answer this question.

Draw a picture of the each of the robots. Be sure to show the robots' arms.

Pictures will vary.

Write an equation to solve the problem.

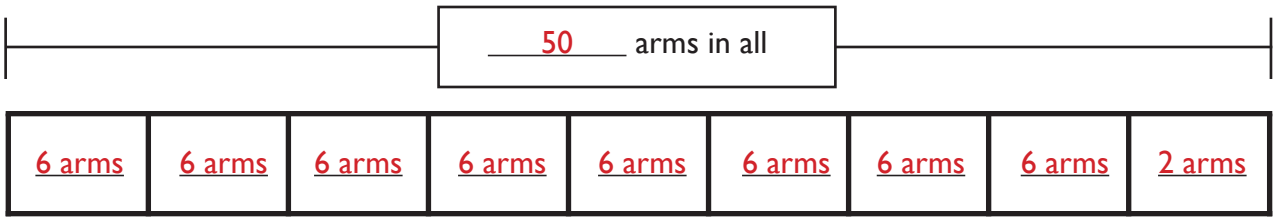
$8 \times 6 = 48$

$48 + 2 = 50$

or

$8 \times 6 + 2 = 50$

Fill in the blanks in the strip diagram.



Which answer is correct? Circle the correct answer.

A. 44, because $8 \times 6 = 48$ and $48 - 4 = 44$

B. 50, because $8 \times 6 = 48$ and $48 + 2 = 50$

C. 54, because $9 \times 6 = 54$

D. 56, because $9 \times 6 = 54$ and $54 + 2 = 56$

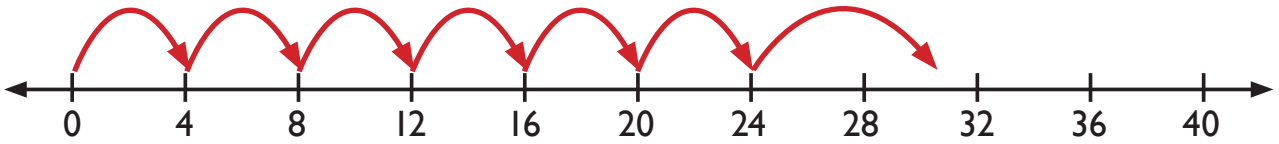
ANSWER KEY

8 If thieves came in and snuck past the lights and airhorns and then got away from the dogs, and beat up all the robots, they wouldn't be able to steal the jewels. Sylvie has one more defense, and it's the best one.

If anyone touches one of the gems after closing time, the floor under their feet falls away. They will fall into a hole full of sticky goo until the police arrive. (Yuck!)

The janitor waters the goo and rakes it around 4 times a day to make sure it stays wet and sticky. But on Saturdays, to make it even stickier, he rakes it 7 times. How many times does the janitor rake the goo in a week?

Use the number line to solve the problem.



Draw a strip diagram to solve the problem.

Strip diagrams will vary.

Circle the equations needed to solve this problem.

(4 × 6 = 24) 7 × 4 = 28 (24 + 7 = 31) 4 × 7 + 7 = 35

Which statements are correct? Circle all that are true. Correct the statements that are incorrect.

(A.) On Monday through Friday, the janitor stirs the goo a total of 20 times.

B. The total number of times that the janitor stirs the goo on Tuesday, Thursday, and Saturday is 12.

The total number of times that the janitor stirs the goo on Tuesday, Thursday, and Saturday is 15.

C. This problem can be solved multiplying 7 by 4 and then adding 3.

This problem can be solved multiplying 6 by 4 and then adding 7.

(D.) This problem can be solved using this equation: (6 × 4) + (1 × 7).

SYLVIE SPARKLE'S GREAT GIANT GEM MUSEUM (PG. 1 OF 8)

Directions: Solve each problem.

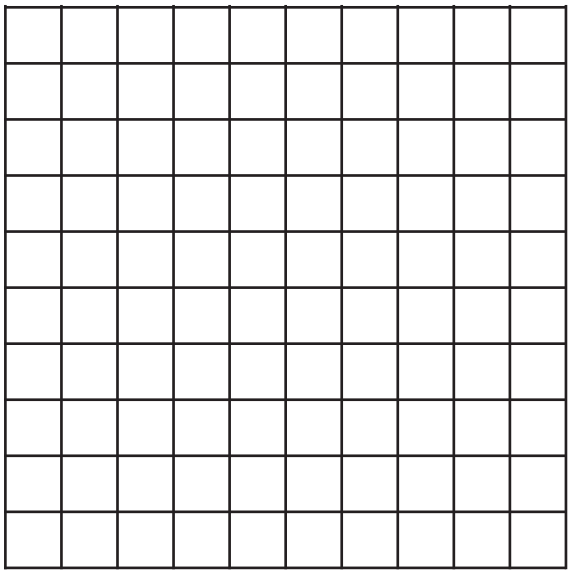
1 Sylvie Sparkle, the collector of fine jewels, is a very rich woman. She has so many beautiful stones and gems that she decides to build a jewelry museum. The two front rooms will hold her rubies and her emeralds. One of the rooms is larger than the other.

Sylvie has 5 rows of chests containing emeralds. There are 7 chests in each row.

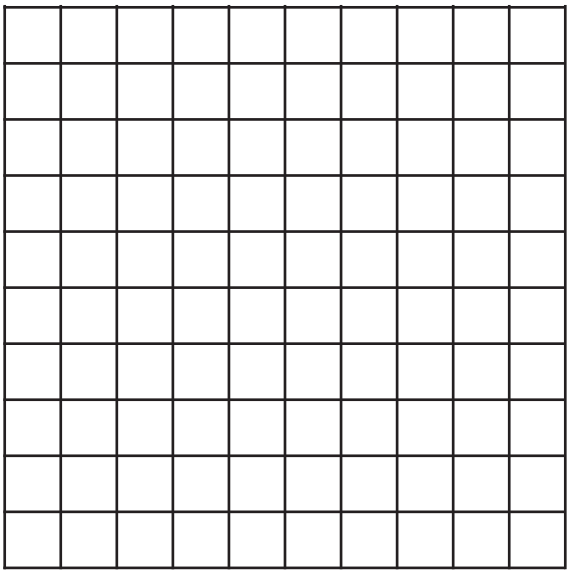
She also has 4 rows of chests containing rubies. There are 9 chests in each row.

Shade the grids below to show the emeralds and the rubies.

Emeralds



Rubies

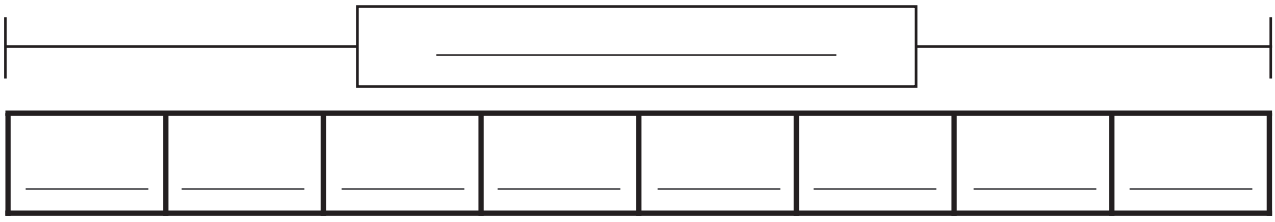


Which jewel should she put in the larger room? Why? Use multiplication to explain your thinking.

2 In order to pack up her 8 largest and prettiest emeralds, Sylvie wraps them up in bubble wrap. She uses a total of 56 pieces of bubble wrap. She also uses the same number of pieces for each emerald. How many pieces of bubble wrap does she use to wrap each emerald?

Draw a picture to show your thinking.

Fill in the blanks in the strip diagram.



Fill in the blanks.

_____ groups of _____ = _____

number of emeralds | pieces of bubble wrap | total pieces of bubble wrap

The equations below are the fact families for this problem. Which equation best describes this problem?

$7 \times 8 = 56$ $8 \times 7 = 56$ $56 \div 7 = 8$ $56 \div 8 = 7$

Why?

SYLVIE SPARKLE'S GREAT GIANT GEM MUSEUM (PG. 3 OF 8)

3 Sylvie carries her Perfect Rubies to the Ruby Room in 3 large bags. Each bag contains 3 boxes. Each box has the same number of rubies. She has 63 Perfect Rubies in all. How many Perfect Rubies are inside each tiny box?

Draw a picture to show your thinking.

Write 2 equations that can help you solve this problem.

Answer the questions.

How many rubies are in each box? _____

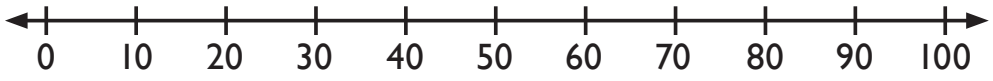
How many rubies are in each bag? _____

If Sylvie sells one bag of rubies, how many rubies will she have left? _____

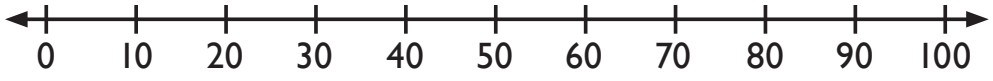
4 One wall of Sylvie's museum is covered in diamonds. There are 3 rows of 30 diamonds along the bottom of the wall. The top of the wall has 6 rows of 15 diamonds. Which has more diamonds, the top or the bottom?

Use the number lines to model your thinking.

Diamonds at the Top of the Wall

Show your solution using a number line.	Solve using an equation.
	

Diamonds at the Bottom of the Wall

Show your solution using a number line.	Solve using an equation.
	
Answer the question.	

5 Since Sylvie's gems are worth a lot of money, she has a security system to protect them. If a thief enters the museum, the lights start flashing. Then an air horn honks with each step the thief makes.

One night 3 thieves broke into the museum, intent on stealing the diamonds. Each thief took 6 steps before the police caught them. How many times did the air horn honk?

Draw a picture to show the number of times the air horn honked.

Draw an array to show the number of times the air horn honked.

Show the number of times the air horn honked on the number line.

Which answer is correct? Circle the correct answer.

A. 2, because $6 \div 3 = 2$

B. 2, because $6 - 4 = 2$

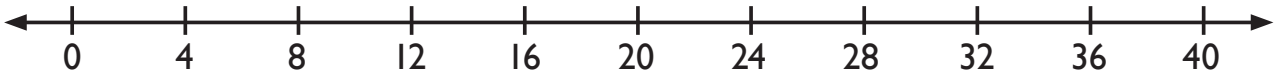
C. 18, because $3 \times 6 = 18$

D. 18, because $3 + 6 + 9 = 18$

6 Sylvie also keeps a team of 6 giant guard dogs. They're very sweet, unless you break in to the museum. The team of dogs eat 36 pounds of dog food per week in all. How many pounds of food do each of the dogs eat in a week?

Draw a picture to explain the problem. Label your picture.

Use the number line to solve the problem.



Show how you could skip count to solve the problem.

The equations below are the fact families that can be used to solve the problem. Circle the answer to the problem in each equation.

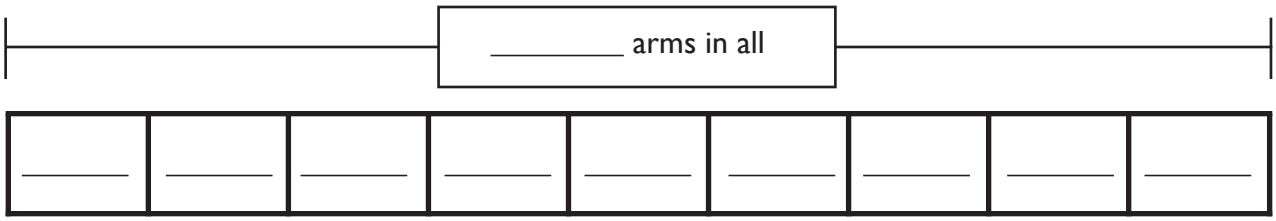
$6 \times 6 = 36$ $36 \div 6 = 6$

7 That didn't seem safe enough for Sylvie Sparkle, so she designed a team of kung-fu robots to walk around the museum at night. There are 9 robots in all, and each robot has 6 arms. Well, all except for Marvin who is the slowest robot. He lost 4 of his arms in an accident. How many arms do the robots have in all? Draw a picture to help you answer this question.

Draw a picture of the each of the robots. Be sure to show the robots' arms.

Write an equation to solve the problem.

Fill in the blanks in the strip diagram.



Which answer is correct? Circle the correct answer.

A. 44, because 8 × 6 = 48 and 48 – 4 = 44

B. 50, because 8 × 6 = 48 and 48 + 2 = 50

C. 54, because 9 × 6 = 54

D. 56, because 9 × 6 = 54 and 54 + 2 = 56

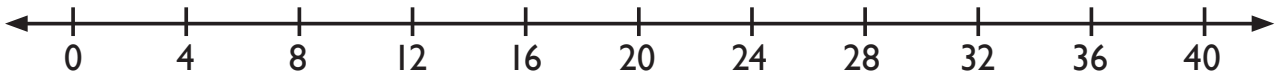
SYLVIE SPARKLE'S GREAT GIANT GEM MUSEUM (PG. 8 OF 8)

8 If thieves came in and snuck past the lights and airhorns and then got away from the dogs, and beat up all the robots, they wouldn't be able to steal the jewels. Sylvie has one more defense, and it's the best one.

If anyone touches one of the gems after closing time, the floor under their feet falls away. They will fall into a hole full of sticky goo until the police arrive. (Yuck!)

The janitor waters the goo and rakes it around 4 times a day to make sure it stays wet and sticky. But on Saturdays, to make it even stickier, he rakes it 7 times. How many times does the janitor rake the goo in a week?

Use the number line to solve the problem.



Draw a strip diagram to solve the problem.

Circle the equations needed to solve this problem.

$4 \times 6 = 24$ $7 \times 4 = 28$ $24 + 7 = 31$ $4 \times 7 + 7 = 35$

Which statements are correct? Circle all that are true. Correct the statements that are incorrect.

A. On Monday through Friday, the janitor stirs the goo a total of 20 times.

B. The total number of times that the janitor stirs the goo on Tuesday, Thursday, and Saturday is 12.

C. This problem can be solved multiplying 7 by 4 and then adding 3.

D. This problem can be solved using this equation: $(6 \times 4) + (1 \times 7)$

SAMMY WHAMMY DROPS THE BALL!

TEKS RS: 3.5A SS: 3.4G, 3.7C

Topic: All Operations

WHAT IT'S ALL ABOUT!

This activity tells the story of an awful baseball player and involves practice with all 4 operations.

IT'S A SETUP!

- ☐ Copy **Sammy Whammy Drops the Ball!** (PGS. 62–67) for every 2–3 students.
- ☐ Other Materials:
  - □ **Scratch paper** for each student.
  - □ **Colored pencils** for each student

Place students in groups of 2–3 to use the models and solve the problems.

ANSWER KEY

Models will vary.

1. 144 feet
2. 65 minutes; more than an hour (20 + 35 + 10 = 65)
3. 99 times
4. 847 missed balls
5. 56 × 3 = 168 home runs
6. 516 – 29 = 487 catches
7. 24 games per year
8. 126 hours

Back to the Table of **Contents** Table of **Standards**

SAMMY WHAMMY DROPS THE BALL! (PG. 1 OF 6)

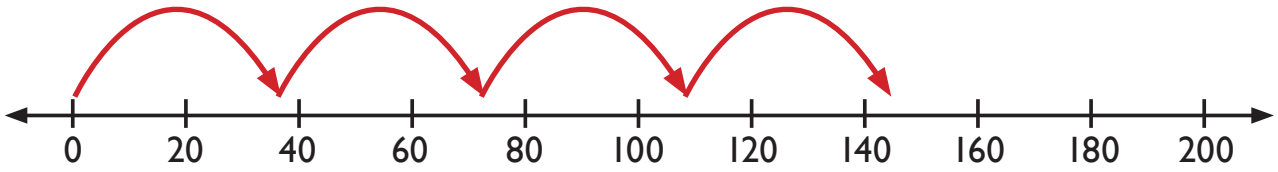
ANSWER KEY

Directions: Use the different models given to solve each problem.

1 Sammy Whammy is a baseball player, but he isn't very good. Each game, he walks 36 feet to go to bat, strikes out, and walks 36 feet back to the dugout. How many feet does Sammy walk if he bats twice in one game?

Use the number line below to solve the problem.

Students' use of the number line will vary.



Solution: 144 feet

Draw a strip diagram to solve the problem.

Strip diagrams will vary.

Feet Walked			
36 feet	36 feet	36 feet	36 feet

Write the equation you used to solve the problem.

Equations will vary. Some possible answers include:

36 + 36 + 36 + 36 = feet

36 × 4 = feet

36 × 2 × 2 = feet

36 × 2 + 36 × 2 = feet

ANSWER KEY

2 Sammy Whammy needs to practice his running.

- At practice, Sammy Whammy has to rest for 20 minutes after each time he bats.
- He also has to rest for 35 minutes each time he runs around the bases.
- If he runs right after he bats, he needs 10 *extra* minutes of rest before he can do anything else!

Sammy was up to bat. He hit the ball and ran around the bases. How many minutes did he need to rest?

Solve the problem. Show your thinking with a picture to prove that you are correct.

Pictures will vary.

$$20 + 35 + 10 = 65$$

Solution: 65 minutes

3 Sammy always swings the bat as hard as he can. But every time he hits the ball, it goes backwards and into the stands. He hits the ball into the stands 3 times each game. How many times does he hit the ball into the stands in 33 games?

Fill in the strip diagram to solve the problem.

99 hits		
33 hits	33 hits	33 hits

Solve the problem a different way to prove that your strip diagram is correct.

Solution methods will vary.

Solution: 99 hits

ANSWER KEY

4 Sammy doesn't do very well in the outfield, either. 2 years ago, he missed 388 balls that were thrown to him. Last year, he missed 400. This year, he has only missed 59 balls so far. But there is plenty of time left in the season for him to make more mistakes. How many balls has he missed in all (so far)? Use a pictorial model to help you solve this problem.

Use your favorite method to solve the problem.

Solution methods will vary.

Solution: 847 balls

Compare the way you solved the problem with the way your neighbor solved the problem. Did you solve the problem using the same method? Did you get the same answer?

5 Sammy Whammy was not always so bad at baseball. He was the best player on his team when he was a boy. Over his 3 years of Little League, he played 56 games. In each game, he hit 3 home runs. How many home runs did Sammy hit while he was in Little League? Write an equation to help you solve this problem.

Use your favorite method to solve the problem.

Solution methods will vary.

Solution: 168 home runs

Solve the problem a different way to prove that your solution is correct.

Solution methods will vary.

ANSWER KEY

6 In high school, Sammy caught 516 more balls in the outfield than he missed. He only missed the ball 29 times. How many times did he catch the ball in high school?

Use the number line to solve the problem.

Students' use of the number line will vary.

Solution: 487 balls

Draw a strip diagram to solve the problem.

Strip diagrams will vary.

Write the equation you used to solve the problem.

516 – 29 = balls

ANSWER KEY

7 When Sammy went to college, he decided to play soccer instead of baseball. He missed 96 baseball games over 4 years. How many baseball games did he miss each year?

Use your favorite method to solve the problem.

Solution: 24 games

Fill in the strip diagram to show your thinking.

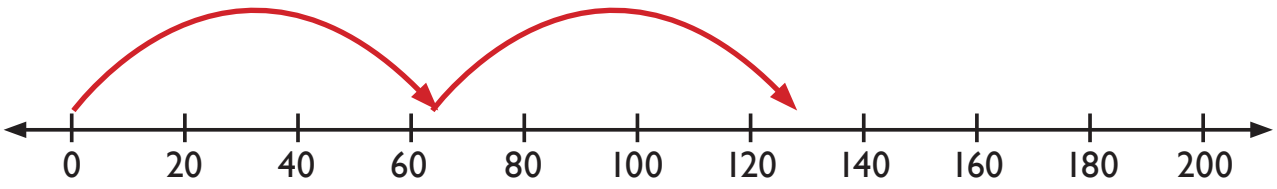
96 games		
24 games	24 games	24 games

ANSWER KEY

8 When Sammy decided to play baseball again, he realized that he had forgotten how to play baseball! In order to get to the Major League, he practiced for 9 hours every single day. How many hours did he practice in 2 weeks?

Use the number line to solve the problem.

Students' use of the number line will vary.



Solution: 126 hours

Draw a strip diagram to solve the problem.

Strip diagrams will vary.

There are two ways to solve this problem. Circle a pair of equations that can be used to solve the problem. Then underline the other pair.

7 × 2 = 14 | 7 × 9 = 63 | 63 × 2 = 126 | 14 × 9 = 126

Which statements are correct? Circle all that are true. Correct the statements that are incorrect.

A. Sammy practiced the same number of hours during the first week as the second week.

B. Sammy practiced a total of 126 hours over the two weeks.

C. Another way to solve this problem is to multiply 14 × 9.

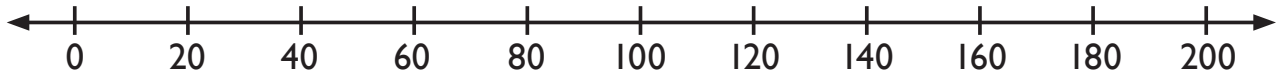
D. 9 × 7 × 2 gives you the same product as 7 × 2 × 9.

SAMMY WHAMMY DROPS THE BALL! (PG. 1 OF 6)

Directions: Use the different models given to solve each problem.

1 Sammy Whammy is a baseball player, but he isn't very good. Each game, he walks 36 feet to go to bat, strikes out, and walks 36 feet back to the dugout. How many feet does Sammy walk if he bats twice in one game?

Use the number line below to solve the problem.



Solution: _____

Draw a strip diagram to solve the problem.

Write the equation you used to solve the problem.

2 Sammy Whammy needs to practice his running.

- At practice, Sammy Whammy has to rest for 20 minutes after each time he bats.
- He also has to rest for 35 minutes each time he runs around the bases.
- If he runs right after he bats, he needs 10 *extra* minutes of rest before he can do anything else!

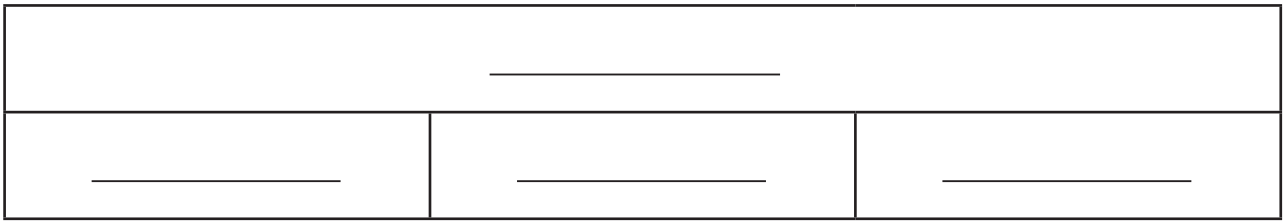
Sammy was up to bat. He hit the ball and ran around the bases. How many minutes did he need to rest?

Solve the problem. Show your thinking with a picture to prove that you are correct.

Solution: _____

3 Sammy always swings the bat as hard as he can. But every time he hits the ball, it goes backwards and into the stands. He hits the ball into the stands 3 times each game. How many times does he hit the ball into the stands in 33 games?

Fill in the strip diagram to solve the problem.



Solve the problem a different way to prove that your strip diagram is correct.

Solution: _____

4 Sammy doesn't do very well in the outfield, either. 2 years ago, he missed 388 balls that were thrown to him. Last year, he missed 400. This year, he has only missed 59 balls so far. But there is plenty of time left in the season for him to make more mistakes. How many balls has he missed in all (so far)? Use a pictorial model to help you solve this problem.

Use your favorite method to solve the problem.

Solution: _____

Compare the way you solved the problem with the way your neighbor solved the problem. Did you solve the problem using the same method? Did you get the same answer?

5 Sammy Whammy was not always so bad at baseball. He was the best player on his team when he was a boy. Over his 3 years of Little League, he played 56 games. In each game, he hit 3 home runs. How many home runs did Sammy hit while he was in Little League? Write an equation to help you solve this problem.

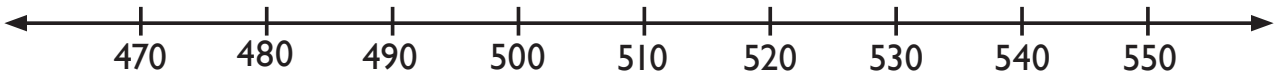
Use your favorite method to solve the problem.

Solution: _____

Solve the problem a different way to prove that your solution is correct.

6 In high school, Sammy caught 516 more balls in the outfield than he missed. He only missed the ball 29 times. How many times did he catch the ball in high school?

Use the number line to solve the problem.



Solution: _____

Draw a strip diagram to solve the problem.

Write the equation you used to solve the problem.

7 When Sammy went to college, he decided to play soccer instead of baseball. He missed 96 baseball games over 4 years. How many baseball games did he miss each year?

Use your favorite method to solve the problem.

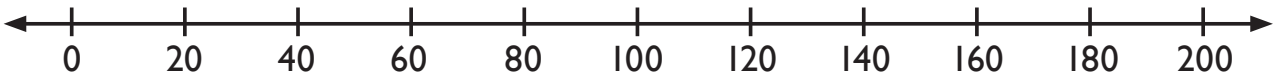
Solution: _____

Fill in the strip diagram to show your thinking.

SAMMY WHAMMY DROPS THE BALL! (PG. 6 OF 6)

8 When Sammy decided to play baseball again, he realized that he had forgotten how to play baseball! In order to get to the Major League, he practiced for 9 hours every single day. How many hours did he practice in 2 weeks?

Use the number line to solve the problem.



Solution: _____

Draw a strip diagram to solve the problem.

There are two ways to solve this problem. Circle a pair of equations that can be used to solve the problem. Then underline the other pair.

$7 \times 2 = 14$ $7 \times 9 = 63$ $63 \times 2 = 126$ $14 \times 9 = 126$

Which statements are correct? Circle all that are true. Correct the statements that are incorrect.

A. Sammy practiced the same number of hours during the first week as the second week.

B. Sammy practiced a total of 126 hours over the two weeks.

C. Another way to solve this problem is to multiply 14×9.

D. $9 \times 7 \times 2$ gives you the same product as $7 \times 2 \times 9$.

THAT TASTY BOOGER BARBECUE SAUCE

TEKS RS: 3.5A, 3.5B SS: 3.4D, 3.7E

Topic: All Operations

WHAT IT'S ALL ABOUT!

This activity involves practice with all four operations using a variety of models. It also explores liquid volume and weight. Extraneous numbers are sometimes included in order to encourage close reading, an important test taking skill.

IT'S A SETUP!

☐ Copy **That Tasty Booger Barbecue Sauce** (PGS. 76–82) for each student.

Put students in pairs or groups of three and hand out materials. Students should read the problems to themselves as well as aloud, then work together to solve.

ANSWER KEY

1. 6 loads per day; the finished array should show 6 in each column.
2. 313 bottles; number lines will vary.
3. 8 six-gallon jugs
4. 72 pounds
5. 288 tomatoes
6. 311 pounds more per day
7. 60 hours
8. $36

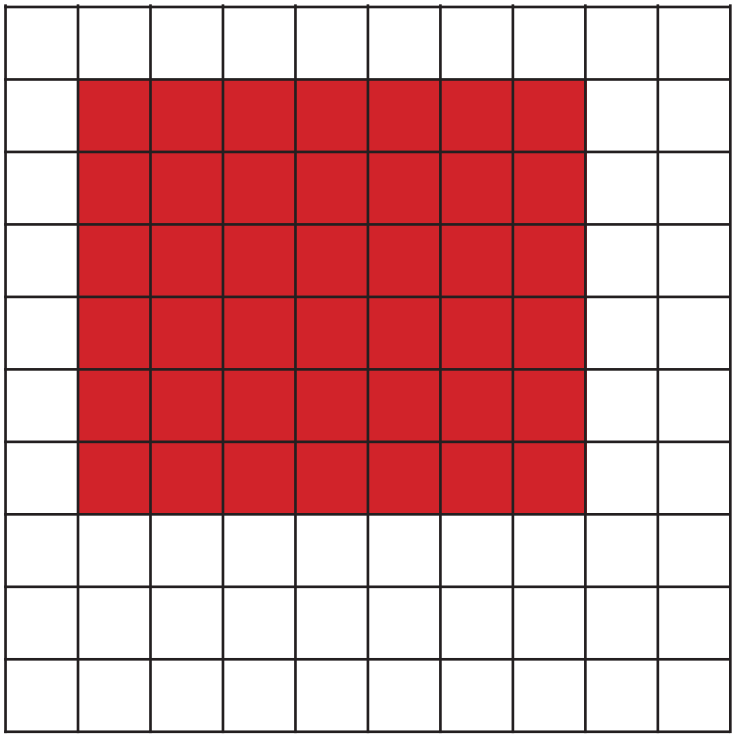
Back to the Table of **Contents** Table of **Standards**

THAT TASTY BOOGER BARBECUE SAUCE (PG. 1 OF 7)

ANSWER KEY

Directions: Solve each problem using the appropriate model. If there is a bottle of barbecue sauce next to the problem, figure out whether you are solving for liquid volume or weight, then write either "liquid volume" or "weight".

1. You might think it sounds gross, but Bobby's Booger Barbecue Sauce is the best in town. He sells it in every restaurant and store. Each week Bobby sends out 42 truckloads of sauce. The same number of trucks go out each day. How many truckloads of sauce are delivered each day? Shade the grid below to solve the problem.



Solution: 6 truckloads each day

ANSWER KEY

2 Two years ago, Bobby sold 195 bottles of Booger Barbecue Sauce in February. Last February, he sold 328 bottles. Now his business is even bigger. This February he sold 641 bottles. How many more bottles did Bobby sell during February of this year than he did last year?

Draw a strip diagram to solve the problem.

Strip diagrams will vary.

Solve the problem using another method. Do your answers match?

Solution: 313 bottles

ANSWER KEY

3 Bobby had a 60-gallon vat of Booger Barbecue Sauce that was ready to be sold. First, he poured 12 gallons of the sauce into small jars to give to his family and friends. Next, he took the rest of the sauce and poured it all into 6-gallon jugs. How many 6-gallon jugs did he use?

Draw a picture to show what Bobby did with the Booger Barbecue Sauce.

Pictures will vary.

Draw a strip diagram to solve the problem.

Strip diagrams will vary.

There are two ways to solve this problem. Circle a pair of equations that can be used to solve the problem. Then underline the other pair.

$60 \div 6 = 10$ $60 - 12 = 48$ $60 \times 6 = 360$ $48 \div 6 = 8$

Which statements are correct? Circle all that are true.

(A.) If Sammy had 12 friends, he could have given each of them 1 gallon of barbecue sauce.

(B.) Sammy divided 48 gallons of barbecue sauce into 8-gallon jugs.

C. Another way to solve this problem is to divide, $60 \div 10$.

D. This equation can also be used to solve the problem: $60 \div 6 - 12$.

ANSWER KEY

4 6 bottles of Booger Sauce fit into a small box, and 6 small boxes fit into a larger box. Bobby mails the larger boxes to his customers. The sauce from a bottle of Booger Sauce weighs 2 lbs. How much does the sauce from a larger box weigh?

Fill in the strip diagrams to solve the problem.

Weight of Small Box of Booger Sauce

2 lbs	2 lbs	2 lbs	2 lbs	2 lbs	2 lbs

Weight of Large Box of Booger Sauce

12 lbs	12 lbs	12 lbs	12 lbs	12 lbs	12 lbs

Solution: 72 pounds

Discuss the strip diagrams with your neighbor. Then write your explanations in words below.

Look for explanations such as this:

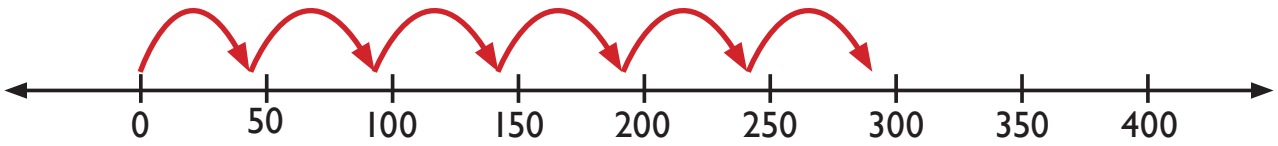
- Each bottle of barbecue sauce weighs 2 pounds.
- 6 bottles fit in a small box.
- Each small box weighs 12 pounds.
- The large box holds 6 small boxes.

ANSWER KEY

5 The secret recipe for Booger sauce uses special ingredients. To make its beautiful color, Bobby uses special Tiny Booger Tomatoes. It takes 48 tomatoes to make one batch of sauce. How many tomatoes does it take to make 6 batches of sauce?

Use the number line to solve the problem.

Students' use of the number line will vary.

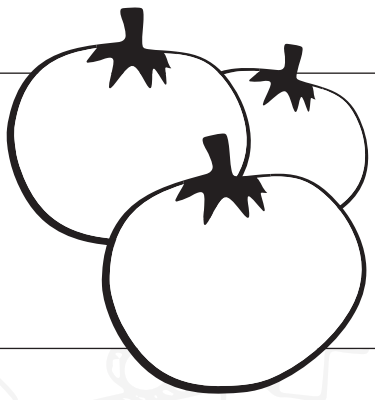


Draw a strip diagram to solve the problem.

Strip diagrams will vary.

Write the equation you used to solve the problem.

48 × 6 = 288 tomatoes



ANSWER KEY

6 For Booger Sauce's terrible smell, which is very important, Bobby uses special Stinky Booger Onions. He used to use 189 pounds of Stinky Booger Onions each day, but the sauce wasn't stinky enough. Now he uses 500 pounds each day. How many more pounds of Stinky Booger Onions does he use now than he did before?

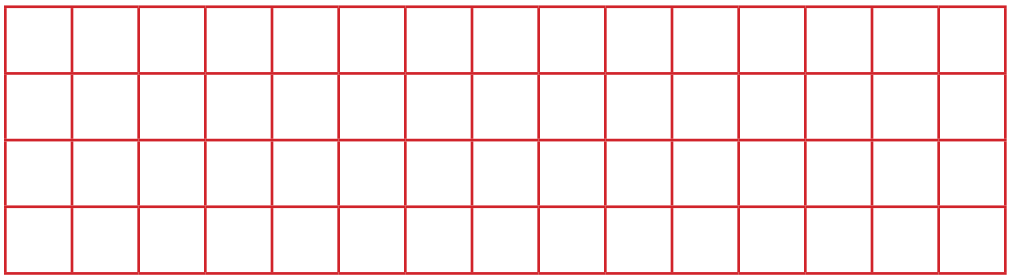
Use your favorite method to solve the problem.

Is this liquid volume or weight? Weight

Solution: 311 pounds

Compare the way you solved the problem with the way your neighbor solved the problem. Did you solve the problem using the same method? Did you get the same answer?

7 Today, Bobby is trying a new recipe experiment. For the last 15 days, he has spent 4 hours each day working on the recipe. How many hours did he work on the recipe? Draw an array to show how many hours Bobby worked on the recipe.



Solution: 60 hours

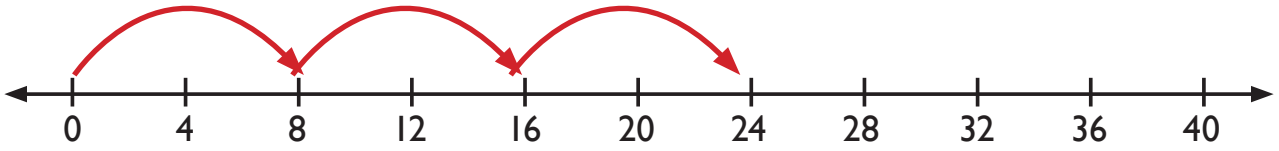
ANSWER KEY

8 On the last night of his research, Bobby realizes what his secret ingredient should be: real boogers! He is very excited and immediately makes 200 bottles of New Real Booger Sauce without even tasting it. He spends 3 times as much on the labels and boxes than he usually does. He usually spends $8. How much did he spend on the new labels and boxes?

Draw a picture to explain the problem. Label your picture.

Pictures will vary.

Use the number line to solve the problem.



Show how you could skip count to solve the problem.

8 16 24

or

3 6 9 12 15 18 21 24

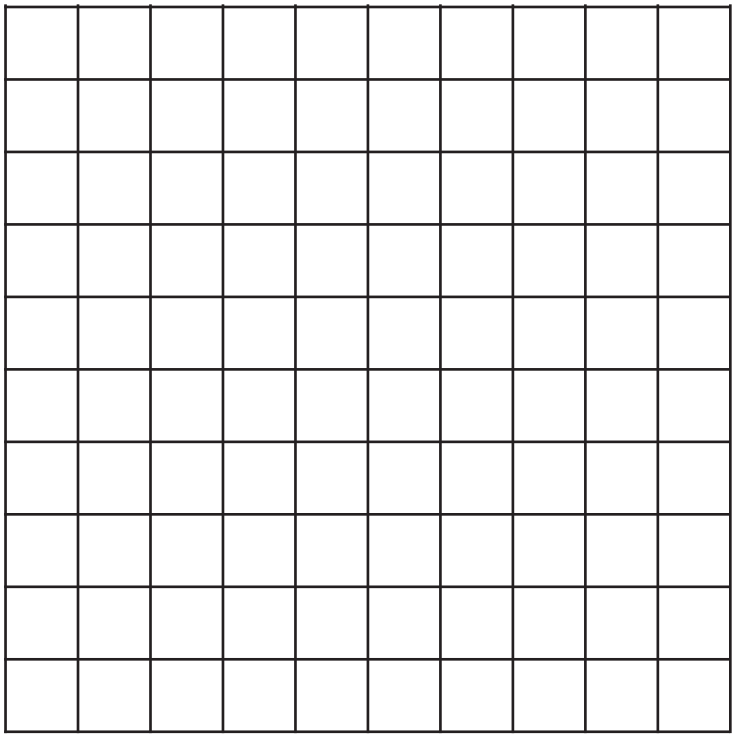
The equations below are the fact families that can be used to solve the problem. Circle the answer to the problem in each equation.

$3 \times 8 = (24)$ $(24) \div 8 = 3$

THAT TASTY BOOGER BARBECUE SAUCE (PG. 1 OF 7)

Directions: Solve each problem using the appropriate model. If there is a bottle of barbecue sauce next to the problem, figure out whether you are solving for liquid volume or weight, then write either "liquid volume" or "weight".

1. You might think it sounds gross, but Bobby's Booger Barbecue Sauce is the best in town. He sells it in every restaurant and store. Each week Bobby sends out 42 truckloads of sauce. The same number of trucks go out each day. How many truckloads of sauce are delivered each day? Shade the grid below to solve the problem.



Solution: _____

2 Two years ago, Bobby sold 195 bottles of Booger Barbecue Sauce in February. Last February, he sold 328 bottles. Now his business is even bigger. This February he sold 641 bottles. How many more bottles did Bobby sell during February of this year than he did last year?

Draw a strip diagram to solve the problem.

Solve the problem using another method. Do your answers match?

Solution: _____

3 Bobby had a 60-gallon vat of Booger Barbecue Sauce that was ready to be sold. First, he poured 12 gallons of the sauce into small jars to give to his family and friends. Next, he took the rest of the sauce and poured it all into 6-gallon jugs. How many 6-gallon jugs did he use?

Draw a picture to show what Bobby did with the Booger Barbecue Sauce.

Draw a strip diagram to solve the problem.

There are two ways to solve this problem. Circle a pair of equations that can be used to solve the problem. Then underline the other pair.

$60 \div 6 = 10$ $60 - 12 = 48$ $60 \times 6 = 360$ $48 \div 6 = 8$

Which statements are correct? Circle all that are true.

A. If Sammy had 12 friends, he could have given each of them 1 gallon of barbecue sauce.

B. Sammy divided 48 gallons of barbecue sauce into 8-gallon jugs.

C. Another way to solve this problem is to divide $60 \div 10$.

D. This equation can also be used to solve the problem: $60 \div 6 - 12$.

4 6 bottles of Booger Sauce fit into a small box, and 6 small boxes fit into a larger box. Bobby mails the larger boxes to his customers. The sauce from a bottle of Booger Sauce weighs 2 lbs. How much does the sauce from a larger box weigh?

Fill in the strip diagrams to solve the problem.

Weight of Small Box of Booger Sauce

_____	_____	_____	_____	_____	_____

Weight of Large Box of Booger Sauce

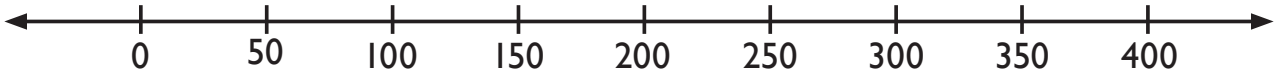
_____	_____	_____	_____	_____	_____

Solution: _____

Discuss the strip diagrams with your neighbor. Then write your explanations in words below.

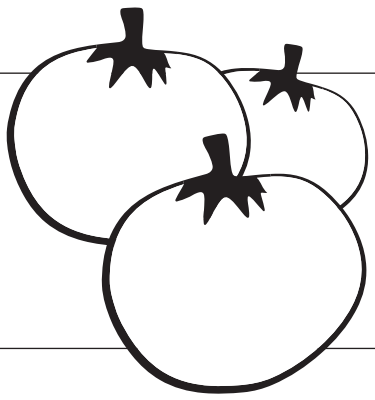
5 The secret recipe for Booger sauce uses special ingredients. To make its beautiful color, Bobby uses special Tiny Booger Tomatoes. It takes 48 tomatoes to make one batch of sauce. How many tomatoes does it take to make 6 batches of sauce?

Use the number line to solve the problem.



Draw a strip diagram to solve the problem.

Write the equation you used to solve the problem.



6 For Booger Sauce's terrible smell, which is very important, Bobby uses special Stinky Booger Onions. He used to use 189 pounds of Stinky Booger Onions each day, but the sauce wasn't stinky enough. Now he uses 500 pounds each day. How many more pounds of Stinky Booger Onions does he use now than he did before?

Use your favorite method to solve the problem.

Is this liquid volume or weight? _____

Solution: _____

Compare the way you solved the problem with the way your neighbor solved the problem. Did you solve the problem using the same method? Did you get the same answer?

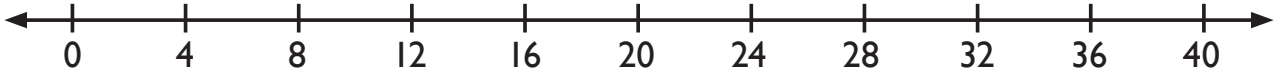
7 Today, Bobby is trying a new recipe experiment. For the last 15 days, he has spent 4 hours each day working on the recipe. How many hours did he work on the recipe? Draw an array to show how many hours Bobby worked on the recipe.

Solution: _____

8 On the last night of his research, Bobby realizes what his secret ingredient should be: real boogers! He is very excited and immediately makes 200 bottles of New Real Booger Sauce without even tasting it. He spends 3 times as much on the labels and boxes than he usually does. He usually spends $8. How much did he spend on the new labels and boxes?

Draw a picture to explain the problem. Label your picture.

Use the number line to solve the problem.



Show how you could skip count to solve the problem.

The equations below are the fact families that can be used to solve the problem. Circle the answer to the problem in each equation.

$3 \times 8 = 24$ $24 \div 8 = 3$

KAYA'S WEIRD WIDE WORLD

TEKS | **SS:** 3.3A, 3.3B, 3.3C, 3.3D

Topic: Fractions

WHAT IT'S ALL ABOUT!

This activity uses the story of a very strange traveling fair as a context for a series of problems involving fractions. Almost no arithmetic occurs in this lesson. Instead, students *represent* the fractions—as composite forms of unit fractions and on a number line. By going back and forth from one model to another, students build fluency and work toward an intuitive understanding of what fractions are and how they work.

IT'S A SETUP!

- ☐ Copy **Kaya's Weird Wide World** (PGS. 87–89) for each pair of students.
- ☐ Other Materials:
  - □ **Colored pencils**

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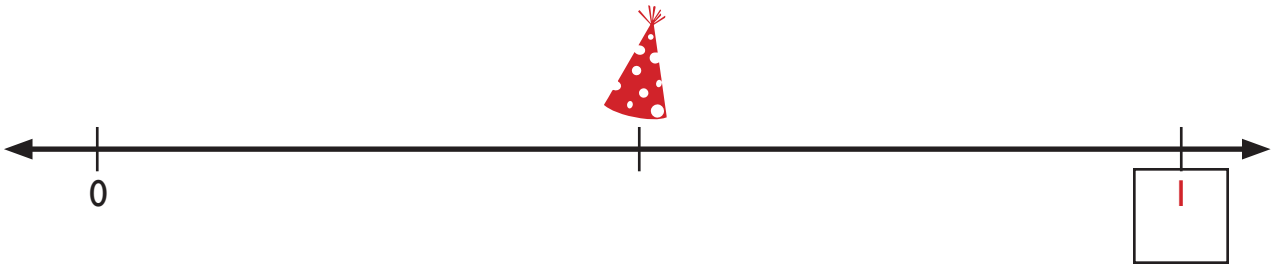
KAYA'S WEIRD WIDE WORLD (PG. 1 OF 3) ANSWER KEY

Directions: Kaya's Weird Wide World is the strangest traveling fair around. But that isn't good enough for Kaya. She wants to have the strangest fair in the world! So she and her best friend Wacky Luna decide to make some changes. You're going to help. Follow the directions in each problem to show what things used to be like and what changed.

1 Kaya's Carousel had a set of unicorns for kids to ride. $\frac{1}{2}$ of the unicorns had funny glasses and the other $\frac{1}{2}$ wore funny hats.

Draw a funny hat on the number line that shows how many unicorns wore funny hats.



2 "That's not weird enough," said Wacky Luna. Kaya replaced the unicorns on Kaya's Carousel with alligators! All the alligators have tattoos.

- $\frac{1}{6}$ of the alligators have tattoos of eyes above their eyes.
- $\frac{2}{6}$ have tattoos of hands on their feet.
- $\frac{3}{6}$ have tattoos of zebras on their tails.

Shade the strip diagram to show the fraction of alligators that have hand tattoos.

3 Kaya's coaster used to do 2 different things. It threw you up in the air or it dropped you in the lake. The strip diagram shows how often it did each.

What fraction of the time did the coaster throw you in the air? What fraction of the time did it drop you in the lake? Write the fractions below the strip diagram.

Air	Lake
$\frac{1}{2}$	$\frac{1}{2}$

4 "That's not weird enough," said Wacky Luna. Now it does one of 3 things. Either it shoots you through a fire, dumps fish on your head, or replaces the person next to you with a monkey! But the fire is scary, and most monkeys don't like roller coasters. So it dumps fish on your head $\frac{2}{3}$ of the time.

Use unit fractions to write an equation that shows the number of times that it dumps fish on your head.

$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$

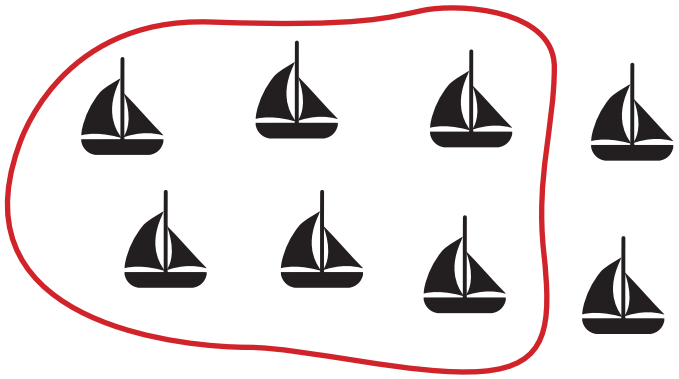
5 Kaya's fair used to have a Tunnel of Love. It was a rowboat ride full of hearts ♥ and glitter. $\frac{3}{8}$ of the boats that went through got a special surprise: a free ticket to be dropped in the lake by Kaya's Coaster!

Use unit fractions to write an equation that shows the number of winning boats as a sum of unit fractions.

$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{3}{8}$

6 "That's not weird enough," said Wacky Luna. So Kaya changed the Tunnel of Love to a Tunnel of Mice. And $\frac{6}{8}$ of the boats win a different surprise. The mice come out and chew on their shoes!

Draw a ring around the fraction of boats that win a mousy surprise. Then decompose $\frac{6}{8}$ three different ways.

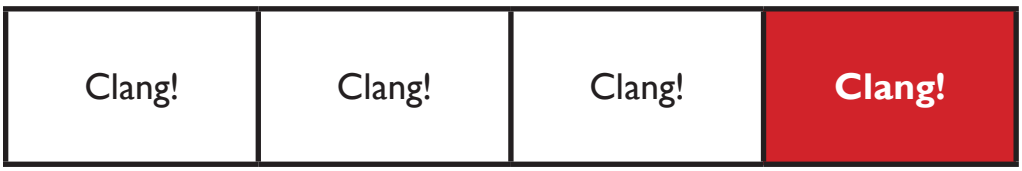


Decompose $\frac{6}{8}$ here.

Answers will vary. Ensure that the numerators add to 6 and the denominators are 8.

7 The entrance to Kaya's old fair was a beautiful old iron gate. It made a great big *CLANG!* sound each night when Kaya shut it. But it was very, very old, so it did not work very well. The strip diagram below shows how often the gate would not shut all the way.

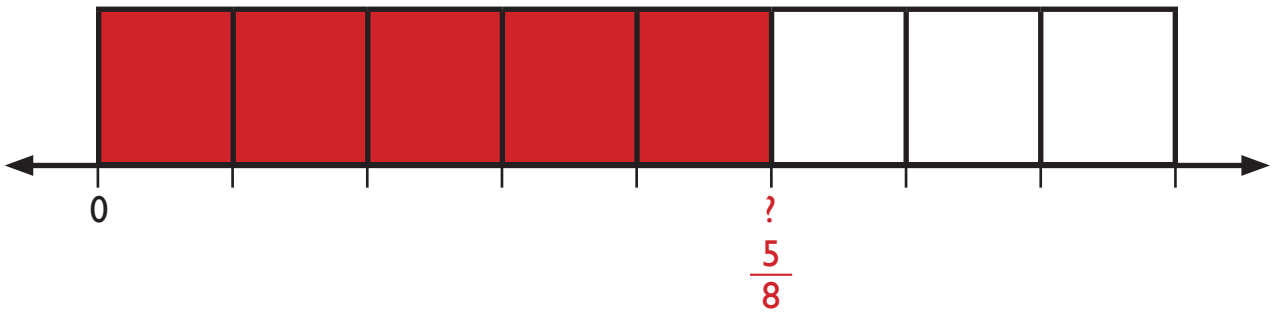
Examine the strip diagram. Shade the portion of the strip diagram that shows which fraction of the time the gate would not completely shut. Then write the fraction.



$\frac{1}{4}$

8 "That's not weird enough," said Wacky Luna. So they keep the old gate. But now the entrance is the exit and the exit is the entrance. So, if you walk in, you're outside, but, if you walk out, you're in the park! Most people are confused. $\frac{5}{8}$ of people are confused, but the other $\frac{3}{8}$ of people understand.

Shade the strip diagram to show the fraction of people who are confused. Then draw a question mark on the point on the number line that shows the number of people who are confused. (Because this is really confusing.) Label the point with a fraction.



KAYA'S WEIRD WIDE WORLD (PG. 1 OF 3)

Directions: Kaya's Weird Wide World is the strangest traveling fair around. But that isn't good enough for Kaya. She wants to have the strangest fair in the world! So she and her best friend Wacky Luna decide to make some changes. You're going to help. Follow the directions in each problem to show what things used to be like and what changed.

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Use unit fractions to write an equation that shows the number of times that it dumps fish on your head.

_____

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Use unit fractions to write an equation that shows the number of winning boats as a sum of unit fractions.

_____

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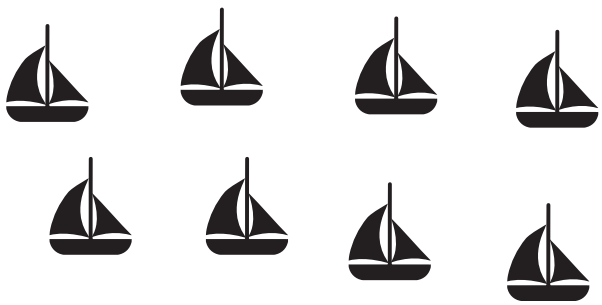
Draw a ring around the fraction of boats that win a mousy surprise. Then decompose $\frac{6}{8}$ three different ways.



Decompose $\frac{6}{8}$ here.

7 The entrance to Kaya's old fair was a beautiful old iron gate. It made a great big *CLANG!* sound each night when Kaya shut it. But it was very, very old, so it did not work very well. The strip diagram below shows how often the gate would not shut all the way.

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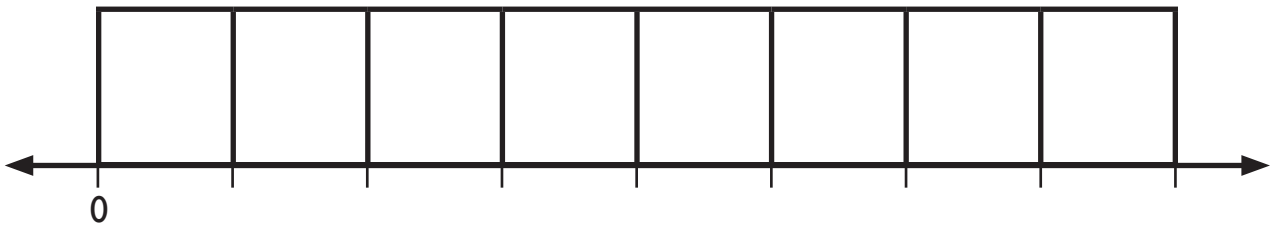

DON'T BE PUNNY!

TEKS | **SS:** 3.3A, 3.3B, 3.3C, 3.3D

Topics: Comparing Fractions & Equivalent Fractions

WHAT IT'S ALL ABOUT!

Don't Be Punny! asks students to solve fraction inequalities in order to reveal the answer to a corny joke. The fractions differ either in numerator or denominator, but not both.

IT'S A SETUP!

- ☐ Copy **Don't Be Punny!** (PG. 92) for each student.

Hand out materials.

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DON'T BE PUNNY! ANSWER KEY

Directions: Solve the inequality by writing > or <. Your answer will match a letter that you can put into the puzzle. Put the letter above the number of the problem. For example, put the answer for Problem #6 on the line above the number 6. When you have solved them all, you will have the answer to the joke below!

What did the left eye say to the right eye?

B	e	t	w	e	e	n		u	s	,
4	13	6	1	13	13	9		8	12	

s	o	m	e	t	h	i	n	g		s	m	e	l	l	s	!
12	3	5	13	6	2	11	9	10		12	5	13	7	7	12	

1	$\frac{1}{3} < \frac{2}{3}$	> R	< W
2	$\frac{5}{6} < \frac{6}{6}$	> G	< H
3	$\frac{3}{6} > \frac{3}{8}$	> O	< U
4	$\frac{2}{3} > \frac{2}{4}$	> B	< E
5	$\frac{1}{8} < \frac{2}{8}$	> N	< M
6	$\frac{3}{4} > \frac{2}{4}$	> T	< P
7	$\frac{1}{4} < \frac{1}{2}$	> W	< L
8	$\frac{2}{8} < \frac{2}{6}$	> S	< U
9	$\frac{1}{4} > \frac{1}{6}$	> N	< D
10	$\frac{2}{4} < \frac{2}{2}$	> H	< G
11	$\frac{5}{6} > \frac{5}{8}$	> I	< A
12	$\frac{3}{3} > \frac{3}{4}$	> S	< F
13	$\frac{5}{6} > \frac{4}{6}$	> E	< Y

14. Draw a picture and explain why $\frac{1}{4}$ is less than $\frac{1}{3}$.
Fourths are smaller than thirds because the whole is divided into more parts and the parts are smaller. So $\frac{1}{4}$ is less than $\frac{1}{3}$.

15. Draw a picture and explain why $\frac{6}{8}$ is greater than $\frac{4}{8}$.
All the parts are the same size. There are more eighths in $\frac{6}{8}$ than there are in $\frac{4}{8}$.

16. Write a fraction that is greater than $\frac{4}{6}$ and that has the same denominator.
$\frac{5}{6}$ or $\frac{6}{6}$

17. Write a fraction than is less than $\frac{2}{3}$ and that has the same denominator.
$\frac{1}{3}$

18. Write a fraction that is less than $\frac{2}{4}$ and has the same numerator.
$\frac{2}{6}$ or $\frac{2}{8}$

19. Write a fraction that is greater than $\frac{3}{6}$ and has the same numerator.
$\frac{3}{4}$ or $\frac{3}{3}$

DON'T BE PUNNY!

Directions: Solve the inequality by writing > or <. Your answer will match a letter that you can put into the puzzle. Put the letter above the number of the problem. For example, put the answer for Problem #6 on the line above the number 6. When you have solved them all, you will have the answer to the joke below!

What did the left eye say to the right eye?

4	13	6	1	13	13	9		8	12									
12	3	5	13	6	2	11	9	10		12	5	13	7	7	12			

1	$\frac{1}{3}$ ◯ $\frac{2}{3}$	> R	< W
2	$\frac{5}{6}$ ◯ $\frac{6}{6}$	> G	< H
3	$\frac{3}{6}$ ◯ $\frac{3}{8}$	> O	< U
4	$\frac{2}{3}$ ◯ $\frac{2}{4}$	> B	< E
5	$\frac{1}{8}$ ◯ $\frac{2}{8}$	> N	< M
6	$\frac{3}{4}$ ◯ $\frac{2}{4}$	> T	< P
7	$\frac{1}{4}$ ◯ $\frac{1}{2}$	> W	< L
8	$\frac{2}{8}$ ◯ $\frac{2}{6}$	> S	< U
9	$\frac{1}{4}$ ◯ $\frac{1}{6}$	> N	< D
10	$\frac{2}{4}$ ◯ $\frac{2}{2}$	> H	< G
11	$\frac{5}{6}$ ◯ $\frac{5}{8}$	> I	< A
12	$\frac{3}{3}$ ◯ $\frac{3}{4}$	> S	< F
13	$\frac{5}{6}$ ◯ $\frac{4}{6}$	> E	< Y

14. Draw a picture and explain why $\frac{1}{4}$ is less than $\frac{1}{3}$.

15. Draw a picture and explain why $\frac{6}{8}$ is greater than $\frac{4}{8}$.

16. Write a fraction that is greater than $\frac{4}{6}$ and that has the same denominator.

17. Write a fraction than is less than $\frac{2}{3}$ and that has the same denominator.

18. Write a fraction that is less than $\frac{2}{4}$ and has the same numerator.

19. Write a fraction that is greater than $\frac{3}{6}$ and has the same numerator.

GEOMETRY AND THE EARTH

TEKS RS: 3.6A SS: 3.6B

Topic: Geometry

IT'S A SETUP!

- ☐ Copy **Geometry and the Earth Directions** (PG. 96) for each group.
- ☐ Copy **Geometry and the Earth Geometry Categories** (PG. 97) for each group.
- ☐ Copy **Geometry and the Earth Geometric Shapes** (PG. 98) for each group.
- ☐ Other Materials
  - □ **Poster paper**: 1 sheet for every 3 students
  - □ **Markers** or **crayons**
  - □ **Glue sticks**
  - □ **Scissors**

1. Place students in groups of 3 and hand out materials.
2. Discuss **Geometry and the Earth Directions**. Students will create a scene using the directions. Then they cut out the **Geometry Categories** and glue them to each landform according to the directions. Finally, they name the **Geometric Shapes** and glue them by the categories that they match.

HEY—LOOK HERE!

This math activity includes a review of Social Studies 3.4A: Describe and explain variations in the physical environment, including ~~climate~~, landforms, ~~natural resources~~, and ~~natural hazards~~. (mountains, deltas, plains, deserts, canyon).

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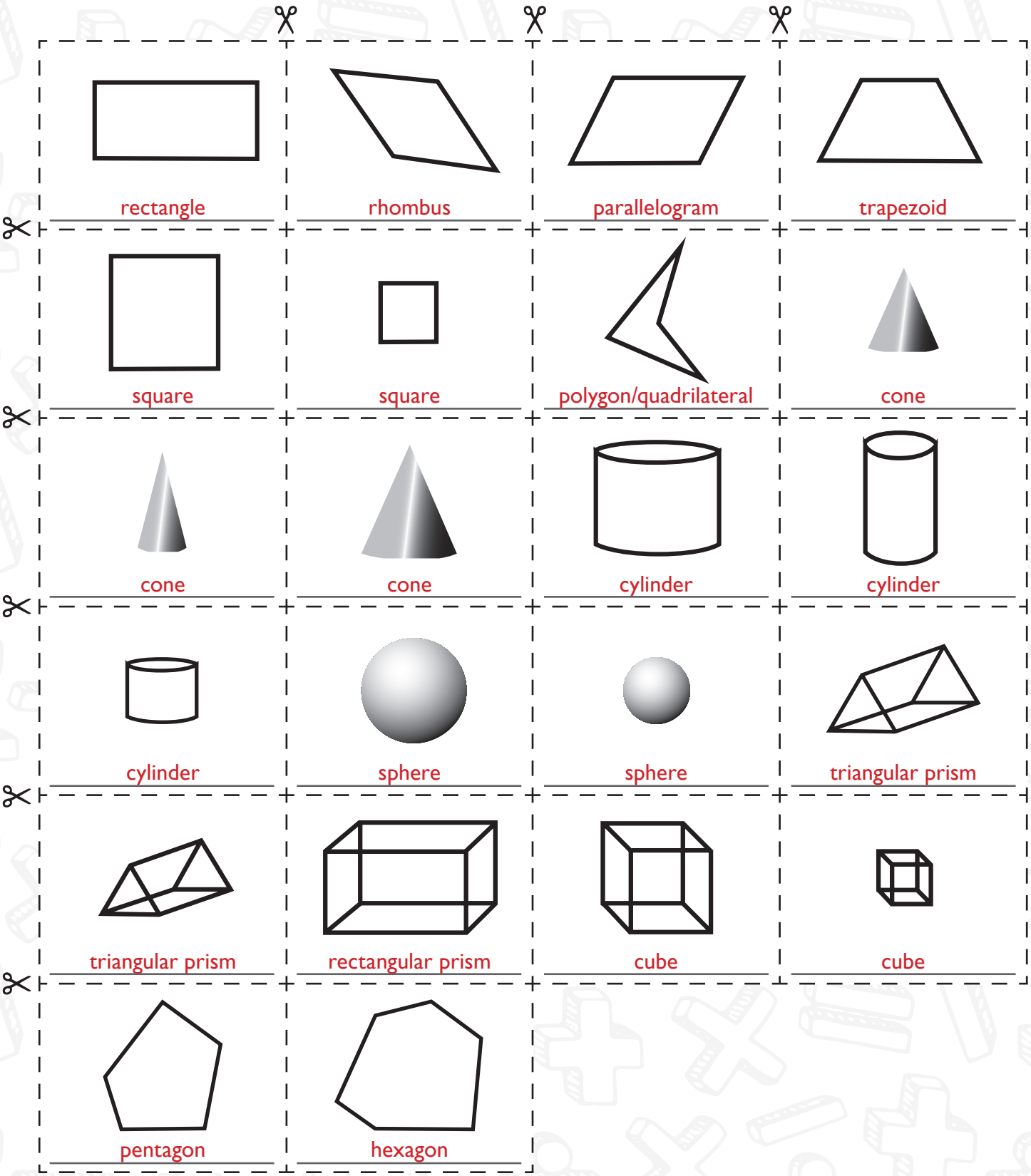
GEOMETRY AND THE EARTH ANSWER KEY

Use this chart to grade your students' scenes.

														
I am 3D. I have only one vertex.							•							
I am 3D. All of my faces are the same size, including my bases.								•				•		
I am 3D. Some of my faces are curved.							•	•	•					
I am 3D. My base is a rectangle.											•	•		
I am 3D. Some of my faces are triangles.										•				
I am 3D. My base(s) are circles.							•	•						
I am 3D. I am shaped like a ball.									•					
I am 3D. All of my edges are the same length.												•		
I am 2D. All of my sides are the same length.		•			•									
I am 2D. My opposite sides are congruent.	•		•		•									
I am a polygon and I'm not very special. ☹						•								
I am a polygon. I have 2 bases. My bases are not the same length.				•										
I have 5 sides.													•	
I have 6 sides.														•

ANSWER KEY

Directions: Write the name of each shape. Then cut the shape cards on the dotted lines and glue them on your poster.



Directions:

1. Draw and color a scene on your poster paper. Be sure to use the whole paper. Label each item. Your scene should include these items:
    - ☐ Mountain
    - ☐ Delta
    - ☐ River (Draw 2 rivers.)
    - ☐ Plains
    - ☐ Desert (Be sure to include a cactus.)
    - ☐ Canyon
    - ☐ Sun
2. Once you have drawn your scene, it's time to add the geometry. Cut out the **Geometry Categories** and glue them on the correct landforms.
3. Now find the page called **Geometric Shapes**. Use geometry vocabulary to name each shape. Then cut the cards out on the dotted line and glue them by their correct categories. Some of the categories will apply to more than one shape.

I am 3-dimensional. I have only one vertex.

Glue this label to the top of the mountain.

I am 3-dimensional. All of my faces are the same size, including my bases.

Glue this label to the canyon.

I am 3-dimensional. Some of my faces are curved.

Glue this label to the base of the mountain.

I am 3-dimensional. My base is a rectangle.

Glue this label to a cactus in your desert.

I am 3-dimensional. Some of my faces are triangles.

Glue this label in the desert.

I am 3-dimensional. My base(s) are circles.

Glue this label near the sun.

I am 3-dimensional. I am shaped like a ball.

Glue this label near the sun.

I am 3-dimensional. All of my edges are the same length.

Glue this label in the desert.

I am 2-dimensional. All of my sides are the same length.

Glue this label in the river.

I am 2-dimensional. My opposite sides are congruent.

Glue this label in the plains.

I am 2-dimensional. My opposite sides are congruent.

Glue this label in the delta.

I am 2-dimensional and I'm not very special. ☹

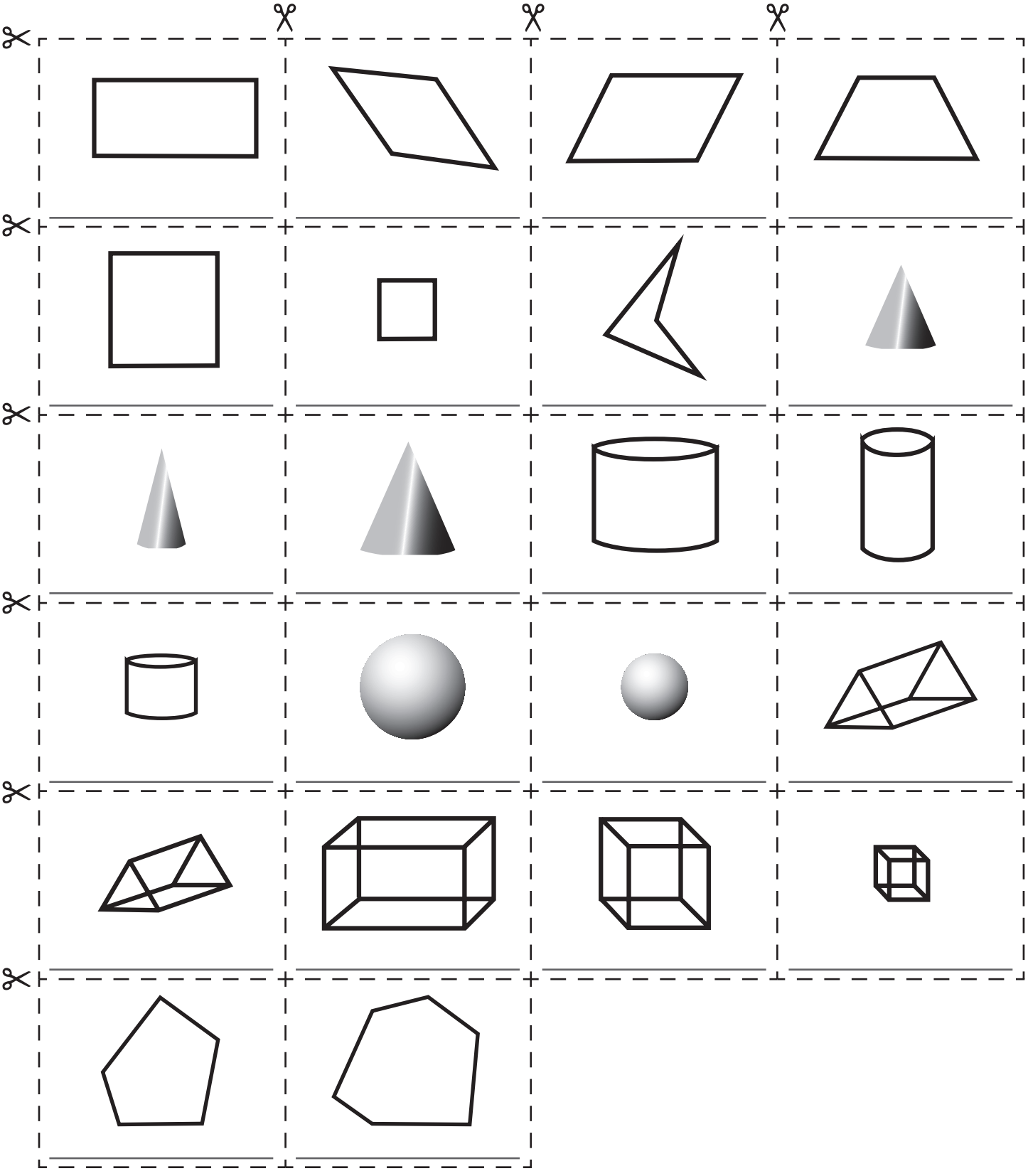
Glue this label in the sky.

I am a polygon. I have 2 bases. My bases are not the same length.

Glue this label in the desert.

GEOMETRY AND THE EARTH
GEOMETRIC SHAPES

Directions: Write the name of each shape. Then cut the shape cards on the dotted lines and glue them on your poster.



CAN-CAN, THE SOUP MAN!

TEKS RS: 3.6C, 3.7B SS: 3.6D

Topics: Area & Perimeter

WHAT IT'S ALL ABOUT!

In this activity, students find the area and perimeter of parts of a garden. Then they use those parts to create the composite area gardens and find their areas and perimeters.

IT'S A SETUP!

- ☐ Make one-sided copies of **Can-Can, the Soup Man!** (PG. 102) for every 2–3 students.
- ☐ Copy Can-Can the Soup Man! Journal (PG. 103) for every 2 students. Cut apart.
- ☐ Other Materials (per group):
  - ☐ **1" grid paper** (PG. 120): approximately 3 sheets for each group
  - ☐ **1" square tiles**
  - ☐ **Ruler**
  - ☐ **Scissors**
  - ☐ **Glue sticks**
  - ☐ **Construction paper**

Hand out materials. Students work together to build a model for each type of bean, draw the models on grid paper, and fill in the table. Then they will cut out each bean, make 3 gardens (composite area), and find the area and perimeter of the gardens.

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CAN-CAN, THE SOUP MAN! ANSWER KEY

Directions (Step 1): Can-Can, the Soup Man, has a plan for 6-bean soup. But the beans have to be very fresh. Help him design gardens so he can grow the beans himself.

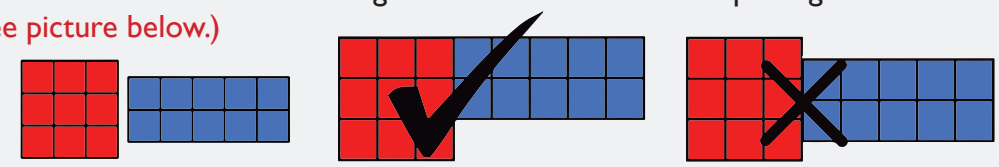
1. Use square tiles to model each type of bean in the garden.
2. Draw the models on grid paper. Label each model with type of bean, area, and perimeter.
3. Fill in the chart with the information from your models. Cut out the chart and glue it onto construction paper.

Garden Data

Type of Bean	Number of Squares per Row	Number of Rows	Area	Perimeter
Wacky Beans	3	3	9	12
Lucky Beans	8	1	8	18
Jelly Beans	3	5	15	16
Crazy Beans	2	8	16	20
Jumping Beans	2	2	4	8
Lazy Beans	4	4	16	16

Directions (Step 2): Now you are going to set up Can-Can's garden.

1. Cut out each type of bean on the grid paper.
2. Combine the beans to make the three gardens listed below. Line up the gardens so that the grid lines match. (See picture below.)



3. Glue the gardens on construction paper.
4. Trace the sides of each garden. Label each whole garden with its area and perimeter.
5. Cut out the journal question and glue it to the bottom of the construction paper. Then answer the question.

Garden #1: Wacky Beans and Lazy Beans

Garden #2: Lucky Beans and Crazy Beans – Make the LONGEST garden you can.

Garden #3: Jumping Beans and Jelly Beans – Make the SMALLEST garden you can.

Think! Think! Think!

If you move the parts of the garden around, does the area change? Does the perimeter change? Why?

The area does not change. The number of square feet does not change.

The perimeter changes based on how long or how short the garden is. Long gardens have a longer perimeter. Shorter gardens have a shorter perimeter.

CAN-CAN, THE SOUP MAN!

Directions (Step 1): Can-Can, the Soup Man, has a plan for 6-bean soup. But the beans have to be very fresh. Help him design gardens so he can grow the beans himself.

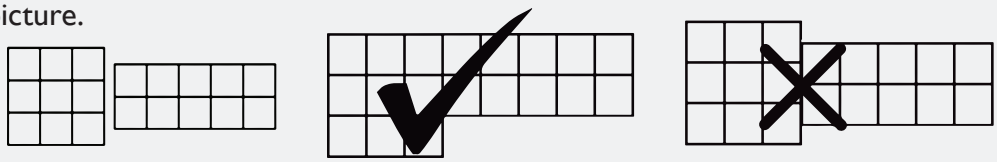
1. Use square tiles to model each type of bean in the garden.
2. Draw the models on grid paper. Label each model with type of bean, area, and perimeter.
3. Fill in the chart with the information from your models. Cut out the chart and glue it onto construction paper.

Garden Data

Type of Bean	Number of Squares per Row	Number of Rows	Area	Perimeter
Wacky Beans	3	3		
Lucky Beans	8			18
Jelly Beans	3	5		
Crazy Beans		8		20
Jumping Beans	2		4	
Lazy Beans	4			16

Directions (Step 2): Now you are going to set up Can-Can's garden.

1. Cut out each type of bean on the grid paper.
2. Combine the beans to make the three gardens listed below. Line up the gardens so that the grid lines match. See picture.



3. Glue the gardens on construction paper.
4. Trace the sides of each garden. Label each whole garden with its area and perimeter.
5. Cut out the journal question and glue it to the bottom of the construction paper. Then answer the question.

Garden #1: Wacky Beans and Lazy Beans

Garden #2: Lucky Beans and Crazy Beans – Make the LONGEST garden you can.

Garden #3: Jumping Beans and Jelly Beans – Make the SMALLEST garden you can.

Think! Think! Think!

If you move the parts of the garden around, does the area change? Does the perimeter change? Why?

THE CANDY CARNIVAL COMES TO TOWN

TEKS RS: 3.8A SS: 3.8B

Topic: Data

WHAT IT'S ALL ABOUT!

This activity is all about students creating charts using data and understanding the charts they've created. Students will be asked to take data from one form and represent it in another, as well as to answer questions about the data. The math here is very simple, as the focus should be on reading and interpreting the data rather than calculating with it.

IT'S A SETUP!

- ☐ Copy **The Candy Carnival Comes to Town Data** (PG. 108).
- ☐ Copy **The Candy Carnival Comes to Town** (PGS. 109–111).
- ☐ Other Materials:
  - □ **Scratch paper**
  - □ **Colored pencils** or **markers**

Hand out materials and place students in pairs. Students work together to solve the problems.

Back to the Table of **Contents** Table of **Standards**

THE CANDY CARNIVAL COMES TO TOWN (PG. 1 OF 3)

ANSWER KEY

Directions: Use the charts to answer the following questions.

1 **The Applebottom Family Rides** table shows how many times a member of the Applebottom family rode a ride at the Candy Carnival. Your job is to take the data from that chart and turn it into a pictograph. You may use any picture you like. Then answer the questions.

** Each picture means 2 rides.

The Applebottom Family Does the Attractions!									
Fudge Ball Ferris Wheel	*	*							
Chocolate Lake Boat Ride	*	half the image							
Peanut Butter Pyramid Roller Coaster	*	*	*	half the image					
Cotton Candy Carousel	*	*	*	*					

Question 1: The chart does not tell us who rode which ride. It also does not tell us how many times each person rode the ride. However, we can tell from the chart that all 4 members of the Applebottom family did not ride one of the rides. Which ride was DEFINITELY not ridden by the entire family? Chocolate Lake Boat Ride

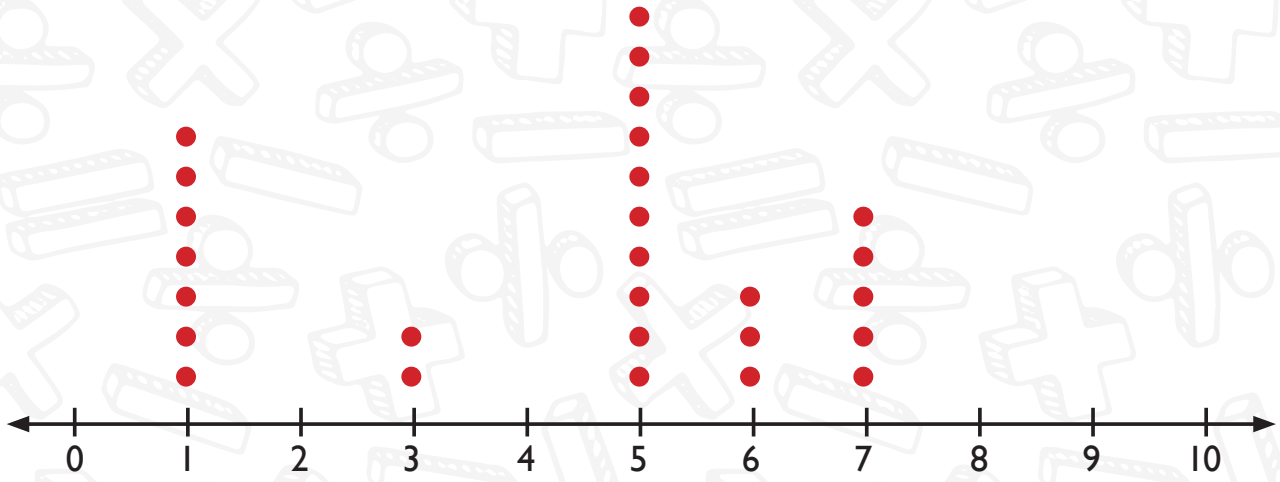
Question 2: Which ride MIGHT have been ridden by each member of the family twice? Cotton Candy Carousel

Question 3: If the Peanut Butter Pyramid Roller Coaster ride lasts 4 minutes, how long would it take for one person to ride it the number of times indicated by the data? 28 minutes

Question 4: How many rides did the Applebottom Family ride altogether? 22 rides

ANSWER KEY

2 The **Candy Concessions Frequency Table** shows how many times each sweet treat at the Candy Carnival was purchased. Your job is to create a dot plot to represent the data in the table. Then answer the questions.



Question 1: How much more money did the Candy Concession stand earn on Ice Cream Sundaes than Cotton Candy? $29

Question 2: Angel has enough to buy 1 of everything. How much money does he have? $22

Question 3: Which earned more money for the Candy Concession stand – the candy bars or the cotton candy? By how much? Candy bars; by $1

ANSWER KEY

3 The **Riders on the Candy Carousel** bar graph represents the 3 things you can ride at the carousel: a candy cane, a chocolate bar, and a piece of chewing gum. The graph shows what each person rode last Thursday afternoon. Your job is to use the data to fill in the frequency table and answer the questions.

Seats on the Candy Carousel Frequency Table	
Candy Cane	𝍸 II
Chocolate Bar	𝍸 IIII
Chewing Gum	𝍸 I

Question 1: How many more children rode the most popular seat on the carousel than rode the least popular seat? 4

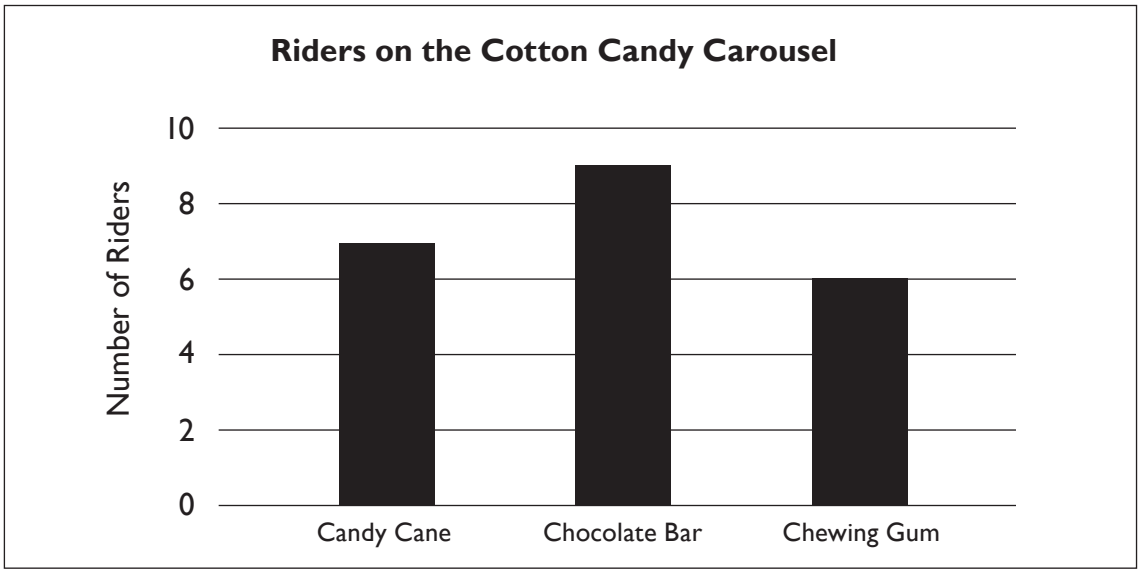
Question 2: How many children rode the carousel in all? 22

Question 3: If the number of children who sat in the chocolate bar seat all rode the carousel again, and no one else did, how many children rode the carousel in all? 31

THE CANDY CARNIVAL COMES TO TOWN DATA

The Applebottom Family Rides	
Name of Ride	**Number of Times the Family Rode**
Fudge Ball Ferris Wheel	𝍸
Chocolate Lake Boat Ride	𝍸
Peanut Butter Pyramid Roller Coaster	𝍸 𝍸
Cotton Candy Carousel	𝍸 𝍸

Candy Concessions Frequency Table		
	Cost ($)	**Number of Times Purchased**
Candy Bar	1	𝍸 𝍸
Cotton Candy	3	𝍸
Chocolate Popcorn	5	𝍸 𝍸
Milkshake	6	𝍸
Ice Cream Sundae	7	𝍸



THE CANDY CARNIVAL COMES TO TOWN (PG. 1 OF 3)

Directions: Use the charts to answer the following questions.

1 **The Applebottom Family Rides** table shows how many times a member of the Applebottom family rode a ride at the Candy Carnival. Your job is to take the data from that chart and turn it into a pictograph. You may use any picture you like. Then answer the questions.

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Question 2: Which ride MIGHT have been ridden by each member of the family twice? _

_____

Question 3: If the Peanut Butter Pyramid Roller Coaster ride lasts 4 minutes, how long would it take for one person to ride it the number of times indicated by the data? _____

_____

Question 4: How many rides did the Applebottom Family ride altogether? _____

_____

2 The **Candy Concessions Frequency Table** shows how many times each sweet treat at the Candy Carnival was purchased. Your job is to create a dot plot to represent the data in the table. Then answer the questions.

Question 1: How much more money did the Candy Concession stand earn on Ice Cream Sundaes than Cotton Candy? _____

Question 2: Angel has enough to buy 1 of everything. How much money does he have? __

_____

Question 3: Which earned more money for the Candy Concession stand – the candy bars or the cotton candy? By how much? _____

3 The **Riders on the Candy Carousel** bar graph represents the 3 things you can ride at the carousel: a candy cane, a chocolate bar, and a piece of chewing gum. The graph shows what each person rode last Thursday afternoon. Your job is to use the data to fill in the frequency table and answer the questions.

Seats on the Candy Carousel Frequency Table	
Candy Cane	
Chocolate Bar	
Chewing Gum	

Question 1: How many more children rode the most popular seat on the carousel than rode the least popular seat? _____

Question 2: How many children rode the carousel in all? _____

Question 3: If the number of children who sat in the chocolate bar seat all rode the carousel again, and no one else did, how many children rode the carousel in all? _____

ANISA AND HER BEAR

TEKS | **RS:** 3.5E

Topic: Input–Output Tables

WHAT IT'S ALL ABOUT!

This activity has students complete input–output tables in order to examine additive and multiplicative relationships. Because the processes are complicated and can seem unintuitive, the situations have been kept very simple. For students that have trouble grasping the relationships, this is quite a lot of math, so be sure to allot ample time. This problem set is slightly shorter for that reason.

IT'S A SETUP!

- ☐ Copy **Anisa and Her Bear** (PGS. 116–118). for every 2–3 students.
- ☐ Optional Materials: **counters**

Put students in groups of 2–3 and have them work together to complete the activity.

Back to the Table of **Contents** Table of **Standards**

ANISA AND HER BEAR (PG. 1 OF 3) ANSWER KEY

Directions: Read the situations below. Then solve the problems.

1 Anisa has a pet bear named Bear. They play in the woods together for 3 hours each Saturday. Fill in the table to show the number of hours they play on Saturdays.

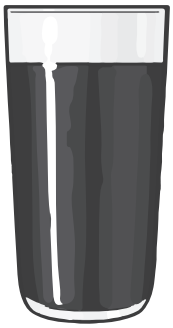
Saturdays	Hours
1	3
2	6
3	9
4	12

If Anisa and Bear have played on 12 Saturdays, how many hours have they played? 36

Anisa and Bear have played 3 times as many hours as Saturdays.

2 Anisa's bear loves chocolate milk. Whenever Bear wants a glass, Anisa walks 9 feet from the refrigerator to Bear's bed to give it to him. Fill in the table to show number of feet Anisa walks.

Glasses of Chocolate Milk	Feet Anisa Walks
1	9
3	27
4	36
6	54



How many glasses of milk does Bear drink if Anisa walks 81 feet? 9

3 Anisa and Bear both like to swim, but the water is SO COLD! Bear likes the cold, so he stays in a little longer. The table below compares the number of minutes that Bear swims and the number of minutes Anisa swims. Fill in the table to show the number of minutes Anisa swims compared to the number of minutes Bear swims.

Minutes Bear Swims	Minutes Anisa Swims
15	10
30	25
45	40
60	55

How many fewer minutes does Anisa swim than Bear? 5

If Anisa swims for 35 minutes, how many minutes does Bear swim? 40

4 Bear eats 5 times as much as Anisa. Fill in the table to show the amount of food Bear eats.

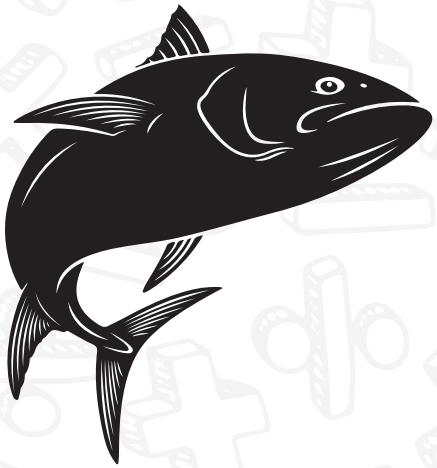
Amount Anisa Eats (ounces)	Amount Bear Eats (ounces)
1	5
2	10
5	25
6	30

How many ounces does Bear eat if Anisa eats 8 ounces? 40

How many ounces does Anisa eat if Bear eats 40 ounces? 8

5 Anisa and Bear grew up together. But Bear has always been much, much taller, even when they were babies. No matter how much Anisa grows, Bear is taller than she is. Fill in the table to show Anisa and Bear's height.

Anisa's Height (in.)	Bear's Height (in.)
18	35
25	42
36	53
51	68



If Anisa grows up to be 66 inches tall, how tall will Bear be? 83 inches

When Anisa turned 15 years old, she was 60 inches tall. How tall was Bear? 77 inches

6 Whenever Anisa and her bear go fishing, Bear always catches more fish. Bears are much better at fishing than people are.

Number of Fish Bear Catches	Number of Fish Anisa Catches
8	1
16	2
48	6
56	7

Fill in the statement.

Bear catches 8 times as many fish as Anisa does.

ANISA AND HER BEAR (PG. 1 OF 3)

Directions: Read the situations below. Then solve the problems.

1 Anisa has a pet bear named Bear. They play in the woods together for 3 hours each Saturday. Fill in the table to show the number of hours they play on Saturdays.

Saturdays	Hours
1	3
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3	9
4	

If Anisa and Bear have played on 12 Saturdays, how many hours have they played? _____

Anisa and Bear have played _____ times as many hours as Saturdays.

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Glasses of Chocolate Milk	Feet Anisa Walks
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4	36
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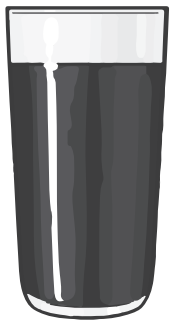

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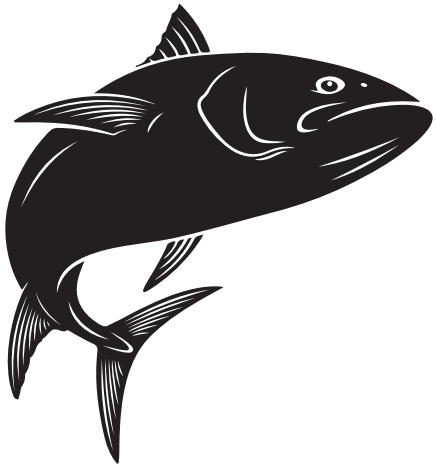

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Fill in the statement.

Bear catches _____ times as many fish as Anisa does.

CM GRID PAPER