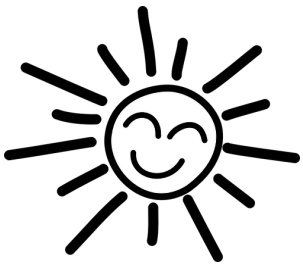
Entering 4th Grade

Summer Math Work

WCS

Name: _____

Dear Families,



It is so important for children to keep learning over the summer! Research shows that students can lose up to 2.6 months of math learning during the summer months. 2 hours of work each week in math can help prevent this summer learning loss. This packet will be your child's first math grade of the year and is due when we return in the fall.

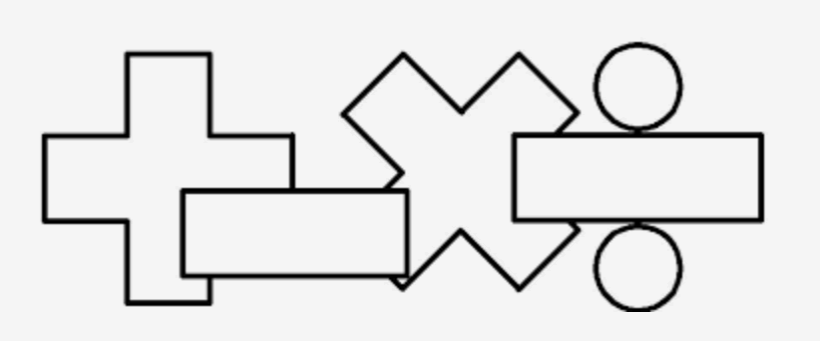
In this packet, you will find 10 weeks of work, about 2 hours of work each week. We suggest you create a schedule that works for your family each week. Maybe you spend 15-30 minutes in the mornings working on this math work each day or maybe your child completes it all on Sunday evenings-- whatever works for you. Please do try to spread it over 10 weeks- don't try to do it all the last week of summer!

Directions are on the following page.

Happy summer!

Directions

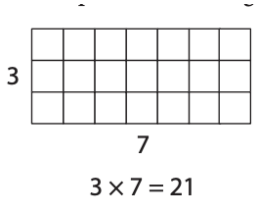
1. Read the student and family page each week.
2. Try the activity of the week.
3. Complete the math pages.

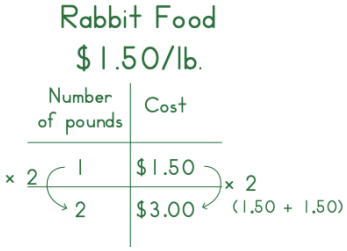


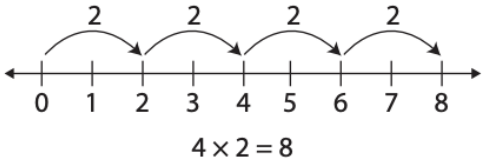
New 4th graders should..	Families should...
❏ Talk to your family about completing the activity of the week. Write or draw about what you did. ❏ Do your math pages each week. Make sure you show your work!	❏ Talk to your child about the math they are doing. There are questions you can ask on the family instruction page and activities to do together as a family. ❏ Reach out to Mr. Jack with any questions!

Week 1

I can... multiply using different strategies.







Array Ratio Table Number line

For Families

Understanding the math: In third grade, your child learned many strategies for multiplying. The array model is the most emphasized one. Arrays help students see the multiplication fact in an organized way. It also helps them see the relationship of multiplication facts. For example, in the array above, a student could simply count all the squares to find the total. Or they could use what they know about other multiplication facts. Perhaps they know 3x5 and 3x2 (or can easily skip count). They can split their array into those two smaller arrays and then add to find the total (15+6=21). This will be incredibly helpful when they are trying to multiply much larger numbers in 4th grade and helps them better understand area.

Resources:

-There are a few online tools that can help students build arrays and number lines. You can find an array maker here: https://apps.mathlearningcenter.org/partial-product-finder/ and a digital numberline here: https://apps.mathlearningcenter.org/number-line/

Questions to Ask Your Child :

-What strategy can you use to solve this problem?

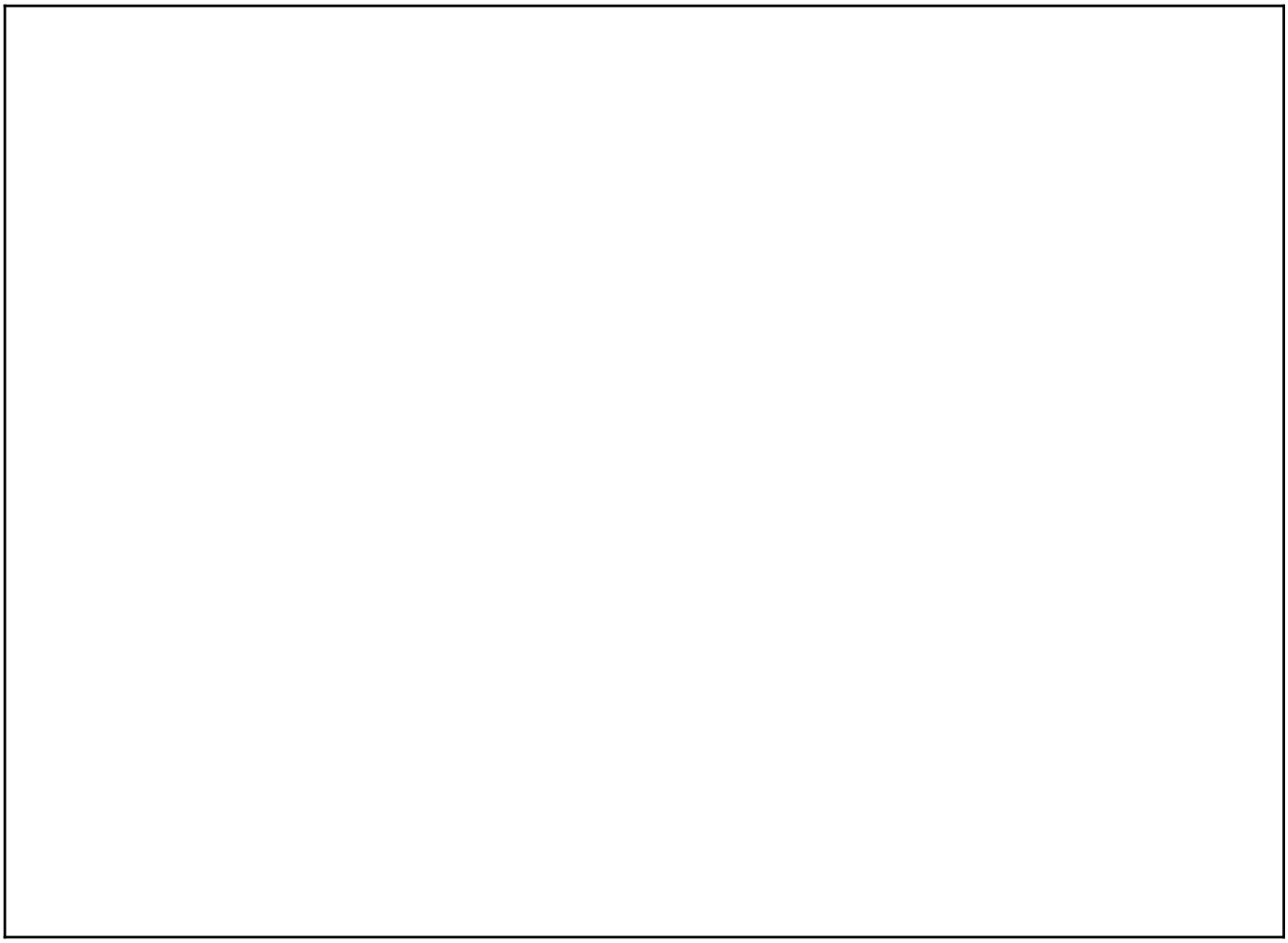
-Can you use what you know about smaller facts to help you figure out this problem?

-Can you build an array to represent _____?

-How could you break apart that array to make it easier to find the total?

Activity of the Week

Make your own flash cards! All you need is paper cut into rectangles. Write all the multiplication facts you can with the solution on the back. Practice in the car, on the bus, when you're bored-- whenever! Try to add more facts once you learn all the ones you have. Write a list below of some of the facts you have memorized!



Complete the following price lists.

Dog Collars $3 each	
Number of Collars	**Cost**
1	$3
2	
	$9
4	
10	

Dog Toys $2 each	
Number of Toys	**Cost**
1	$2
2	
	$10
10	
20	$40

CHALLENGE Now, make up your own price list. Decide what items you are selling and how much each costs, and fill in the table.

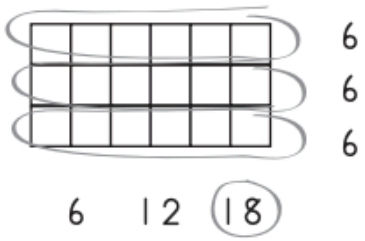
Title:	
Number of	**Cost**
1	

$3 \times 5 =$ _____ $5 \times 2 =$ _____ $7 \times 5 =$ _____

$6 \times 5 =$ _____ $4 \times 6 =$ _____ $9 \times 6 =$ _____

$4 \times 3 =$ _____ $3 \times 3 =$ _____ $8 \times 3 =$ _____

a How many squares are there in the array below?



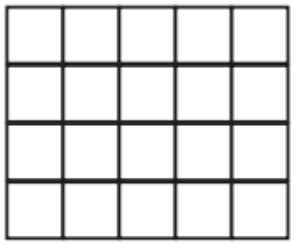
b **CHALLENGE** Write at least one equation that describes the array.

$6 \times 3 = 18$ $3 \times 6 = 18$

a How many squares are there in the array below?

b **CHALLENGE** Write at least one equation that describes the array.

a How many squares are there in the array below?



b **CHALLENGE** Write at least one equation that describes the array.

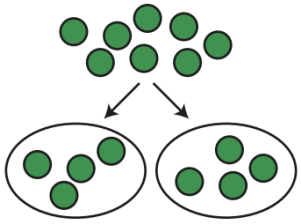
Complete the equations below.

$7 \times \_\_\_\_\_ = 35$ $\_\_\_\_\_ \times 6 = 9 \times 2$ $\_\_\_\_\_ = 10 \times 6$

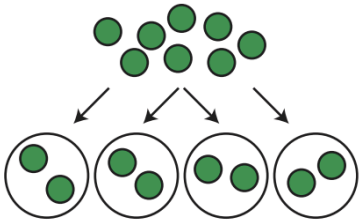
$5 \times 10 = \_\_\_\_\_ \times 2$ $3 \times \_\_\_\_\_ = 21$ $\_\_\_\_\_ \times 5 = 10 \times 3$

Week 2

I can... divide using different strategies.



Sharing interpretation
Here we interpret 8 ÷ 2 to mean 8 divided or shared evenly, as between two people.



Grouping interpretation
In this interpretation of 8 ÷ 2, we determine how many groups of 2 we can make with 8.

For Families

Understanding the math: Your child spent time understanding division this year. You will notice above two different interpretations of division. Either one is acceptable for your child to use! You also might be wondering, why teach all these strategies for multiplication and division? Why not just memorize? Students should have now begun to memorize their multiplication and division facts, however these strategies helped them get there and will help them with facts that they cannot memorize like 123x839! Learning these strategies strengthens their number sense and helps their math brains continue to grow!

Resources:
-This simple counter tool can help your child solve division problems: https://apps.mathlearningcenter.org/number-frames/
-It also can be very helpful to actually use some physical manipulatives (like beads, rocks, or anything you have a lot of!) when dividing.

Questions to Ask Your Child :
-How many groups will you make? OR how many will be in each group?
-What is the quotient (the answer to a division problem for this problem)?

Activity of the Week

Create a collection! This could be seashells you find at the beach, cool leaves from the park, your toy cars, or rocks-- anything you can think of! Draw a picture of what you collected, then divide your collection into different groups and answer the questions

My collection has _____items.

Divide your collection into groups of....

	2	**5**	**10**	**3**
How many groups did you make?				
How many did you have left over?				

Divide.

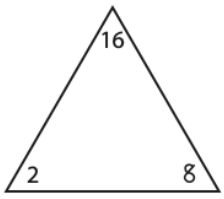
$90 \div 9 =$ _____ $36 \div 6 =$ _____ $40 \div 8 =$ _____

$45 \div 9 =$ _____ $48 \div 6 =$ _____ $100 \div 10 =$ _____

$49 \div 7 =$ _____ $36 \div 9 =$ _____ $60 \div 10 =$ _____

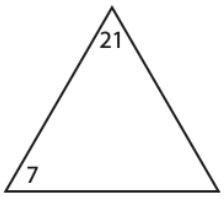
Fill in the missing number in each triangle. Then write the facts in the fact family.

ex



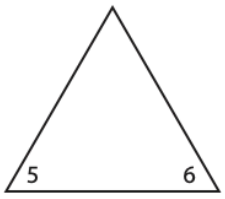
2 × 8 = 16
8 × 2 = 16
16 ÷ 2 = 8
16 ÷ 8 = 2

a



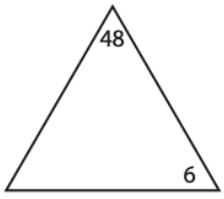
_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

b



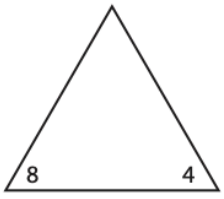
_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

c



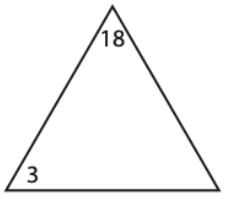
_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

d



_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

e



_____ × _____ = _____
_____ × _____ = _____
_____ ÷ _____ = _____
_____ ÷ _____ = _____

Fill in the blanks.

$3 \times \_\_\_\_\_ = 15$

$15 \div 3 = \_\_\_\_\_$

$28 \div 7 = \_\_\_\_\_$

$7 \times \_\_\_\_\_ = 28$

$\_\_\_\_\_ \times 4 = 24$

$24 \div \_\_\_\_\_ = 4$

$30 \div \_\_\_\_\_ = 5$

$\_\_\_\_\_ \times 5 = 30$

$3 \times 2 = \_\_\_\_\_$

$\_\_\_\_\_ \div 2 = 3$

$\_\_\_\_\_ = 8 \times 7$

$\_\_\_\_\_ \div 8 = 7$

$70 \div 7 = \_\_\_\_\_$

$21 \div 7 = \_\_\_\_\_$

$42 \div 7 = \_\_\_\_\_$

$35 \div 5 = \_\_\_\_\_$

$70 \div 10 = \_\_\_\_\_$

$28 \div 4 = \_\_\_\_\_$

$14 \div 2 = \_\_\_\_\_$

$56 \div 7 = \_\_\_\_\_$

$21 \div 3 = \_\_\_\_\_$

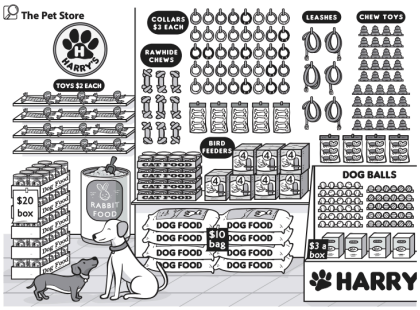
$49 \div 7 = \_\_\_\_\_$

$63 \div 9 = \_\_\_\_\_$

$7 \div 7 = \_\_\_\_\_$

Week 3

I can... solve multiplication and division word problems.



For Families

Understanding the math: Word problems can be particularly challenging for any age student and are particularly challenging for third and fourth graders. In these grades, students are expected to solve word problems using addition, subtraction, multiplication, and division and often the problems have multiple steps. One of the best ways you can help your child with word problems is by helping them visualize the problem. There are lots of ways to do this. You can physically act out the problem together. You can use a tool like counters. You can also have them draw a picture of what is happening. Once they can clearly visualize the problem, they can then focus on the math to solve it!

Resources:

Depending on the type of problem, your child could use any of these virtual tools:

-https://apps.mathlearningcenter.org/number-line/

-https://apps.mathlearningcenter.org/partial-product-finder/

-https://apps.mathlearningcenter.org/number-frames/

Questions to Ask Your Child :

- What do you know/don't know in this problem?
- Can you act out what is happening? Can you draw it?
- Can you write a number sentence to match this problem?
- What operation do you need to do to solve this problem?

Activity of the Week

Write your own multiplication or division problem! Make up a story problem that has multiplication or division. Write it down and draw a model of your problem. Remember that story problems have a question. Don't forget to find the answer!

Fill in the blanks.

$6 \times \_\_\_\_ = 42$	$42 \div 6 = \_\_\_\_$	$97 - \_\_\_\_ = 55$
$54 \div 6 = \_\_\_\_$	$6 \times \_\_\_\_ = 54$	$\_\_\_\_ \div 8 = 3$
$\_\_\_\_ + 87 = 101$	$101 - 87 = \_\_\_\_$	$3 \times 8 = \_\_\_\_$

Write an equation for each problem. Be sure to include the unit in your final answer. Show your thinking in words, numbers, or sketches. Use your math journal if you need more room.

a Jeremy is setting up for a party. He has 63 cookies. He puts 7 cookies on each plate. How many plates does he use?

Equation: _____ Final Answer: _____

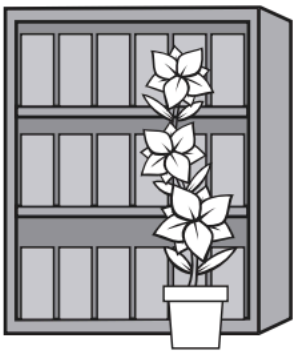
b Katina is helping to set up for the party. She puts 63 brownies on 7 different plates. How many brownies are on each plate?

Equation: _____ Final Answer: _____

Write a story problem for each of these equations.

$12 \times 4 = 48$	$48 \div 4 = 12$

1 Mr. Jackson got some new books for the library, all of which are the same size. He wants to display them for the students and teachers. He put the same number of books on each shelf, as you can see in the picture. How many books are displayed on the shelves in all? Show your work.



2 The students at Woodlawn love fantasy fiction, so Mr. Jackson ordered some popular series of fantasy books. There are 7 books in the series by one of the most popular fantasy authors. Mr. Jackson decided to buy 4 sets of that series for the library. The students liked those books so much that Mr. Jackson bought 4 sets of another series that includes 5 books. How many new fantasy books did Mr. Jackson buy in all? Show your work.

3 The students at Woodlawn love science, so Mr. Jackson bought a set of science books for them that included 10 different books. Five of the books were 3 inches thick, 3 were 2 inches thick, and 2 were 1 inch thick. How much space will he need to keep them together on the shelf? Show your work.

Week 4

I can... solve measurement problems.

For Families

Understanding the math: In third grade, students learned about capacity (gallons/liters/etc), weight (pounds/grams/etc) and length (feet/centimeters etc). In fourth grade they will expand on these skills and learn about relationships between measurements (for example there are 100 centimeters in a meter). In third grade they spent a lot of time solving word problems using measurement. You might notice that your child does not solve addition and subtraction problems the way you do. The method you probably use (the standard algorithm) is reliable if you do it correctly every time. We teach other methods because often students don't follow the steps every time. Using a numberline or other method helps strengthen students' understanding of numbers and their relationships and it is easier to notice mistakes. In fourth grade, they will be expected to use the standard algorithm, so it is okay to encourage your child to use it this summer!

Resources:

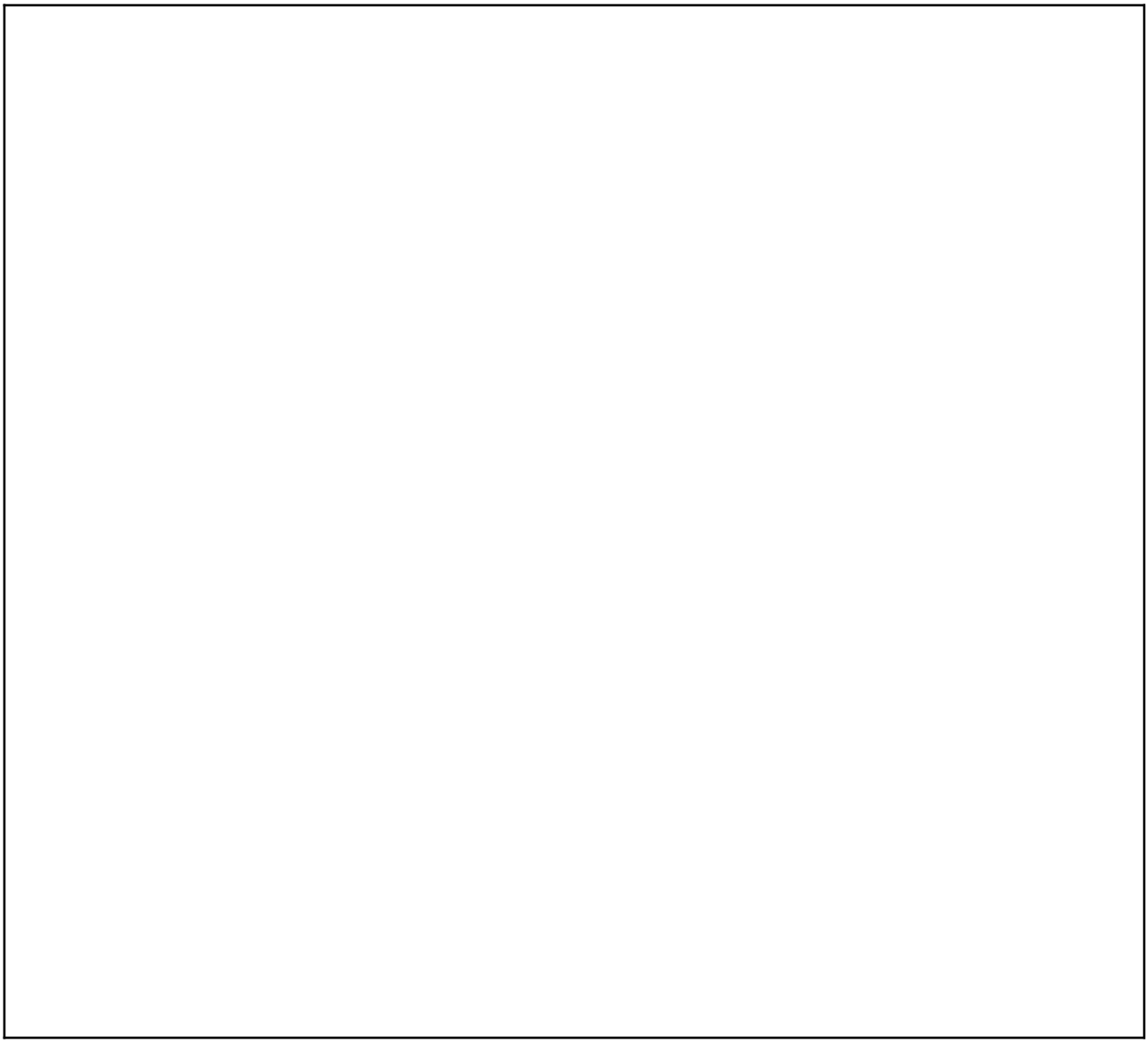
-Talk about measurement! Any time you are measuring something, whether for length or another form of measurement (cups of flour for a recipe, the weight of your produce at the grocery store), include your child!

Questions to Ask Your Child :

- What tool would you use to measure _____?
- About how heavy (or how long or how much volume) does _____ hold?
- What strategy can you use to solve this problem?

Activity of the Week

Throughout this week, look for ways your family uses measurement (the kitchen is one place measurement is often used!). Write or draw about one way you found.



A box of cereal has 10 servings. Each serving is 240 grams (g).

a How many grams of cereal are in the box? Show your work.

b Is that more or less than 2 kilograms? (Hint: 1 kilogram = 1,000 grams)

Circle the appropriate words to fill in the blanks.

a A work boot is heavy! I would measure its _____ with _____.

mass	length	volume	liters	kilograms	grams

b An elephant is tall. I would measure its _____ with _____.

mass	height	volume	centimeters	kilograms	meters

c A pencil box is short! I would measure its _____ with _____.

mass	length	volume	liters	centimeters	meters

d An eyedropper doesn't hold much. I would measure its _____ with _____.

mass	length	volume	liters	kilograms	milliliters

e A marking pen is light! I would measure its _____ with _____.

mass	length	volume	liters	kilograms	grams

f That pitcher holds lots. I would measure its _____ with _____.

mass	length	volume	liters	kilograms	meters

g An eel is long! I would measure its _____ with _____.

mass	length	volume	liters	kilograms	meters

h A pool holds lots of water! I would measure its _____ with _____.

mass	length	volume	liters	kilograms	meters

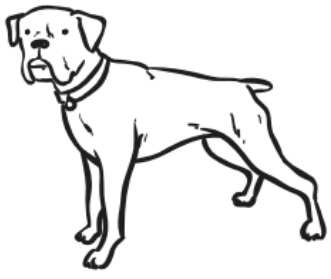
There were 5 lizards sitting on one side of a pan balance scale. Together, the lizards had a mass of 234 grams. One lizard with a mass of 25 grams got off the balance and a different lizard with a mass of 43 grams got on. Now, how much mass do the 5 lizards on the balance have?

The 5 lizards on the pan balance scale have a mass of _____.

There are 4 puppies and each puppy has a mass of about 3 kilograms. The mother dog has a mass that is 5 times as much as one of her puppies. How much mass do all 5 dogs—the 4 puppies and their mother—have together?

The 5 dogs together have a mass of _____.

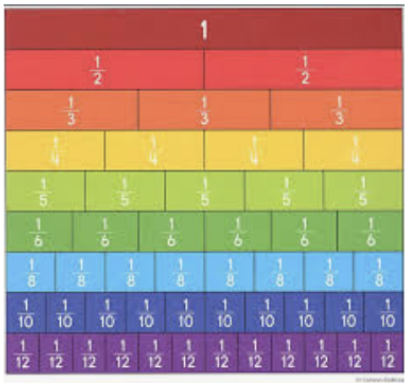
The dog's water dish had 23 milliliters of water. The owner added water so that there was 4 times that amount. The dog drank 39 milliliters of that water. How much water was left in the dish?



There was _____ of water left in the dish.

Week 5

I can... build and name fractions



For Families

Understanding the math: When you ask adults about their experience with fractions, many tell you they hated fractions! This is often because they didn't have a deep understanding of fractions before they tried to add, subtract, multiply, and divide them! In third grade, there was great time and care spent helping your child understand the meaning of fractions. In fourth grade, they will be asked to add, subtract, multiply, and find equivalent fractions. This strong foundation in third grade will help them be successful in fourth grade.

Resources:

-There are two online fraction tools you might want to use with your child:

1) In this one students build their own rectangle or circle pieces to create fractions. https://apps.mathlearningcenter.org/fractions/
2) In this one the pieces are made and labeled for them. https://toytheater.com/fraction-strips/

Questions to Ask Your Child :

-How many pieces will you divide ____ into?

-How many fourths make one whole? Two wholes?

- How do you know this shape is divided into eighths? (make sure your child recognizes that the size of each piece must be the same, not just that there are 8 pieces.)

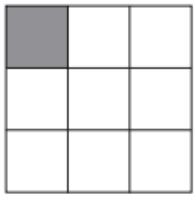
Activity of the Week

Build shapes out of playdoh, clay or sand OR paint or draw some shapes. Divide the shapes into halves, fourths, eighths, thirds, and sixths. Label one of each piece- so, one of the fourths would be ¼. Draw or write about what you did.

Divide each square into the number of pieces you need to model the fraction. Then shade in the correct amount.

ex $\frac{2}{8}$ 	**a** $\frac{2}{4}$
b $\frac{3}{4}$	**c** $\frac{2}{3}$
d $\frac{4}{8}$	**e** $\frac{6}{8}$

Fill in the shapes to show each fraction.

ex $\frac{1}{9}$ 	**a** $\frac{1}{3}$	**b** $\frac{1}{10}$
c $\frac{1}{4}$	**d** $\frac{1}{5}$	**e** $\frac{1}{4}$

Use your double number line to model the word problems below. Then sketch your solution on the number line. Write an equation to explain your thinking.

a Today you jogged $\frac{1}{3}$ of a mile before stopping to chat for a moment with your friend. Then you continued to jog another $\frac{1}{3}$ of a mile before stopping for a drink of water. How far did you jog in all?

b During P.E., teams of 3 people run a relay. Each person runs $\frac{1}{4}$ of the way around the track. Where does the race end?

c My mom bought a long length of ribbon to make bows for my sister and me. We each get $\frac{2}{6}$ of the ribbon. How much of the total ribbon is used?

Week 6

I can... compare fractions.

For Families

Understanding the math: One strategy that was emphasized in third grade was drawing a model to compare fractions. Your child may be at the point that they no longer need to draw a model and can reason which would be bigger, however it is a valuable skill for your child to draw a model to prove their answer. One thing to be careful of when working with your child to draw models of fractions, is that the size of the whole is the same. In the model above, the two rectangles are exactly the same size, which means we can compare the fractions. We cannot compare fractions with different size wholes. If I compared ½ of a fun size hershey bar and ¼ of a jumbo hershey bar (the kind as big as a table!), even though ½ is bigger than ¼, the size of the whole is different so the ¼ of the jumbo hershey bar would actually be larger.

Resources:
-It can be very helpful to use the tiles or fraction building pieces again this week! The links are below.
https://apps.mathlearningcenter.org/fractions/
https://toytheater.com/fraction-strips/

Questions to Ask Your Child :
-Why is ½ bigger than 1/100? (Your child should be able to name that the size of the pieces are bigger in ½ because you are only splitting the object into 2 rather than 100)
-Can you draw a model to prove your answer?

Activity of the Week

Dean Kristi might buy every kid pizza next year. She has two options. She can give every kid ½ of a mini pizza OR ¼ of an x-large pizza. Write a short note to Dean Kristi explaining which you think she should get and why. Use the pictures to help you. Be sure to use the word fraction in your note.

Dear Dean Kristi,

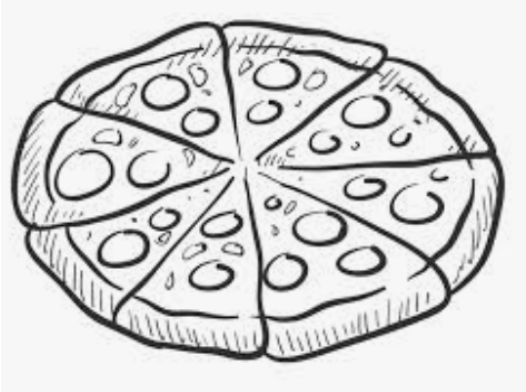
I think you should buy the _____ pizza because _____

_____

_____

_____

Mini Pizza



X-Large Pizza

Write >, =, or < in the circle between each pair of fractions to show how they compare. Use your pattern blocks to help. The first one is done for you.

$\frac{1}{2} \rangle \frac{2}{6}$ $\quad \frac{1}{3} \bigcirc \frac{2}{6}$ $\quad \frac{3}{6} \bigcirc \frac{2}{3}$ $\quad \frac{2}{2} \bigcirc \frac{3}{3}$

$\frac{2}{3} \bigcirc \frac{1}{2}$ $\quad \frac{2}{3} \bigcirc \frac{5}{6}$ $\quad \frac{3}{6} \bigcirc \frac{1}{2}$ $\quad \frac{4}{6} \bigcirc \frac{2}{3}$

Look at the fractions you shaded in above. Use them to help complete each number sentence by writing <, >, or =.

ex $\frac{1}{3} \rangle \frac{1}{9}$	**a** $\frac{1}{5} \quad \frac{1}{3}$	**b** $\frac{2}{9} \quad \frac{1}{9}$
c $\frac{1}{10} \quad \frac{1}{9}$	**d** $\frac{1}{5} \quad \frac{1}{10}$	**e** $\frac{1}{2} \quad \frac{1}{3}$

Use what you know about fractions to complete each number sentence by writing <, >, or =.

a $\frac{1}{100} \quad \frac{1}{50}$	**b** $\frac{7}{25} \quad \frac{5}{25}$	**c** $\frac{1}{4} \quad \frac{1}{16}$

My friends and I are sharing a watermelon. I got $\frac{1}{3}$ of the watermelon and my friend Michelle got $\frac{1}{6}$ of the watermelon. Who got more? Explain your answer.

Britta says that this rectangle is divided into thirds. Do you agree with Britta? Use words, labeled sketches, or numbers to explain your answer.

Sam says that $\frac{1}{6}$ of an apple pie is more than $\frac{1}{3}$ of the same apple pie because 6 is more than 3. Do you agree with Sam? Use words, labeled sketches, or numbers to explain your answer.

Is the statement True or False? Make a sketch to prove that you're correct. You can use your pattern blocks to help if you like.

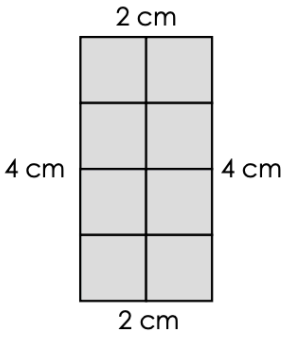
a $\frac{6}{6} > 1$	True False	
b $\frac{2}{3} < \frac{1}{2}$	True False	
c $\frac{2}{6} = \frac{1}{3}$	True False	
d $\frac{2}{3} = \frac{4}{6}$	True False	

Week 7

I can... find the area and perimeter of a quadrilateral.

Perimeter is the distance around a shape. To find the perimeter, add the length of each side.

Area is the number of square units that can fit inside of a shape. To find the area, count the square units.



Perimeter = 12 cm

Area = 8 cm^2

For Families

Understanding the math: In third grade, students learned about area and perimeter of regular quadrilaterals (like squares and rectangles). In 4-6th grades they will expand on this knowledge and find area and perimeter of other shapes. To find area, they learned to either count the squares in a shape or multiply the length and the width. This connects directly back to their work with arrays. For perimeter they learned to add up all the sides. They may also have to use what they know about squares and rectangles to find the lengths of unknown sides.

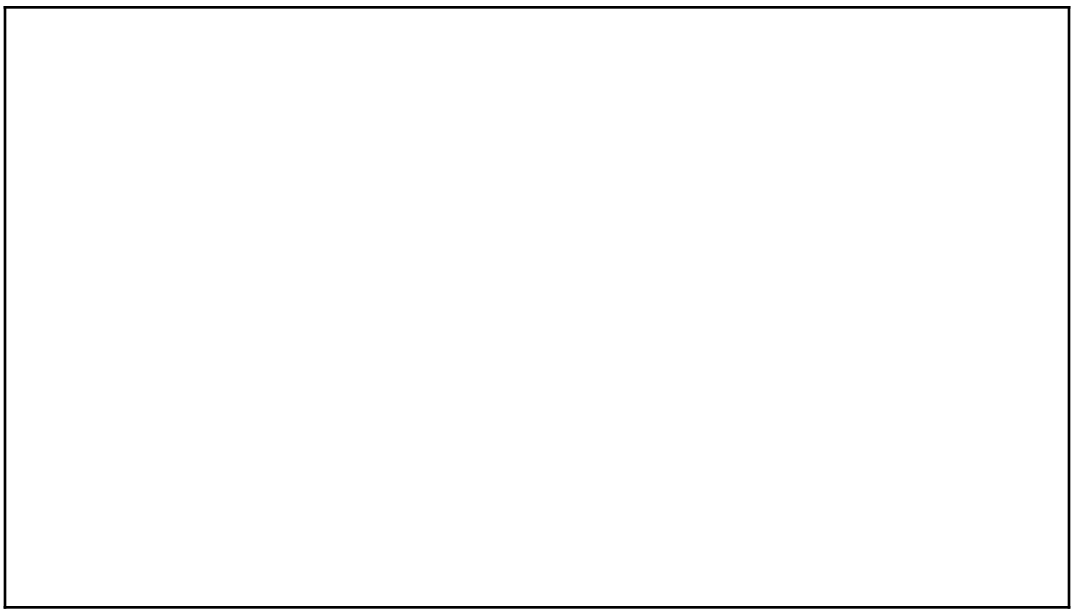
Resources:
-You can again use the array builder to give students practice finding area: https://apps.mathlearningcenter.org/partial-product-finder/

Questions to Ask Your Child :
-How did you know the area was ___?
-What could the length and width be if I wanted the area of a rectangle to be 24 sq.cm? What if I wanted the perimeter to be 20 cm?
-Can you draw all the rectangles that have an area of 18 square units?

Activity of the Week

In the space below or on another page, design your dream bedroom. Add three cool objects with labels. Then answer the questions.

My Bedroom:



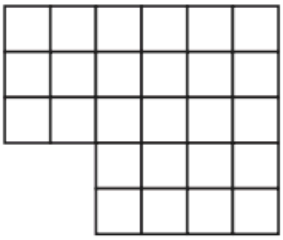
The area of your bedroom is 24 sq. yards.

What could the length and width be? Length: _____yds Width _____yds

What is the perimeter of your bedroom? _____yds.

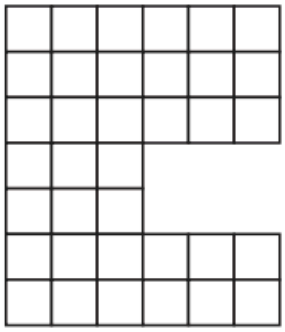
As soon as Emery had to go into town again, the Goat Twins, Zachary and Whackery, got up to their old tricks. Here are 4 different arrangements they made with Emery's small square tables. Find the area of each. Use lines or loops, along with numbers and equations to show how you got your answers.

a



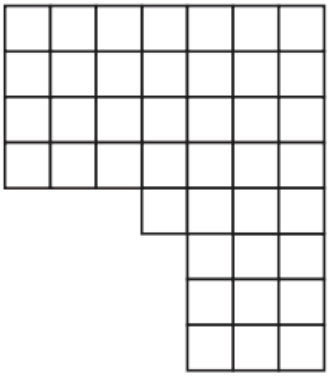
Area = _____ sq. units

b



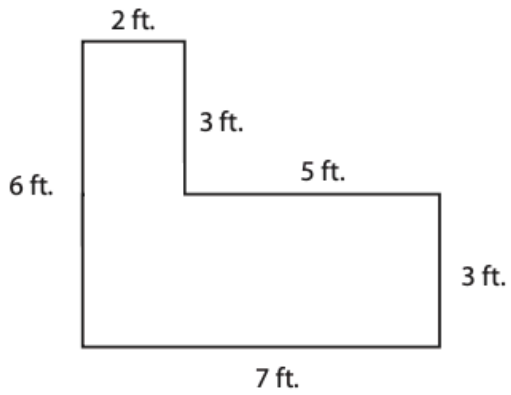
Area = _____ sq. units

c



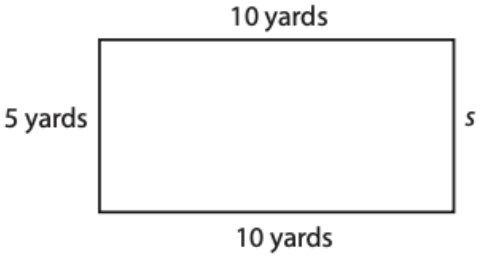
Area = _____ sq. units

d



Area = _____ sq. units

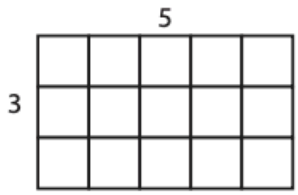
Here is a little sketch map of Emery's rectangular backyard. The perimeter of the yard is 30 yards. Use that information, along with the picture, to figure out the length of the side labeled *s*.



Side *s* is _____ yards long.

Find the area and perimeter of each rectangle. Area is the total amount of space covered by the rectangle. Perimeter is the distance around the rectangle.

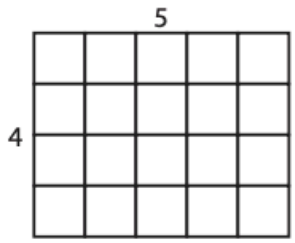
ex



Perimeter 3 + 3 + 5 + 5 = 16

Area 3 × 5 = 15 square units

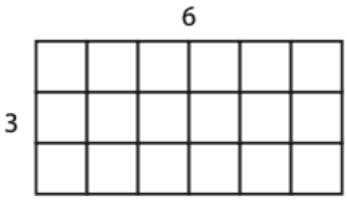
a



Perimeter _____

Area _____

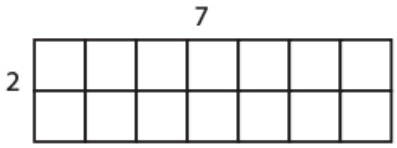
b



Perimeter _____

Area _____

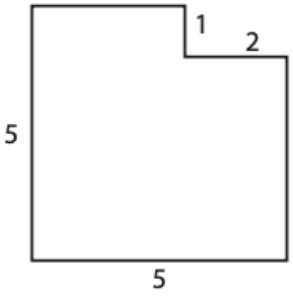
c



Perimeter _____

Area _____

Find the area and perimeter of this shape. Show all your work.

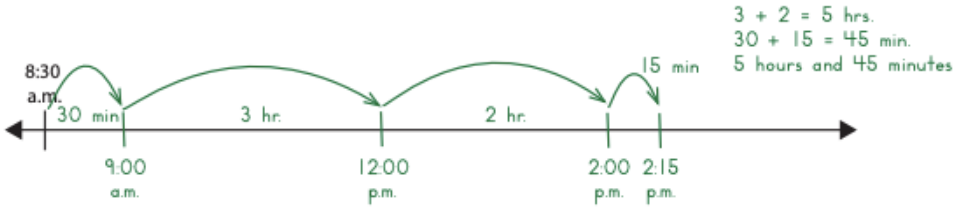


Perimeter _____

Area _____

Week 8

I can... answer questions about elapsed time.



For Families

Understanding the math: Students learned to tell time in 1st-2nd grade, expanded on this skill in 3rd and then added the skill of elapsed time meaning telling how much time has passed. Elapsed time is particularly tricky for students because it does not work in our base ten number system, meaning- 10mins doesn't make an hour and 10hrs don't make a day. We cannot use traditional addition or subtraction methods to solve elapsed time problems. Consider: If the time is 12:30 and I know my laundry will be done in 52 minutes and I want to know when it will be done, I cannot simply add 12:30+0:52. That would equal 12:82-not a real time. This is why number lines are particularly useful- you probably used one in your head to figure out when the laundry was done. Maybe you took a hop of 30mins to get to 1:00, then another hop of 22 to get to 1:22. Your child will use the same strategy written out. They may take smaller hops of 10s and 1s before they get more efficient.

Resources:

-Elapsed time is used all the time! We think about how many minutes it will take to get to work and if we will be late, when dinner needs to start cooking, and when we need to wake the kids up to get to school on time. Talk with your child when you are figuring these things out! Have them help you determine when to start, end, and how long things will take!

Questions to Ask Your Child:

-Right now it is ____ and dinner will be ready in 35 minutes. What time will dinner be ready?
-When do you need to start getting ready if it takes you 45 minutes and we need to leave at 9:30?
-How long did it take you to do your math work?

Activity of the Week

Choose 5 activities to do this week and time yourself! Write your start time and end time and the total time the activity took.

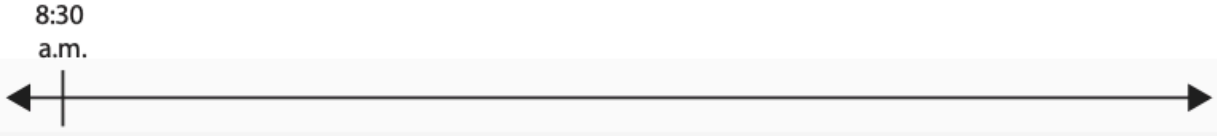
Activity	Start Time	End Time	Total Time

1 Label each of the marks with the correct time. Then mark and label other times along the line to show when you do different things throughout the school day.

2 Pablo gets home from school at 3:00 p.m. and then plays baseball for an hour and a half. What time is he done playing?

3 Serana woke up at 7:30 a.m. and spent 45 minutes getting ready for school. What time was she ready?

4 Brandon and Beth went to a Robotics Competition last Saturday at 8:30 a.m. It lasted 5 hours and 45 minutes. What time were Brandon and Beth done?



Show your work for the problems below. You can draw and use timelines to help if you like.

a Noah started playing his guitar at 3:22 p.m. He played for 46 minutes. When did he stop playing?

Noah stopped playing his guitar at _____.

b Jennifer usually starts her homework at 6:30 p.m., but she was 8 minutes late. She worked on her homework for 27 minutes. What time did she finish her homework?

Jennifer finished her homework at _____.

c **CHALLENGE** Jeremy started exercising at 4:45 p.m. and he stopped at 5:38 p.m. How long did he exercise?

Jeremy exercised for _____.

Week 9

I can... create and answer questions about graphs.

For Families

Understanding the math: In third grade your child learned about a few types of graphs. Picture graphs, bar graphs (graphs with bars above or to the side of each option), and line plots, like the one above. Graphs help us organize our thinking, make conclusions, and show information. It is important for your child to be able to create and interpret graphs not just for their future math learning, but also as a skill they will use throughout their life. They will use graphs in science class, they will see graphs in their history textbooks, and they will see graphs in news stories. Being able to understand graphs is a lifelong skill!	
Resources: -Children love to ask questions and learn about their families. Help them to create graphs about what they learn. Here is a virtual graph making tool you can use: https://toytheater.com/graph-color-bars/	**Questions to Ask Your Child :** -Which has the most? How do you know? -How many votes does ___ have? -How many more ____ than ____ are there? -What is the total number of ____?

Activity of the Week

Create a question survey with four answer choices for your family (for example, do what is your favorite color- red, blue, pink, or orange?). Try to ask 10 people. It's a great excuse to call family members! Make a bar graph of your survey below, coloring in the boxes for each answer. Then answer the questions.

Question: _____

_____

Option	**2**	**4**	**6**	**8**	**10**

What option had the most votes? _____

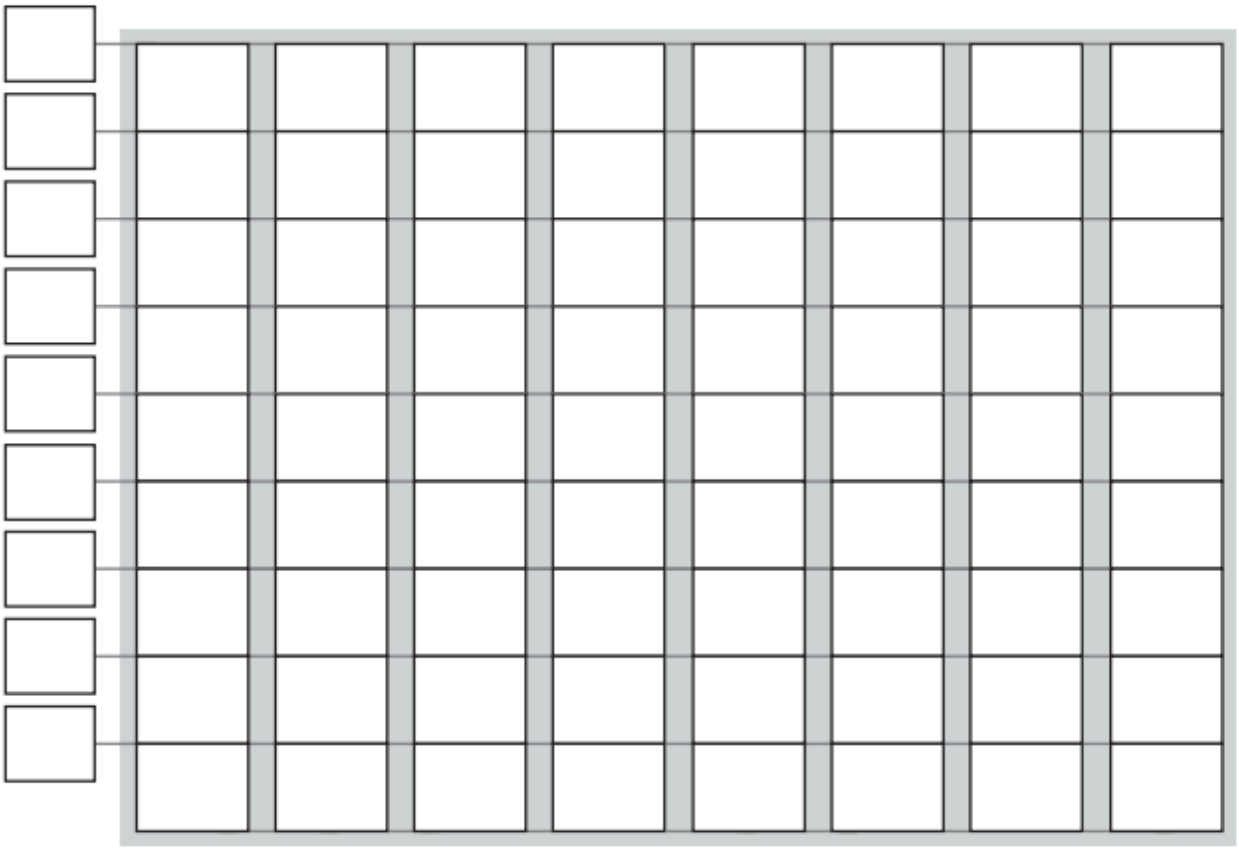
What option had the least? _____

How many more people voted for the most option than the least? _____

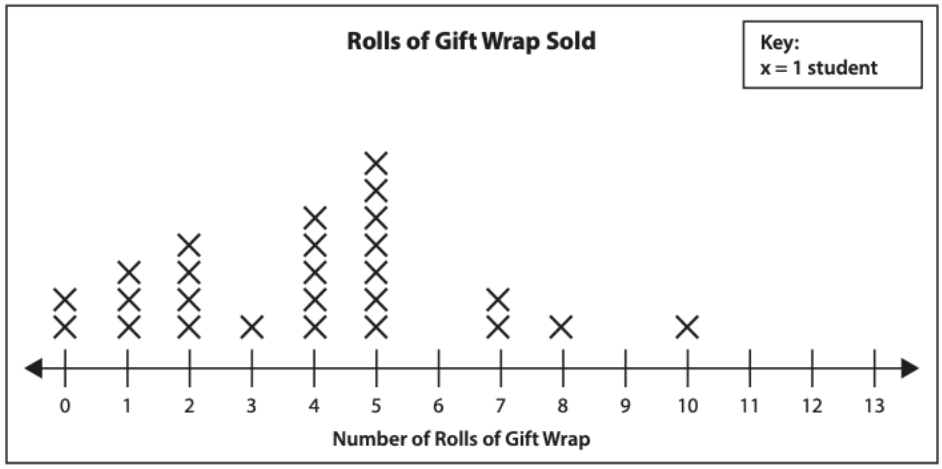
Woodlawn Elementary School's librarian Mr. Jackson is keeping track of the kinds of books students check out. This chart shows the number of each kind of book the third graders have checked out so far this year.

Genre	Fiction or Nonfiction	Number of Books Checked Out
Adventure	F	32
Art & Crafts	N	16
Biography	N	12
Fantasy	F	10
Fiction	F	33
Graphic Novels	F	29
Science	N	15
Sports	N	8

The third grade teachers want to know more about what their students are reading. Create a bar graph showing the information Mr. Jackson collected. Each cell in the graph stands for 4 books checked out. Label and title your graph.



The students in Ms. Carter's class sold gift wrap to raise money for new playground equipment. The line plot below shows how many rolls of gift wrap the students sold.



1 How many students are in the class? Explain how you know.

2 How many students sold 7 rolls of gift wrap? _____

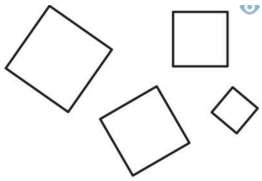
3 How many rolls of gift wrap did most of the students sell? _____

4 Sarah sold more gift wrap than anyone else. How many rolls did she sell? _____

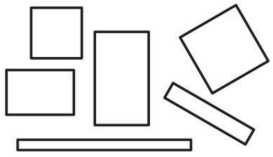
5 How many rolls of gift wrap were sold in all? Show your work. (Hint: Be careful here. The answer is NOT the total number of Xs on the line plot.)

Week 10

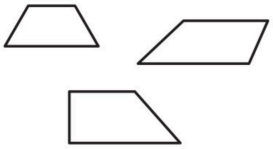
I can... name and describe 4-sided shapes (quadrilaterals).



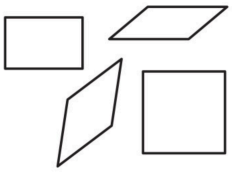
Squares ^



Rectangles^



Trapezoids^



Parallelograms^

For Families

Understanding the math: Third graders focused on naming and describing four sided shapes (quadrilaterals). There are so many terms when it comes to geometry, it's helpful to have them handy. Here are four terms your child will need to know for this unit:
Right Angle: an angle that equals 90 degrees (a perfect corner)
Parallel Lines: lines that would go on and on forever and never touch
Perpendicular Lines: lines that form a right angle
Congruent Sides: sides that are the same length
Note that in fourth grade, they will do even more work with lines and angles, so having a good foundation with these terms will help them greatly!

Resources:	**Questions to Ask Your Child :**
-An online geo board and pattern blocks are fun ways to explore with shapes: https://apps.mathlearningcenter.org/geoboard/ https://apps.mathlearningcenter.org/pattern-shapes/	-How do you know that is a _____? -Is there another name you could give that shape? -Name the shape that has _____.

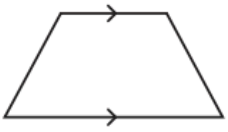
Activity of the Week

Go on a quadrilateral hunt in your house or neighborhood! Look for: squares, rectangles, trapezoids, parallelograms. Keep track of what you find.

Shape	What did you find?
Square	
Rectangle	
Trapezoid	
Parallelogram	

A *quadrilateral* is a shape with 4 sides. Here are some different kinds of quadrilaterals.

Trapezoid: a quadrilateral with exactly 1 pair of parallel sides

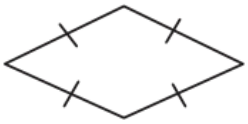


Mathematicians use little arrows like these to show that two sides are parallel.

Rectangle: a quadrilateral with 2 pairs of parallel sides and 4 right angles

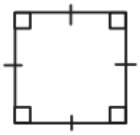
Mathematicians mark right angles with little squares like these.

Rhombus: a quadrilateral with 4 sides that are all the same length

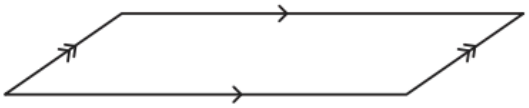


When the sides of a shape are marked with little tic-marks like these, it tells you that the sides are equal.

Square: a quadrilateral with 4 right angles and 4 sides that are all the same length



Parallelogram: a quadrilateral with 2 pairs of parallel sides

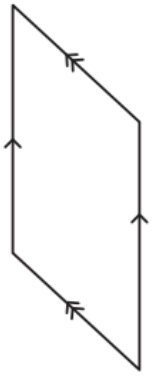


When a shape has more than one pair of parallel sides, mathematicians use more arrow heads to show which pairs of sides are parallel.

1 Circle the word(s) that describe each shape.

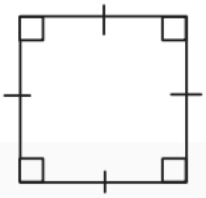
trapezoid
parallelogram
rectangle
rhombus
square

trapezoid
parallelogram
rectangle
rhombus
square

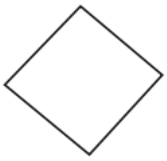


2 Jackie circled all these words for this shape. Is she right or wrong? Explain your answer.

trapezoid
parallelogram
rectangle
rhombus
square



Fill in the bubbles to show all the names that could be used to identify this shape.



○ square ○ rhombus ○ quadrilateral ○ parallelogram

Fill in the bubbles to show all the names that could be used to identify this shape.

○ trapezoid ○ parallelogram ○ rectangle ○ quadrilateral

How do you know that the shape in problem 2 is not a parallelogram? Use labeled sketches or words to explain.

Draw a line from each description to **every** quadrilateral that has those attributes.

Trapezoid
a quadrilateral with exactly 1 pair of parallel sides

Parallelogram
a quadrilateral with 2 pairs of parallel sides opposite each other

Rectangle
a parallelogram with 4 right angles

Rhombus
a parallelogram with 4 congruent sides

Square
a parallelogram with 4 congruent sides and 4 right angles