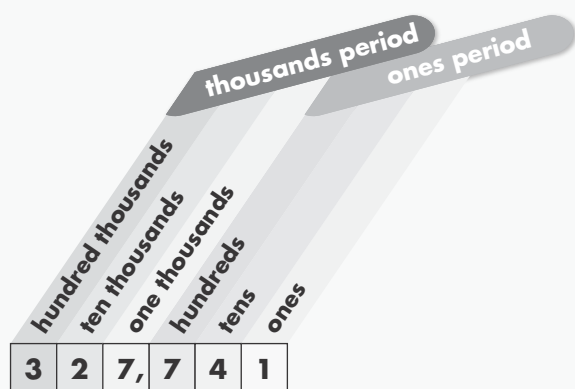


Generalize Place Value Understanding

Dear Family,

Your child is learning how greater numbers are written, how place values are related, and how to compare numbers. In this topic he or she will learn about the structure of the place-value system with numbers through 1 million. This topic will also allow your child to recognize that the value of a digit depends on its place in a number and that a digit in one place represents ten times what it represents in the place to its right. This is an important skill that will allow your child to communicate mathematical ideas and reasoning.



The first 7 is in the thousands place.
Its value is 7,000.

The second 7 is in the hundreds place.
Its value is 700.

Know Your Numbers

Materials index cards, paper and pencil

Make a set of number cards by writing one digit 0 through 9 on each index card. Have your child select cards and arrange them to make the greatest possible 6-digit number. Record the number. For example, if the digits are 1, 3, 5, 6, 7, and 9, the greatest number is 976,531. Then have your child rearrange the cards to make the least possible 6-digit number (135,679). Record the number. Have your child read both recorded numbers aloud. Repeat the activity several times using different 6-digit numbers.

Observe Your Child

Help your child become proficient with Mathematical Practice 4. Ask your child to write a comparison statement for two numbers using the $>$ or $<$ symbols. Ask your child to explain how he or she determined the answer. He or she may use a place-value chart to help explain.

Name _____

Fluently Add and Subtract Multi-Digit Whole Numbers

Dear Family,

Your child is learning to fluently add and subtract multi-digit whole numbers. Rounding is used to find values that are close to a correct answer. Rounding is a useful skill to check if an answer is reasonable. For example, if you buy two pairs of pants for \$18 each, the total should be about \$40. If you get a very different answer, then you probably calculated incorrectly. Your child will apply this same logic to numbers greater than or equal to 1,000.

Your child will get a lot of practice doing “mental math,” either by using addition properties or by using strategies such as counting on and compensation. The activity below is an example of the types of problems your child will solve in this topic.

Estimate the Total

Materials paper and pencil

Look through the car sales section of your local newspaper. Have your child select two vehicles he or she would like to purchase. Ask your child to round the price of each car to the nearest thousand. Have your child estimate the total cost for both cars using the rounded values. Repeat the steps for additional pairs of vehicle prices.

Observe Your Child

Ask your child to write a general statement explaining how he or she estimated the costs of the items.

Name _____

Use Strategies and Properties to Multiply by 1-Digit Numbers

Dear Family,

Your child is learning strategies to multiply two-, three-, and four-digit numbers by one-digit numbers. He or she is applying strategies involving partial products, including place-value and area models.

These patterns also help your child estimate products. For example, to estimate 4×32 , round 32 to the nearest ten (30) and then multiply ($4 \times 30 = 120$). To find the actual product, your child can use the Distributive Property.

Break apart 32 into 30 and 2. Think of 4×32 as $(4 \times 30) + (4 \times 2)$. So, $120 + 8 = 128$.

Your child can compare the product to the estimate to see if his or her answer is reasonable.

Multiplying Greater Numbers

Materials paper and pencil

Give your child a two-digit by one-digit multiplication problem, such as 5×49 . Ask your child to estimate the product and then solve. He or she can use the Distributive Property to find the product.

Observe Your Child

Ask your child if his or her answer is reasonable when solving a problem multiplying a one-digit number by a two-, three-, or four-digit number. Then have your child explain his or her reasoning.

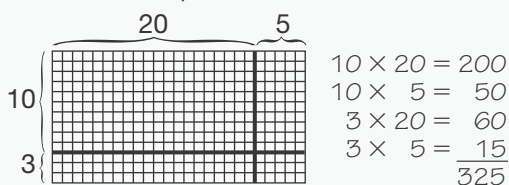
Use Strategies and Properties to Multiply by 2-Digit Numbers

Dear Family,

Your child is learning how to multiply 2-digit numbers by 2-digit numbers. Some of the strategies he or she is learning to use include arrays and partial products. Below are examples for 13×25 .

Use an array.

Add each part of the array to find the product.



Use place value and partial products.

Multiply the ones, then the tens.

Add the partial products.

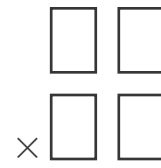
$$\begin{array}{r}
 25 \\
 \times 13 \\
 \hline
 75 \\
 250 \\
 \hline
 325
 \end{array}$$

Multiply the ones.
Multiply the tens.
Add the partial products.

Multiplying Game

Materials number cube (labeled 1–6)

Play in pairs. Each player rolls the number cube. Record the number the first player rolls in the tens place and the number the second player rolls in the ones place to create a 2-digit number. Each player rolls the number cube again, recording the numbers in the same way. Then players complete the multiplication. When a player has found the answer, he or she says "Done." The other player checks the answer. If it is correct, he or she receives a point. The first player to earn 3 points wins the game.



Observe Your Child

If your child gets an incorrect answer, help him or her find the error in his or her computation.

Name _____

Use Strategies and Properties to Divide by 1-Digit Numbers

Dear Family,

In this topic, your child will learn how to divide by one-digit divisors. Learning this skill will require his or her understanding of estimating quotients and, of remainders, and of connecting models and symbols. You can expect to see work that provides practice in dividing whole numbers by one-digit divisors using strategies other than the standard algorithm and checking that the answer is reasonable using estimation.

Variations on a Theme

Materials pencil, index cards

Write a \div symbol and an $=$ symbol on two index cards. Write the numbers 2 to 9 on separate index cards. Write eight different two-, three-, or four-digit numbers on separate index cards. Place the one-digit and multi-digit cards face down in separate piles. Take turns choosing one card from each pile and using the symbol cards to create a division equation. Take turns solving the problems. If the solution is correct, the person solving the problem earns points equal to the remainder. Take turns until all the cards have been used. The person with the most points wins. Shuffle both stacks of cards and play again.

Observe Your Child

During one of your child's turns, ask your child to explain how to check that the quotient is reasonable.

Name _____

Use Operations with Whole Numbers to Solve Problems

Dear Family,

Your child is applying multiplication and division strategies to problem situations and exploring ways to find solutions.

This topic focuses on solving comparison problems as well as using addition, subtraction, multiplication, and division to solve multi-step problems. Your child will practice using the four operations to explore the relationship between separate values. Here is an activity you can try together.

Step by Step

Materials paper and pencil

Create and solve multi-step problems with your child. One person creates the first step of the problem. For example: This week Tom ran 2 miles one day and 3 miles another day. Next, the other person uses a different operation to construct the next step: Last week Tom ran 3 times farther than this week. How far did Tom run in two weeks? The first person then explains how to solve the problem: Tom ran $2 + 3 = 5$ miles this week. He ran $5 \times 3 = 15$ miles the week before, so he ran $5 + 15 = 20$ miles in two weeks. Vary the operations used and increase the number of steps as fluency allows.

Observe Your Child

Discuss different strategies for solving the same problem. Provide mathematical reasoning to support why the strategies would or would not work.

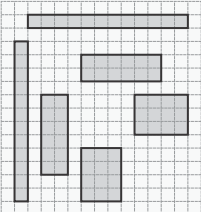
Name _____

Factors and Multiples

Dear Family,

Your child is learning about factors. In this topic, he or she will use arrays and multiplication to find the factors of a given number. The concept is extended to include factor pairs, lists of factors, and prime and composite numbers. Your child will also learn that factors are related to multiples which will prepare him or her for working with fractions.

12 objects can be arranged into six different rectangular arrays.

Arrays	Expressions	Factor Pairs	Factors of 12
	1×12	1 and 12	1, 2, 3, 4, 6, 12
	12×1		
	2×6	2 and 6	
	6×2		
	3×4	3 and 4	
	4×3		

How Many Ways?

Materials uniform objects such as pennies, paper and pencil

Say a number. Have your child show all the ways to arrange that number of objects in rectangular arrays. Record each arrangement as a multiplication expression. Talk about why some arrangements do not work.

Observe Your Child

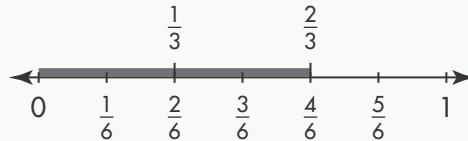
After recording all the possible expressions in the activity above, have your child look for patterns in the factors of the expressions and use that pattern to identify the factor pairs.

Name _____

Extend Understanding of Fraction Equivalence and Ordering

Dear Family,

Your child is learning about fractions. An important part of this topic is identifying equivalent fractions. Equivalent fractions name the same part of a whole. The number line below shows $\frac{1}{3}$ and $\frac{2}{6}$ are equivalent fractions, and $\frac{2}{3}$ and $\frac{4}{6}$ are equivalent fractions because they are the same distance from zero.



The concept of equivalent fractions will allow your child to compare fractions in this topic as well as add and subtract fractions in a later topic.

Fraction Match

Materials index cards and pencil

Make a set of fraction cards out of index cards or cut out those shown below. Each player picks 8 fraction cards. Have your child lay one card as the starting card in the center of the table. Players take turns connecting equivalent fractions to the starting card until all cards have been played or no further connections are possible.

$\frac{1}{2}$	$\frac{2}{4}$	$\frac{3}{6}$	$\frac{4}{8}$	$\frac{5}{10}$	$\frac{6}{12}$	$\frac{2}{3}$	$\frac{1}{3}$
$\frac{2}{6}$	$\frac{4}{12}$	$\frac{1}{4}$	$\frac{2}{8}$	$\frac{3}{12}$	$\frac{4}{6}$	$\frac{3}{4}$	$\frac{9}{12}$

Observe Your Child

Ask your child to create more fraction cards to extend the game.

Name _____

Understand Addition and Subtraction of Fractions

Dear Family,

In this topic, your child will learn to add and subtract fractions with like denominators, or denominators that are the same. To add fractions with like denominators, add the numerators and write the sum over the like denominator.

For example, $\frac{3}{12} + \frac{8}{12} = \frac{11}{12}$.

Your child will also learn to use fraction strips and number lines to represent the addition and subtraction of fractions with like denominators.

Here are some activities that you can do to help your child understand adding and subtracting fractions with like denominators.

Fraction Writing

Materials paper and pencil

Step 1 Write $\frac{1}{4}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{1}{8}$, and $\frac{1}{12}$ on a piece of paper.

Step 2 Have your child name the fractions that have a common denominator and explain how to add those fractions.

Fraction Toss-Off

Materials number cube labeled 1–6

Step 1 Toss a number cube once to generate a numerator and once or twice to generate a one-digit or two-digit denominator. Repeat to create several fractions.

Step 2 Have your child decompose each fraction in two or more ways.

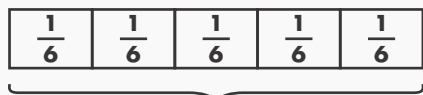
Observe Your Child

Ask your child to represent the addition in the Fraction Writing activity with bar diagrams and equations.

Extend Multiplication Concepts to Fractions

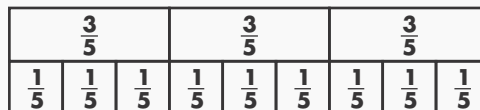
Dear Family,

Your child is extending his or her previous understanding of multiplication and fractions to multiply a fraction by a whole number. Your child will strengthen his or her understanding of fractions by comparing non-unit fractions, such as $\frac{5}{6}$, to their corresponding unit fractions, such as $\frac{1}{6}$. Your child will generalize that $\frac{5}{6}$ is a multiple of $\frac{1}{6}$, because $\frac{5}{6} = 5 \times \frac{1}{6}$. Your child will further extend this understanding to multiply whole numbers by fractions.



5 equal groups of $\frac{1}{6}$

$$\frac{5}{6} = 5 \times \frac{1}{6}$$



$$\begin{aligned} 3 \times \frac{3}{5} &= 3 \times \left(3 \times \frac{1}{5}\right) \\ &= 9 \times \frac{1}{5} \\ &= \frac{9}{5} \text{ or } 1\frac{4}{5} \end{aligned}$$

Multiply Whole Numbers and Fractions

Materials number cube, paper, pencil

Have your child roll the number cube twice. If he or she rolls the same number, roll again until two different numbers are rolled. Create a fraction using the two numbers. The lesser number should be written as the numerator and the greater number should be written as the denominator. Have your child identify whether the fraction is a unit fraction. Roll the number cube again. Multiply the fraction by this number. Write the equation for each.

For example:

$$4 \times \frac{3}{5} = \frac{12}{5} = \frac{5}{5} + \frac{5}{5} + \frac{2}{5} = 2\frac{2}{5}$$

Observe Your Child

Have him or her draw a model of the multiplication, similar to the one shown above for each of the problems created from the activity.

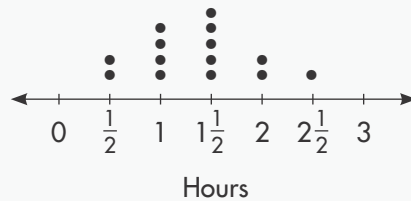
Name _____

Represent and Interpret Data on Line Plots

Dear Family,

Your child is learning ways to analyze data using line plots. Learning to read and create line plots will help your child analyze mathematical relationships that can be used to solve problems. The line plot below shows how many hours each day a student spent doing homework over a 2-week period.

Time Spent on Homework Each Day



Family Matters

Materials paper or graph paper, pencil

Step 1 Have your child record how much time he or she spends on an activity each day for one week.

Step 2 Help your child make a line plot of the data. Include a title and label.

Step 3 Ask your child to summarize the patterns in the line plot. Have your child ask you questions that can be answered using the line plot.

Observe Your Child

Ask your child a question about the line plot he or she created or the line plot shown above. For example, how many hours were spent on homework in all? Help your child analyze the given information by explaining the meaning of each dot on the line plot. Work with your child to answer the question.

Name _____

Understand and Compare Decimals

Dear Family,

Your child is learning how fractions and decimals relate to each other. He or she is also learning how to compare numbers to two decimal places. To do this, he or she is learning how to apply the concept of place value to decimals. For example, in 563.21, the 2 is in the tenths place and the 1 is in the hundredths place. In 563.19, the 1 is in the tenths place and the 9 is in the hundredths place. $563.21 > 563.19$ because 2 tenths is greater than 1 tenth.

Help your child practice comparing decimals by playing the following game together.

Make the Greatest Decimal

Materials index cards, paper and pencil

Make a set of ten number cards using 0 through 9. On another index card, write a decimal point. Place the number cards face down on a table but leave the decimal card face up. Turn over one number card and place it to the left of the decimal point. Player 1 turns over two cards and arranges them to the right of the decimal point to make the greatest possible number. Player 2 turns over two more cards and places them to the right of the decimal point on top of Player 1's cards to make the greatest possible number. Have your child record both numbers and read both numbers aloud. The player with the greatest number is the winner.

Observe Your Child

Ask your child to write a statement comparing the two numbers from the game above using the symbol $>$, $=$, or $<$.

Name _____

Measurement: Find Equivalence in Units of Measure

Dear Family,

Your child is extending his or her skills by converting units of length, capacity, weight, and mass within the customary and metric measurement systems. It is likely that your child is more familiar with customary units (inches, gallons, pounds) than metric units (meters, liters, grams). The best way to help your child become more familiar with metric measures is to use them more often. You can help by using metric units to do some measuring activities together.

Units of Length

1 cm = 10 mm
1 m = 100 cm
1 km = 1,000 m

Units of Capacity

1 L = 1,000 mL

Units of Mass

1 kg = 1,000 g

Metric Scavenger Hunt

Challenge your child to go on a metric scavenger hunt. The task is for your child to find items that are about the following measurements. They should find at least one item for each measure.

1 centimeter

1 liter

1 kilogram

100 grams

100 milliliters

2 meters

Observe Your Child

Find an item for one of the measures. Then ask your child to explain whether he or she agrees with your selection.

Name _____

Algebra: Generate and Analyze Patterns

Dear Family,

Your child is learning to generate and analyze patterns of numbers or geometric shapes. He or she is learning how to use a rule and a table to continue a pattern. Your child is also learning how to use a repeating pattern to predict the n^{th} term. A table like the one shown below helps your child recognize and understand the relationships between numbers.

Number of Packs	1	2	3	4	5
Number of Cards	8	16	24		

Table Times

- Step 1** Examine the table above and discuss the rule that the pattern follows: "Multiply by 8." For example, as the number of packs increases by 1, the number of cards increases by 8.
- Step 2** Have your child fill in the missing numbers [32 and 40] and have him or her predict the next two pairs of numbers if the table continued. [6 and 48, 7 and 56]
- Step 3** Discuss any features or attributes that are not given in the rule. For example, the number of cards is always even.
- Step 4** On another sheet of paper, draw a blank table using the form shown above, and take turns creating patterns with missing parts. Discuss the rule, and complete the tables together.

Observe Your Child

Ask your child to identify and record features of the pattern after filling in the missing parts.

Name _____

Geometric Measurement: Understand Concepts of Angles and Angle Measurement

Dear Family,

Your child is learning about geometry. He or she is learning common geometric terms, such as point, line, ray, and line segment. Your child is also learning about angles, including classifying angles and measuring angles. He or she is determining the measure of an angle using known angle measures, as well as using an appropriate tool, such as a protractor. Your child is also learning how to add and subtract angle measures.

Classifying Angles

Materials poster board, 21 index cards, tape, pencil

Step 1 On the poster board, draw 3 vertical lines so that the board is divided into 3 columns. Label one section *Acute Angles*, another section *Right Angles*, and the last section *Obtuse Angles*.

Step 2 Work with your child to draw various angles on the index cards. Shuffle the index cards and place them face down.

Step 3 Players take turns choosing a card. Determine which geometric term on the poster board best describes the angle on the card. Using the tape, place the index card in the appropriate column on the poster board.

Observe Your Child

Have your child explain his or her thinking when classifying the angles. Help your child construct a viable argument by comparing the angle to a square corner or a straight edge to justify whether the angle is acute or obtuse.

Name _____

Lines, Angles, and Shapes

Dear Family,

Your child is learning about *geometry*. In addition to learning about the special names given to pairs of lines (parallel, intersecting, and perpendicular), he or she is learning how to recognize and classify different plane figures, including different types of polygons, triangles, and quadrilaterals. A plane figure is a figure that has two dimensions: length and width.

Find the Shape

Materials 14 index cards and pencil

Step 1 Write the following terms twice, one per index card, so that there are two cards with each shape: equilateral triangle, isosceles triangle, scalene triangle, parallelogram, trapezoid, square, rectangle.

Step 2 Mix up the cards and place them face down.

Step 3 Players take turns choosing a card, reading the shape on the card aloud, and then thinking of a real-world example of the figure. If the player can correctly identify a real-world example of the figure, he or she keeps the card. If the player cannot think of a real-world example, he or she must replace the card, and it is the other player's turn.

The player with the most cards at the end of the game is the winner!

Observe Your Child

Ask your child to explain and justify his or her choice of a real-world example.