Name _____

Understand Multiplication and Division of Whole Numbers

Dear Family,

Your child is learning how to multiply. Help him or her think of multiplication as joining equal groups. For example, 5 × 2 is 5 groups of 2. So, 5 × 2 = 10.

Your child is also learning how to divide. Help him or her think of division as sharing equally. For example, 42 ÷ 7 can be thought of as 42 crayons and 7 boxes. Each box has an equal number of crayons. There are 6 crayons in each box.

Do the activities below with your child to help him or her learn multiplication and division concepts and facts.

Multiplication Stories

Give your child a multiplication fact, such as 4 × 3. Have your child tell you a multiplication story for that fact. Sample story: Jake has 4 bags of apples. There are 3 apples in each bag. How many apples does Jake have in all? Repeat the activity with a different multiplication problem.

Division Stories

Give your child a division fact, such as 32 ÷ 8. Have your child tell you a division story for that fact. Sample story: Sally has 32 pictures. She puts an equal number of pictures on 8 pages. How many pictures does Sally put on each page? Repeat the activity with a different division problem.

Observe Your Child

Ask your child to explain the relationship of the factors in multiplication to the number of equal groups and the number in each group.

Name _____

Multiplication Facts:
Use Patterns

Dear Family,

   Your child is learning to multiply using 0, 1, 2, 5, 9, and 10 as factors. Help him or her learn these multiplication facts by using patterns.
   Skip counting patterns can help your child with multiplication facts using 2, 5, or 10 as factors. For example, to find 2×7 or 7×2, skip count by 2s seven times.

   2, 4, 6, 8, 10, 12, 14 $7 \times 2 = 14$

   Make or buy a set of multiplication flash cards, and play this game with your child.

Penny Patterns

Materials cards with multiplication problems where 0, 1, 2, 5, 9, and 10 are factors, 100 pennies

Step 1 Mix the multiplication cards and place them facedown.

Step 2 Player 1 turns over a card without Player 2 seeing it. Player 1 then uses pennies to show the multiplication problem. For example, if the problem is 4×5, Player 1 could place the pennies in 4 rows of 5 pennies each.

Step 3 Player 2 looks at the penny pattern and says what multiplication problem is on the card and gives the answer.

Observe Your Child

After your child has created an array, have him or her skip count the pennies using one of the factors. Make clear that a pattern can also be observed by counting by the other factor.

Name _____

Apply Properties: Multiplication Facts for 3, 4, 6, 7, 8

Dear Family,

   Your child continues to study multiplication using 3, 4, 6, 7, and 8 as factors. Your child uses multiplication facts he or she already knows to find multiplication facts he or she does not know. For example:

$2 \times 8 = 16$

$1 \times 8 = 8$

$16 + 8 = 24$

$3 \times 8 = 24$

Here is an activity you can try together.

Matching Multiplication

Materials Cards with multiplication facts that have 3, 4, 6, 7, or 8 as a factor and separate cards with the products for each fact

• Each player turns over one factor card and one product card in order to find a multiplication equation match.

• If the cards match, the player keeps the cards and takes another turn. If not, the two cards are returned to the bottom of each set and the next person tries to find a match.

• Continue until all cards have been correctly matched.

Observe Your Child

When two cards match, ask your child to show a way to break the product into the sum of two other multiplication facts (as shown above).

Use Multiplication to Divide: Division Facts

Dear Family,

   Your child is using fact families to learn division facts. A fact family has one or two multiplication facts and one or two division facts that use the same three numbers. For example, below is the fact family for 5, 9, and 45.

$$9 \times 5 = 45 \qquad 5 \times 9 = 45 \qquad 45 \div 9 = 5 \qquad 45 \div 5 = 9$$

   Your child is learning to divide by the numbers 2 through 9 and to follow rules for 0 and 1. Here is an activity to help your child practice division and multiplication facts.

Fun with Fact Families

Step 1 Have Player 1 and Player 2 each pick a number from 1 through 9 and say the number aloud. For example, Player 1 says "6" and Player 2 says "8."

Step 2 Player 1 then says a multiplication fact that includes both numbers. ($6 \times 8 = 48$)

Step 3 Player 2 says a related division fact. ($48 \div 6 = 8$)

Step 4 Continue until the entire fact family has been stated; then start again.

Observe Your Child

Write one of the fact families from this activity. Ask your child to circle the numbers that change order in the multiplication facts. Remind your child of the Commutative Property of Multiplication ($a \times b = b \times a$). Discuss how the factors in a multiplication equation can change order. Point out that in the division equations in a fact family, the dividend stays the same.

Name _____

Fluently Multiply and Divide within 100

Dear Family,

   Your child is strengthening his or her ability to multiply up to 10×10 by identifying patterns in order to solve problems with efficiency and accuracy. Skip counting is one strategy that can help him or her with multiplication facts using 2, 5, or 10 as factors. For example, to find 7×5, skip count by 5s seven times.
   5, 10, 15, 20, 25, 30, 35 $7 \times 5 = 35$
   Your child will also continue to use the Distributive Property, which states that a multiplication fact can be broken apart into the sum of two other multiplication facts. For example, 7×5 is the same as the product of 7×2 plus the product of 7×3.
   $7 \times 2 = 14$ $7 \times 3 = 21$ $14 + 21 = 35$, so $7 \times 5 = 35$.
   Play this game with your child to help him or her learn more multiplication and division facts.

Operations Game

Materials paper and pencil

Have Player 1 think of two numbers between 1 and 10. Write down the two numbers with a multiplication symbol between them. Ask each player to explain a strategy to find the multiplication fact. For example, to find 7×2, you can skip count by 2s: 2, 4, 6, 8, 10, 12, 14. After the first fact has been completed, players can switch roles and continue playing.

Observe Your Child

Choose two factors between 1 and 10 and tell a story using multiplication to your child. Ask your child to identify the multiplication problem. Then tell a story using division.

Name _____

Connect Area to Multiplication and Addition

Dear Family,

   Your child is learning about area. In addition to learning about the area of simple rectangular shapes, he or she will also learn how to find the area of irregular shapes. Your child will use both nonstandard and standard units to calculate areas with and without grid paper.
   Here is an activity you can use to help your child understand area.

Changing Area

Materials grid paper and pencil

Step 1 Draw a rectangle on the grid paper, and have your child count the unit squares to find the area. Draw another rectangle with different dimensions. Have your child find the area of this rectangle.

Step 2 Draw an irregular figure, such as the outline of a house using a square and a triangle. Have your child count the unit squares to find the area. Work with your child to determine how to estimate area when only a portion of the unit square is filled. For example, 2 half-unit squares is equal to 1 whole-unit square.

Observe Your Child

Challenge your child to find two rectangles with different dimensions but with the same area. Ask your child to explain how he or she found the solution.

Represent and Interpret Data

Dear Family,

Your child is learning how to collect and organize information, or data, into graphs, charts, and tables. He or she will use a variety of graphs, including picture and bar graphs, to answer questions. You and your child can explore collecting data at home. Here is an activity you can do together.

Kitchen Graph

Materials graph paper and pencil

Step 1 Work with your child to survey the silverware in your kitchen. Record the data in a frequency table like the one shown.

Silverware	Tally	Number
Spoons	卌 IIII	9
Forks	卌 卌 I	11
Knives	卌 III	8

Step 2 Make a bar graph on graph paper to show the results of your count. Have your child label the graph and give it a title.

Observe Your Child

Create a bar graph with a title and bars, but no numbers. Ask your child to explain which group has the most and which has the fewest.

Use Strategies and Properties to Add and Subtract

Dear Family,

Your child is learning strategies to add and subtract numbers using mental math. One strategy for solving addition problems using mental math is to break apart numbers to make a ten, because the ten is easier to add. Here's an example:

Find 157 + 34.
You can make a 10 by adding 3 to 157. $\qquad$ $157 + \mathbf{3} = 160$
Break apart 34 into 3 + 31. $\qquad$ $160 + \mathbf{31} = 191$
$\qquad$ *So, 157 + 34 = 191.*

For subtraction, you can use the same strategy of making a ten.

Find 378 − 195.
It is easier to subtract 200. $\qquad$ $378 - \mathbf{200} = 178$
If you subtract 200, you subtract 5 more than 195.
You must add 5 to the answer. $\qquad$ $178 + \mathbf{5} = 183$
$\qquad$ *So, 378 − 195 = 183.*

Help your child practice using mental math to add and subtract. Here are activities you can do together.

Use Mental Math to Add and Subtract

Materials paper and pencil

Write different 3-digit numbers on eight slips of paper. Place the slips of paper in a bag and select two at random. Add the two numbers by making a ten and breaking apart numbers. Then, subtract the lesser number from the greater number using the same mental math strategy.

Observe Your Child

Provide your child with two 3-digit numbers to subtract. Then have him or her check the answer by using addition.

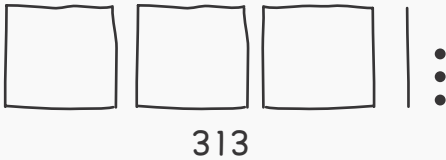# Fluently Add and Subtract within 1,000

Dear Family,

   Your child is learning to add and subtract 3-digit numbers. It is sometimes necessary to regroup numbers, such as 10 ones as 1 ten, or regroup 10 tens as 1 hundred. For example, when adding 124 + 189, you must regroup twice. Your child can also draw pictures of place-value blocks to show numbers.

$$
\begin{array}{r}
124 \\
+\,189 \\
\hline
313
\end{array}
$$

313
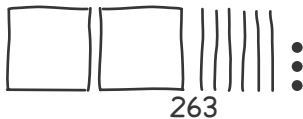
   Here is an activity you can do with your child.

Regrouping

Materials paper and pencil

Step 1 Fill in the blanks in the following sentence with 2-digit numbers:
What number is the same as __ tens __ ones?

Step 2 Ask your child to draw place-value blocks or use paper and pencil to represent the number.

What number is the same as 25 tens and 13 ones?

263

Observe Your Child

Have your child explain the relationship between the different place-value blocks.
Ask: "How many (ones) blocks make a (tens) block?"

Name _____

Multiply by Multiples of 10

Dear Family,

  Your child is learning to apply his or her knowledge of place value to multiply greater numbers. By looking for patterns in multiplication facts, he or she will learn to multiply multiples of 10 by one-digit numbers using mental math. Here are some examples of patterns that your child is learning:

$3 \times 6 = 18$ $5 \times 7 = 35$ $4 \times 9 = 36$
$3 \times 60 = 180$ $5 \times 70 = 350$ $4 \times 90 = 360$

  Your child is also learning how multiplication properties can help him or her multiply by multiples of 10.

You can group factors using the Associative Property of Multiplication.

$$5 \times 20 = 5 \times (2 \times 10)$$
$$= (5 \times 2) \times 10$$
$$= 10 \times 10$$
$$= 100$$

You can decompose a factor using the Distributive Property.

$$5 \times 20 = (3 + 2) \times 20$$
$$= (3 \times 20) + (2 \times 20)$$
$$= 60 + 40$$
$$= 100$$

Multiplying with 2-Digit Numbers

Give your child a one-digit by two-digit multiple of 10 multiplication problem, such as 4×40. Have your child solve the problem by either grouping the factors or by decomposing a factor.

For example, you can group the factors.

$$4 \times 40 = 4 \times (4 \times 10)$$
$$= (4 \times 4) \times 10$$
$$= 16 \times 10$$
$$= 160$$

Or you can decompose a factor.

$$4 \times 40 = (2 + 2) \times 40$$
$$= (2 \times 40) + (2 \times 40)$$
$$= 80 + 80$$
$$= 160$$

Observe Your Child

Have your child use an open number line to show the multiplication problems he or she worked on.

Use Operations with Whole Numbers to Solve Problems

Dear Family,

Your child is learning to apply his or her understanding of the four operations (addition, subtraction, multiplication, and division) to solve two-step word problems. Use the problem below to discuss with your child how to solve two-step word problems.

Jonah has $120. He buys 4 games that are $9 each. How much money does he have left?

$4 \times \$9 = \$36$

$\$120 - \$36 = \$84$

Find and answer the hidden question: What is the total cost of the games?

Then subtract to find how much money Jonah has left.

Jonah has $84 left.

Here is an activity you can complete with your child.

Writing and Solving Word Problems

Materials paper and pencil

Take turns with your child saying and writing word problems using different operations. Have your child write the related equations and identify the correct operations to use.

Observe Your Child

Use an incorrect operation to answer one of the word problems. Then ask your child to explain why the answer is incorrect.

Name _____

Understand Fractions as Numbers

Dear Family,

   Your child is recognizing fractions found all around us and is learning that fractions are equal parts of a whole, of a set, or of a length. He or she is also learning to name fractions and to locate fractions on a number line. Seeing fractions on a number line will help your child enhance his or her number sense. Working with fractions on a number line also will serve as a basis for future work with fractions in measuring length.

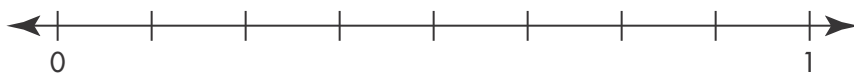   Here is an activity that you and your child can do together.

Fractions on a Number Line

Materials paper and pencil

Write the following fractions on eight slips of paper:

$\frac{1}{8}$ $\frac{2}{8}$ $\frac{3}{8}$ $\frac{4}{8}$ $\frac{5}{8}$ $\frac{6}{8}$ $\frac{7}{8}$ $\frac{8}{8}$

Put the slips of paper in a bag or box and mix them. Have your child draw two slips of paper and write each fraction in the correct position on the number line below.

Continue with the remaining slips of paper.

Observe Your Child

Have your child explain the different components of a fraction (numerator, denominator) and what they represent.

Name _____

# Fraction Equivalence and Comparison

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Dear Family,

Your child is continuing to learn about fractions. He or she is learning to find equivalent fractions, which are fractions that name the same part of a whole. Your child is also learning to compare and order fractions by using models, number lines, and number sense.

*Here is an activity that you and your child can do together.*

Equivalent Fractions

Materials paper, pencil or marker

Step 1 Fold one sheet of paper into four equal sections. Using a pencil or a marker, shade one section. Ask your child to name the fraction of the paper that is shaded. [$\frac{1}{4}$]
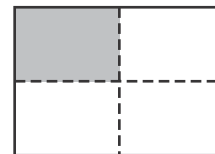
Step 2 Refold the paper as before, and then fold it in half one more time to make eight equal sections. Ask your child to name the fraction of the paper that is shaded now. [$\frac{2}{8}$]
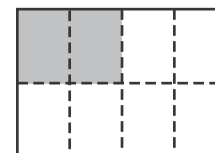
Step 3 Ask your child to name the fraction of the paper that is **NOT** shaded. [$\frac{6}{8}$] Have your child name a different fraction that is equal to that amount. [$\frac{3}{4}$]

Observe Your Child

Suggest to your child that shading 3 of the 8 sections of the paper would represent the fraction eight-thirds. Ask your child to explain your mistake and how to correct it.

Name _____

Solve Time, Capacity, and Mass Problems

Dear Family,

Your child is learning how to use metric units to measure the capacity and mass of objects. He or she will also learn when it is appropriate to use specific units of measurement for capacity and mass.

In addition, your child is learning how to solve problems that involve adding and subtracting time intervals using pictorial models and tools to build understanding of elapsed time. Use the following activity to enhance your child's understanding of time and elapsed time.

What Time Is It?

Materials Clock face and number lines

- Ask your child what time it is right now. Repeat throughout the day for various events, such as the time for breakfast, lunch, and dinner. You may also want to have your child decide on the events for which he or she will record the time.

- Ask your child what time it will be in 30 minutes, 45 minutes, or 60 minutes from a given time. For example, you may tell your child that the family needs to be at the park 45 minutes from the given time. Then ask your child to tell you the time it will be.

- Help your child write and follow a schedule for eating dinner, doing homework, and getting ready for bed. Talk about the length of each activity.

Observe Your Child

Some children may have difficulty telling time when it is not a multiple of 5. Encourage your child to count the small tick marks on the face of an analog clock to be more precise.

Attributes of Two-Dimensional Shapes

Dear Family,

   Your child is learning about geometry and the shapes found around us. He or she is learning about polygons, in particular, quadrilaterals, which are polygons with four sides. Your child will learn how to describe quadrilaterals based on their angles and sides.
   Here is an activity that you can do at home that will extend your child's knowledge of two-dimensional shapes.

Map It Out!

Materials map or atlas

Maps can be a great tool to reinforce geometric vocabulary and understanding. Using a map of your community, city, or state, help your child locate shapes. Look at roads, intersections, city and county boundaries, railroads, and so on.

Challenge your child to find examples of different kinds of polygons, such as those pictured below.
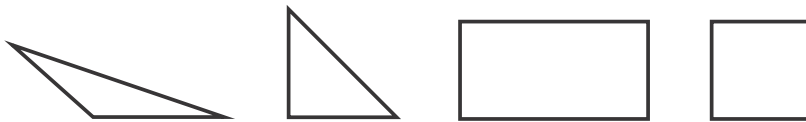
Observe Your Child

Challenge your child to use tools to create a map (of a real or an imaginary place) with different kinds of polygons. Have your child explain which polygons he or she used and describe their attributes.

Solve Perimeter Problems

Dear Family,

Your child is learning how to find perimeter. He or she is also learning that the attributes of polygons can help when finding the perimeter. For example, because the opposite sides of a rectangle are equal in length, just two measurements are needed to find the perimeter.

$3 + 3 + 12 + 12 = 30$ inches

$(2 \times 3) + (2 \times 12) = 30$ inches

3 inches

12 inches

Here is an activity for you to try together.

Design a Bedroom

Materials grid paper

Step 1 Have your child use grid paper to design a bedroom. Have him or her draw the bedroom's shape and find its measurements.

Step 2 Find the perimeter of the bedroom.

Step 3 Estimate and measure actual bedroom furniture and draw the shapes within the room.

Step 4 Find the perimeter of each piece of furniture.

Observe Your Child

Encourage your child to measure the furniture twice to check the precision of his or her measurements.