KEY CONCEPT OVERVIEW

Lessons 1 through 4 focus on understanding **place value** and representing numbers up to 1 million in different forms, including on a **place value chart.** The lessons emphasize that each place value is 10 times as much as the value of the place to its right.

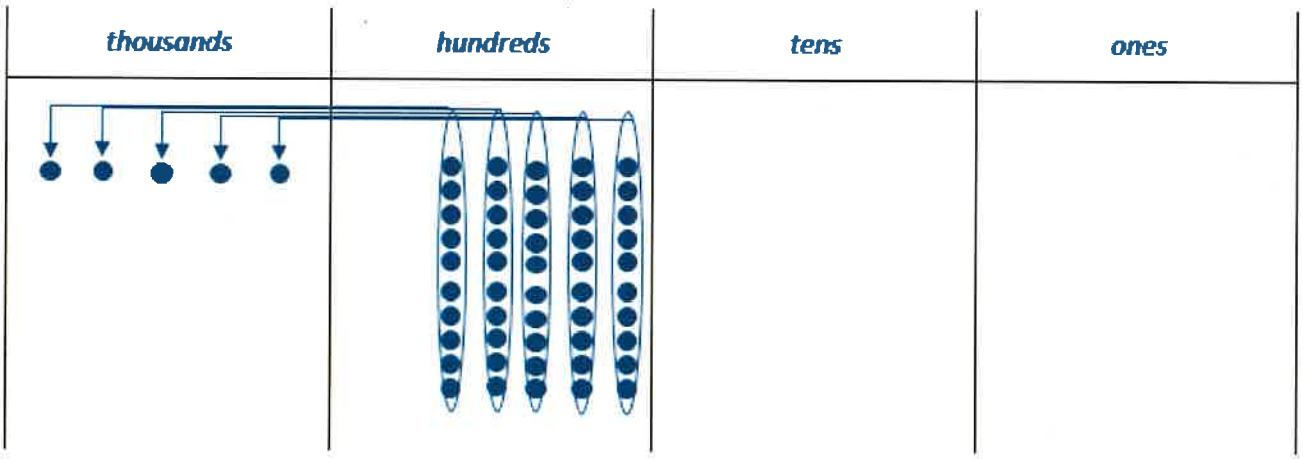
You can expect to see homework that asks your child to do the following:

- Label place value charts (up to millions), draw disks, and show regroupings (as shown in the sample problem below).
- Multiply and divide by 10 using the place value chart.
- Write numbers in the following forms:
  - Unit form (e.g., 4 thousands 3 hundreds 2 ones),
  - Standard form (e.g., 4,302),
  - Expanded form (e.g., 4,000 + 300 + 2), and
  - Word form (e.g., four thousand, three hundred two).

SAMPLE PROBLEM *(From Lesson 1)*

Label the place value chart. Fill in the blanks to make the **equation** true. Draw disks in the place value chart to show how you got your answer, using arrows to show any regrouping.

5 hundreds × 10 = 50 hundreds = 5 thousands



Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Support your child as he draws and labels a place value chart (up to millions). Ask him to say a large number (up to 1 million). Represent the number on the place value chart using cereal pieces for disks. Challenge each other to say the name of the number that was created, using the number forms previously listed.
- Ask your child to think of a number less than 1 million. See how many different ways she can represent the number in unit form (e.g., 2,345 as 23 hundreds 4 tens 5 ones; 2,345 ones; or 234 tens 5 ones). Writing the number within a place value chart might be helpful in this process.
- Challenge your child (and the rest of the family!) to skip-counting contests, going forward and backward, by threes, fours, sixes, sevens, eights, and nines (e.g., 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 27, 24, 21, 18, 15, 12, 9, 6, 3, 0). Take turns saying the numbers. First, you give a number. Then your child gives a number. Help each other to stay on track!

TERMS

Equation: A statement that two expressions are equal. For example, 2,349 + 32,401 = ___ or 2,349 + 32,401 = 34,750.

Place value: The value of a given digit based on its position in a number. For example, the place value of the digit 2 in 235 is 200 (i.e., 2 hundreds).

MODELS

Place Value Chart

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

Lessons 5 and 6 emphasize **place value**. Students compare numbers and find 1, 10, and 100 thousand more and less than a number.

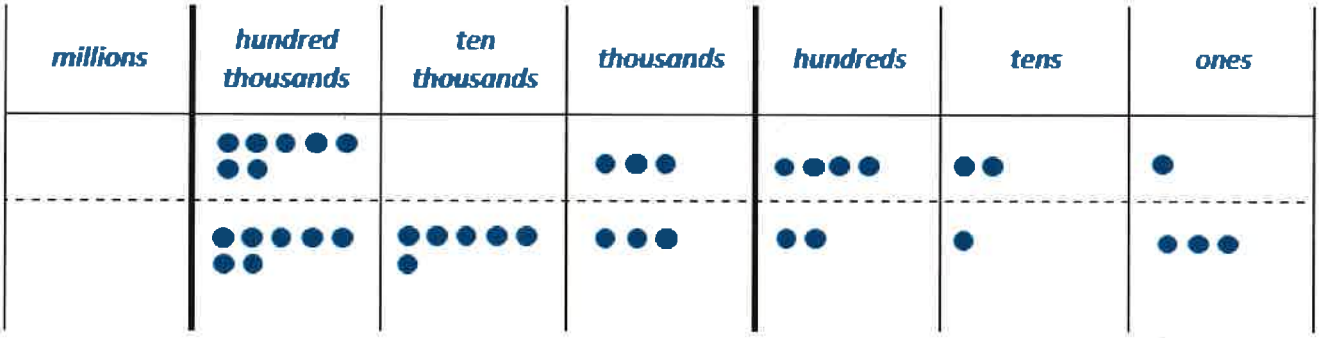
You can expect to see homework that asks your child to do the following:

- Use a **place value chart** to represent and compare two numbers.
- Compare numbers written in different forms using the symbols for less than (<), greater than (>), or equal to (=).
- Arrange numbers from least to greatest and from greatest to least.
- Find 1, 10, and 100 thousand more and less than a given number.

SAMPLE PROBLEM *(From Lesson 5)*

Label the units in the place value chart. Draw place value disks to represent each number in the place value chart. Use <, >, or = to compare the two numbers. Write the correct symbol in the circle.

703,421 (<) 763,213



Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Play the "Build a Number" game with your child. The objective of the game is to build a larger number than your opponent.
  1. Each player draws and labels a place value chart that extends to the hundred thousands.
  2. Players take turns rolling a die.
  3. Each time a player rolls, he chooses a place in his place value chart to draw disks to represent the number rolled. Only one number can be represented in each place.
  4. Play continues until each player has filled all of the places on his chart. Compare the numbers. The player with the larger number wins. (Variation: Build a smaller number.)

  Be sure to talk to your child about strategy. For example, ask your child where he would draw the disks if he rolled the number 6 and the objective was to build the largest possible number. Listen for him to say that he would draw the disks in the empty space with the largest place value (i.e., hundred thousands or the next largest place value if hundred thousands is already taken).
- Write a 4, 5, or 6-digit number on a piece of paper. On another piece of paper, write a number that is 1, 10, or 100 thousand more or less than the first number. Give the second number to your child. Ask her: What do you need to add/subtract to/from your number so that it will equal my number?

TERMS

Place value: The value of a given digit based on its position in a number. For example, the place value of the digit 2 in 235 is 200 (i.e., 2 hundreds).

MODELS

Place Value Chart

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

Lessons 7 through 10 focus on rounding numbers to the nearest hundred, thousand, ten thousand, and/or hundred thousand and using rounding skills to make estimates when solving word problems.

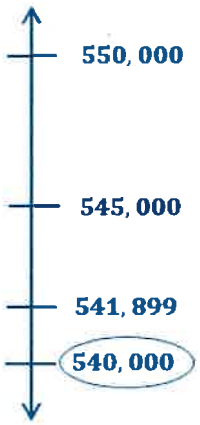
You can expect to see homework that asks your child to do the following:

- Round a number to a given place value with and without the use of a **vertical number line**.
- Estimate a **sum** by rounding (e.g., 505,341 + 193,841 ≈ 500,000 + 200,000).
- Solve word problems that involve estimating an answer.

SAMPLE PROBLEM *(From Lesson 8)*

Complete the statement by rounding the number to the given place value. Use the number line to show your work. Explain how you found your answer.

541,899 rounded to the nearest ten thousand is 540,000.



I know that there are 54 ten thousands in 541,899. That means that 541,899 comes between 540,000 and 550,000. 545,000 is the halfway point. I know that 541,899 is less than 545,000. That means it is closer to 540,000.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

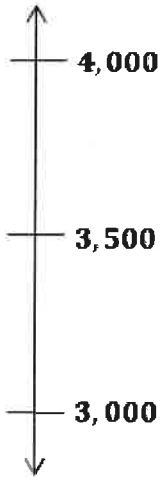
- Talk to your child about times that you use rounding, such as estimating how many grocery items you can buy with a $20 bill or how many errands you can get done in 60 minutes. Explain your thinking. Have a discussion about times when it makes sense to round and times when it is important to find an exact answer.
- Write a 6-digit number on a piece of paper. Ask your child to round the number to the nearest hundred, nearest thousand, nearest ten thousand, and nearest hundred thousand.

TERMS

Sum: The result of adding two or more numbers (e.g., in 3 + 2 = 5, the number 5 is the sum).

MODELS

Vertical Number Line



KEY CONCEPT OVERVIEW

In Lessons 11 and 12, students add multi-digit numbers and solve multi-step word problems.

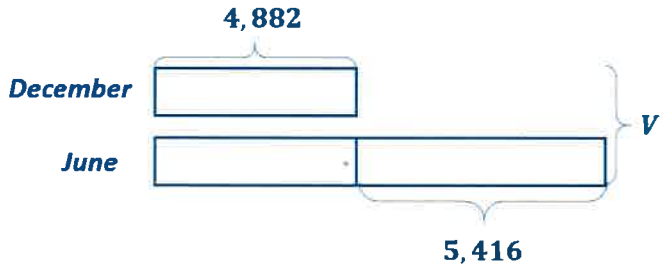
You can expect to see homework that asks your child to do the following:

- Solve addition problems using the **standard algorithm**.
- Solve word problems using variables to represent the unknown numbers and **tape diagrams** as models.
- Use rounding to check if the answers make sense.

SAMPLE PROBLEM *(From Lesson 12)*

Model the problem with a tape diagram. Estimate and then solve. Explain if your answer is reasonable.

There were 5,416 more visitors to the museum in the month of June than in the month of December. December had 4,882 visitors. How many visitors did the museum have during both months?



$V = 15{,}180$

a. About how many visitors did the museum have during June and December?

5,000 + 5,000 + 5,000 = 15,000

The museum had about 15,000 visitors during June and December.

b. Exactly how many visitors did the museum have during June and December?

The museum had exactly 15,180 visitors during June and December.

$$\begin{array}{r} 4,882 \\ 4,882 \\ +\ 5,416 \\ \hline 15,180 \end{array}$$

c. Is your answer reasonable? Compare your estimate to the answer. Write a sentence to explain your reasoning.

My answer is reasonable because my estimate of 15,000 is only about 200 less than the actual answer of 15,180. My estimate is close because two addends rounded up and one rounded down.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

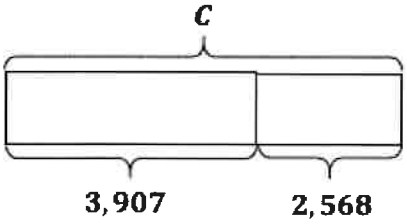
- Provide opportunities for your child to practice multi-digit addition. Ask her to look in a magazine or newspaper for numbers greater than one thousand. Tell her to choose two of the numbers and to add them together. Ask her to explain each step.
- Pose word problems to your child and ask him to solve them. For example, Mark typed 2,345 words on Monday and 3,867 words on Tuesday. How many words did Mark type altogether on Monday and Tuesday? Encourage your child to draw a tape diagram, to round to estimate an answer, and then to find the exact answer. Answers should be written as statements. Ask your child to assess the reasonableness of his answer. Does the answer make sense?
- Look at a school calendar. Prompt your child to count how many days of school there have been so far. Then, ask her to count how many days of school there are left. Ask her to calculate the total number of days in the school year, first by estimating and then by using the exact numbers. Have her draw a tape diagram to represent the problem.

TERMS

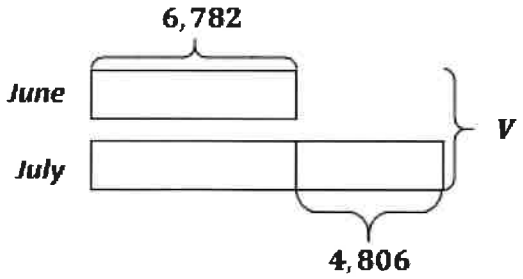
Standard algorithm: A standard step-by-step procedure to solve a particular type of problem (e.g., the process of adding vertically with regrouping is a standard algorithm).

MODELS

Tape Diagram



Tape Diagram



EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 13 through 16, students subtract multi-digit numbers and solve word problems.

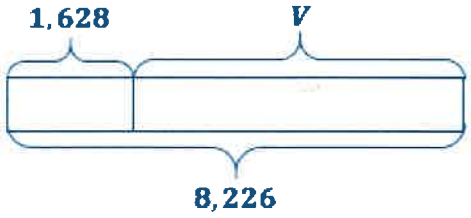
You can expect to see homework that asks your child to do the following:

- Solve subtraction problems using the **standard algorithm** and check answers using addition.
- Solve word problems using **tape diagrams** as models and **variables** to represent the unknown numbers.
- Use rounding to check if the answers make sense.

SAMPLE PROBLEM *(From Lesson 13)*

Draw a tape diagram to represent the following problem. Use numbers to solve. Write your answer as a statement. Check your answer.

What number must be added to 1,628 to result in a **sum** of 8,226?



$$\begin{array}{r} {\scriptstyle 7}\ \ {\scriptstyle 11}\ \ {\scriptstyle 11}\ \ {\scriptstyle 16} \\ 8,\ 2\ 2\ 6 \\ -\ 1,\ 6\ 2\ 8 \\ \hline 6,\ 5\ 9\ 8 \end{array} \qquad \begin{array}{r} 6,\ 5\ 9\ 8 \\ +\ 1,\ 6\ 2\ 8 \\ \hline {\scriptstyle 1}\ \ {\scriptstyle 1}\ \ {\scriptstyle 1} \\ 8,\ 2\ 2\ 6 \end{array}$$

$V = 6{,}598$

6,598 must be added to 1,628 to result in a sum of 8,226.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Provide opportunities for your child to solve multi-digit subtraction problems. For example, given that there are 365 days in a common year, ask him to count up how many days have passed so far this year and then subtract from 365 to determine the number of days left in the year. Ask him to explain each step.
- Let your child be the teacher. First, she'll need to start by coming up with a word problem for you that involves subtraction. (For example: The ice cream stand sold 1,367 cones on Monday and 988 cones on Tuesday. Solve to find out how many more cones were sold on Monday than on Tuesday.) Next, she'll need to ask you to solve the problem. Now it's your turn! Draw a tape diagram, round to estimate an answer, and then find the exact answer. Your answer should be written as a statement. Ask your child, "Is my answer reasonable? How do you know?" Then ask her to check your work to see if it's correct.

TERMS

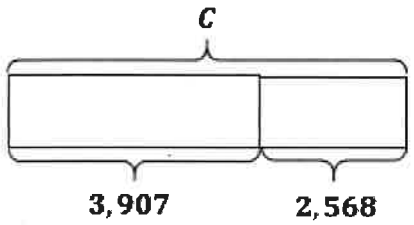
Standard algorithm: A standard step-by-step procedure to solve a particular type of problem. For example, the process of subtracting vertically with regrouping is a standard algorithm.

Sum: The result of adding two or more numbers. For example, in $3 + 2 = 5$, the number 5 is the sum.

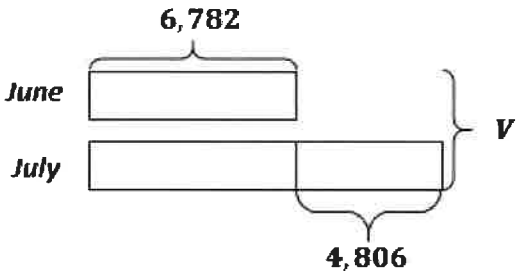
Variable: A letter that stands for a number. For example, in $5 + 2 = V$, *V is the variable.*

MODELS

Tape Diagram



Tape Diagram



EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

Lessons 17 through 19 focus on solving and creating multi-step word problems.

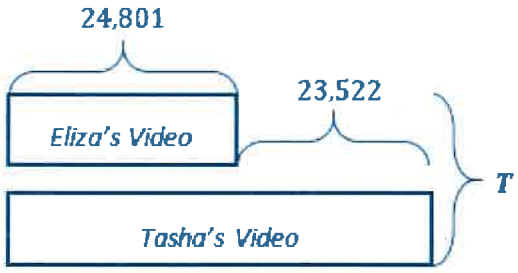
You can expect to see homework that asks your child to do the following:

- Represent word problems with **tape diagrams**, using **variables** for the unknown numbers.
- Solve word problems and write answers as statements.
- Use rounding to check if the answers make sense.
- Create and solve word problems based on tape diagrams.

SAMPLE PROBLEM *(From Lesson 19)*

Using the diagram below, create your own word problem. Solve for the value of the variable.

Eliza's video had 24,801 shares. Tasha's video had 23,522 more shares than Eliza's video. How many total shares did the videos have?



$$\begin{array}{r} 2\ 4,\ 8\ 0\ 1 \\ 2\ 4,\ 8\ 0\ 1 \\ +\ 2\ 3,\ 5\ 2\ 2 \\ \hline 7\ 3,\ 1\ 2\ 4 \end{array}$$

$T = 73{,}124$

The videos had 73,124 total shares.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

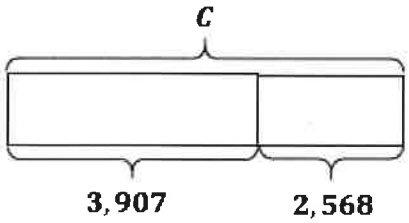
- Ask your child to restate each homework problem in her own words. Make sure she understands each problem before she begins to draw her tape diagram. After the tape diagram has been drawn, and before your child attempts to solve the problem, ask her to explain the tape diagram to you.
- As your child creates his own word problems, he may need help finding a context. Help him to think of realistic contexts that use large numbers (e.g., tickets to a concert, miles driven in one year, the cost of a new car, website 'hits', number of things made or sold).
- Let your child be the teacher. First, she should draw and label a tape diagram (using a variable for the unknown number). Next, she should prompt you to create a word problem based on the diagram. Finally, after you have created a problem and then solved it, she should check your answer.

TERMS

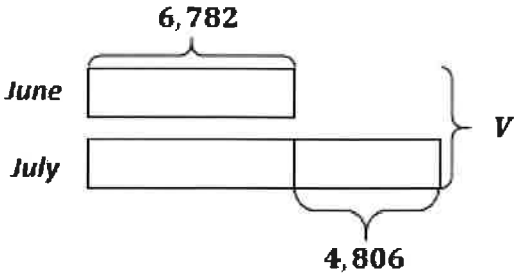
Variable: A letter that stands for a number. For example, in $5 + 2 = V$, V is the variable.

MODELS

Tape Diagram



Tape Diagram



EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

Module 2 focuses on length, mass, and capacity in the metric system. In Lessons 1 through 3, students express larger **metric units** in terms of smaller metric units (e.g., 1 km = 1,000 m).

You can expect to see homework that asks your child to do the following:

- **Convert** from larger units to smaller units (find equivalent measures).
- Add and subtract amounts expressed in **mixed units** (for example, **kilometers** and **meters**) using a **simplifying strategy** or **algorithm** (an example of each is shown in the sample problem below).
- Solve word problems using **tape diagrams** as models.

SAMPLE PROBLEM *(From Lesson 1)*

Solve using an algorithm or a simplifying strategy.

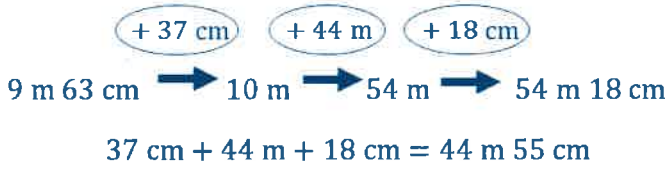
54 m 18 cm – 9 m 63 cm

Sample Response (Algorithm):

54 m 18 cm = 53 m 118 cm

	4	13		0	11		
	5	3	m	1	1	8	cm
–		9	m		6	3	cm
	4	4	m		5	5	cm

Sample Response (Simplifying Strategy):



37 cm + 44 m + 18 cm = 44 m 55 cm

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Pose questions such as, "Would we measure the distance from here to the store with centimeters, meters, or kilometers?" or "Would we measure a person's mass in grams or kilograms?" Ask your child to justify her answers.
- Practice metric conversions from a larger unit to a smaller unit. Use the units of kilometer, meter, centimeter, kilogram, gram, liter, and milliliter (e.g., 3 m = ___ cm). Make a game with index cards. Write one measurement on each card (e.g., write "3 m" on one card and "300 cm" on another card). Use the cards to play a variation of a memory game or Go Fish. The objective is to make matches of equivalent measures.
- Continue to encourage your child to practice skip-counting, forward and backward, by threes, fours, sixes, sevens, eights, and nines (e.g., 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 27, 24, 21, 18, 15, 12, 9, 6, 3, 0). As your child is successful, raise the level of difficulty. Challenge him to start at a number other than 0 (e.g., 18, 21, 24, 27, 30, 27, 24, ...).

TERMS

Algorithm: A step-by-step procedure to solve a particular type of problem (e.g., the process of subtracting vertically with regrouping).

Convert: To express a measurement in a different unit (e.g., liters expressed as milliliters).

Metric units: Units used in the metric system (e.g., centimeter, meter, kilometer, gram, kilogram, milliliter, and liter).

Centimeter (cm): Unit of measure for length.

Meter (m): Unit of measure for length.

Kilometer (km): Unit of measure for length.

Gram (g): Unit of measure for mass.

Kilogram (kg): Unit of measure for mass.

Milliliter (mL): Unit of measure for liquid volume.

Liter (L): Unit of measure for liquid volume.

Metric Conversions	
1 kg	1,000 g
1 L	1,000 mL
1 km	1,000 m
1 m	100 cm

Mixed units: Expressing a number in terms of more than one unit (e.g., 2 tens 4 ones or 2 meters 34 centimeters).

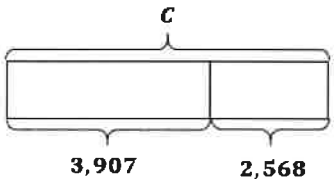
Simplifying strategy: A mental math or recorded method for making a problem easier to solve (e.g., adding to the next unit or using a number bond).

MODELS

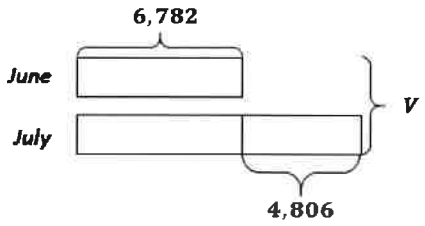
Conversion Table

Mass	
kg	g
3	
5	
	7,000

Tape Diagram



Tape Diagram



EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 4 and 5, students relate what they know about place value units as they **convert**, compare, place metric measurements on a **number line**, and solve word problems.

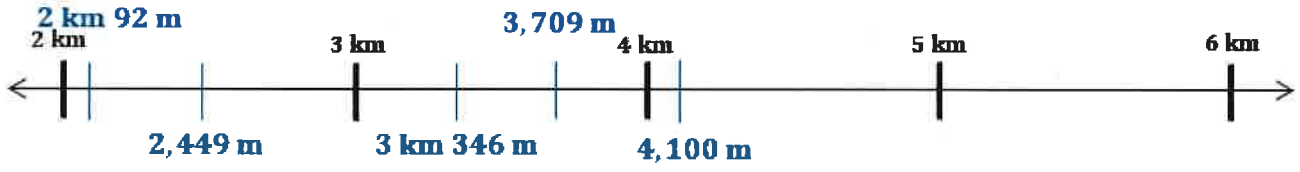
You can expect to see homework that asks your child to do the following:

- Convert **metric units** (e.g., 3 km 156 m is equal to 3,156 m).
- Compare measurements expressed in metric units (e.g., 6,225 m > 5 km 226 m).
- Place measurements on a number line (see sample problem below).
- Use a **tape diagram** to model word problems, and solve word problems involving length, mass, and capacity.

SAMPLE PROBLEM *(From Lesson 4)*

Place the following measurements on the number line.

3 km 346 m 4,100 m 2 km 92 m 3,709 m 2,449 m



Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Together with your child, look through your kitchen cupboards. Take out several cans of food. Look at the labels to see if you can find any metric units, such as grams, that are comparable. Use the measurements to line the cans up from least to greatest. Draw a number line and then plot and label the measurements.
- Ask your child to create a word problem using the measurements from several cans of food. For example, "Susie had a can of corn, a can of potatoes, and a can of soup. The can of corn had a mass of 418 grams and the can of potatoes had a mass of 425 grams. The total mass of all three cans was 1,151 grams. What was the mass of the can of soup?" Together, draw a tape diagram to model the problem. Solve.

TERMS

Convert: To express a measurement in a different unit (e.g., liters expressed as milliliters).

Metric units: Units used in the metric system. Centimeter, meter, kilometer, gram, kilogram, milliliter, and liter are all examples of metric units.

Centimeter (cm): Unit of measure for length.

Meter (m): Unit of measure for length.

Kilometer (km): Unit of measure for length.

Gram (g): Unit of measure for mass.

Kilogram (kg): Unit of measure for mass.

Milliliter (mL): Unit of measure for liquid volume.

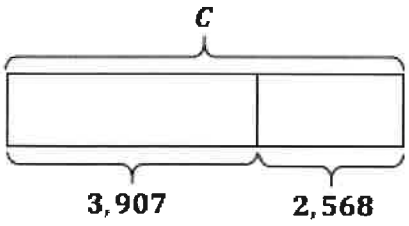
Liter (L): Unit of measure for liquid volume.

Metric Conversions	
1 kg	1,000 g
1 L	1,000 mL
1 km	1,000 m
1 m	100 cm

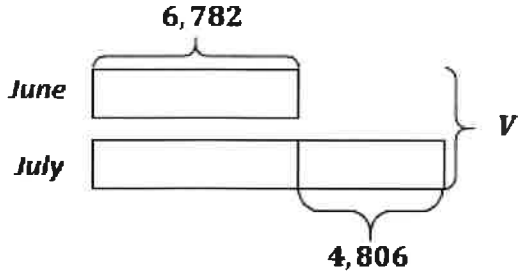
MODELS

Number Line

Tape Diagram



Tape Diagram



EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 1 through 3, students learn about the **area** and **perimeter** of rectangles. They solve word problems by using the formulas for area and perimeter.

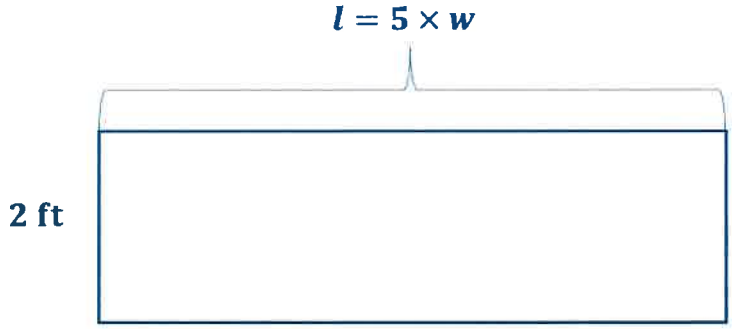
You can expect to see homework that asks your child to do the following:

- Use formulas to find the area, perimeter, and unknown side length(s) of a rectangle.
- Find the side length of a rectangle knowing that it is "___ times as long as" another side.
- Solve word problems by using the formulas for area and perimeter.

SAMPLE PROBLEM *(From Lesson 3)*

Solve the following problem. Use pictures, numbers, or words to show your work.

The length of a rectangular rug is 5 times its width. If the rug's width is 2 feet, what is its area?



$l = 5 \times 2 \text{ ft} = 10 \text{ ft}$

$A = l \times w$

$A = 10 \text{ ft} \times 2 \text{ ft}$

$A = 20 \text{ square ft}$

The area of the rug is 20 square feet.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- With your child, identify rectangular shapes in your home (e.g., window, door, top of table, top of dresser, cookie sheet, place mat, rug). Ask your child to use a tape measure or a ruler to measure the length and the width of each rectangle to the nearest inch. Then have your child find the area and perimeter of each rectangle. Keep in mind that he might need to use a calculator if the numbers are large.
- Find two dice. Give one die to your child, and keep one for yourself. Have your child roll her die. Next, roll your die. Using the number that you rolled, prompt your child to find the number that is "___ times as many as" the number that she rolled. Switch roles, and repeat.

TERMS

Area: The amount of space inside a two-dimensional shape. For example, in rectangles, Area = length × width.

Perimeter: The sum of the side lengths of a closed shape. For example, a square with a side length of 2 inches has a perimeter of 8 inches (i.e., 2 inches + 2 inches + 2 inches + 2 inches = 8 inches).

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

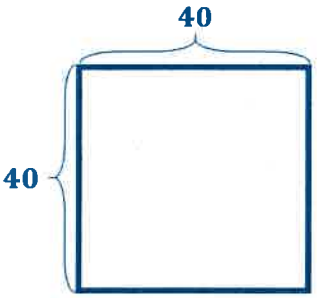
In Lessons 4 through 6, students focus on **place value** and discover patterns as they multiply a whole number by 10, 100, or 1,000 (e.g., 5 × 1,000) and multiply a whole number by multiples of 10, 100, and 1,000 (e.g., 5 × 5,000).

You can expect to see homework that asks your child to do the following:

- Draw place value disks and arrows on a **place value chart** to represent multiplication by 10, 100, and 1,000 and by multiples of 10, 100, and 1,000.
- Use an **area model** (see Sample Problem below) to represent the multiplication of a two-digit multiple of 10 by a two-digit multiple of 10 (e.g., 40 × 40).

SAMPLE PROBLEM *(From Lesson 6)*

Draw an area model to represent 40 × 40.



4 tens × 4 tens = 16 hundreds

40 × 40 = 1,600

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Help your child to remember that "tens times tens equals hundreds." Have her make 10 groups of 10 objects (e.g., make 10 groups of 10 pennies or 10 groups of 10 mini marshmallows). Ask, "How many do you have?"
- Help your child remember the value of disks in a place value chart. Take turns drawing disks in a blank place value chart, and challenge each other to read the number in unit form while looking at the place value disks. For example, if you draw 2 disks in the hundreds column, 1 disk

HOW YOU CAN HELP AT HOME
(CONTINUED)

in the tens column, and 3 disks in the ones column, your child would say, "2 hundreds, 1 ten, 3 ones."

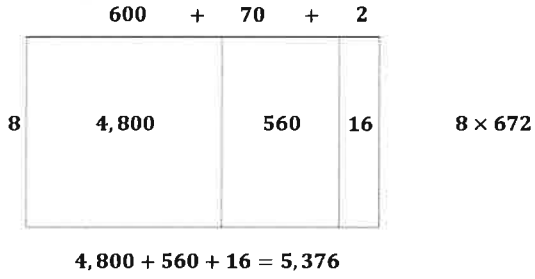
- Create a game to practice multiplication facts with your child. Each of you will need ten index cards or small pieces of paper. Number the cards so each of you has one card for each digit (0–9). Place the cards facedown in a pile. One player picks up two cards. The other player has to multiply the numbers shown on the two cards. Switch roles. See how many problems you can complete in one minute.

TERMS

Place value: The value of a given digit based on its position in a number. For example, the place value of the digit 2 in 235 is 200 (i.e., 2 hundreds).

MODELS

Area Model: A model used to help solve multiplication and division problems.



Place Value Chart

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

Lessons 7 through 11 focus on multiplication. Students multiply a one-digit number by a number with up to four digits.

You can expect to see homework that asks your child to do the following:

- Draw place value disks to represent multiplication **expressions**.
- Multiply one-digit numbers by a number with up to four digits by using the **standard algorithm**, the **partial products** method, and the area model (as shown in this order in the Sample Problem below).
- Use multiplication to solve word problems.

SAMPLE PROBLEM *(From Lesson 11)*

Solve the following expression by using the standard algorithm, the partial products method, and the area model.

9×762

$$\begin{array}{r} 7\ 6\ 2 \\ \times\quad\ 9 \\ \hline 6,\ 8\ 5\ 8 \end{array}$$

$$\begin{array}{r} 7\ 6\ 2 \\ \times\quad\ 9 \\ \hline 1\ 8 \\ 5\ 4\ 0 \\ +\ 6,\ 3\ 0\ 0 \\ \hline 6,\ 8\ 5\ 8 \end{array}$$

	700	60	2
9	6,300	540	18

9 × (700 + 60 + 2)

(9 × 700) + (9 × 60) + (9 × 2)

6,300 + 540 + 18 = 6,858

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Discuss with your child the different methods for solving multiplication expressions. Ask her to explain which one she likes best and why. This will help you to understand her math thinking and help her to verbalize her thoughts.
- Write five multiplication expressions of a one-digit number times a two-, three-, or four-digit number. Before your child solves each expression, prompt him to roll a die to determine which method to use: 1 means standard algorithm, 2 means partial products, 3 means area model, 4 means his choice, 5 means you have to solve, 6 means he can use a calculator.

TERMS

Expression: Any combination of sums, differences, products, or divisions of numbers that evaluates to a number. For example, 3×4 is an expression. Expressions do not have an equal sign.

Partial products: The result of decomposing a multiplication expression into smaller parts. For example, we can decompose 24×6 into the partial products of 20×6 and 4×6.

Standard algorithm: A standard step-by-step procedure to solve a particular type of problem. For example, the process of multiplying vertically with regrouping is a standard algorithm.

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 12 and 13, students solve word problems. The problems have multiple steps and can be solved by using a combination of addition, subtraction, and multiplication.

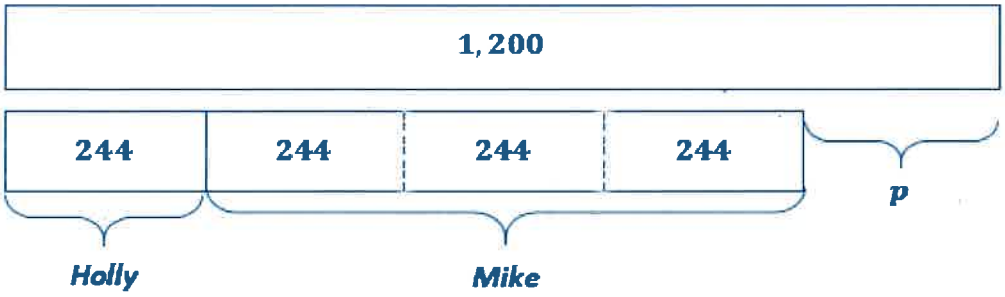
You can expect to see homework that asks your child to do the following:

- Use the **RDW process** to solve word problems.
- Create word problems that correspond to a **tape diagram**.

SAMPLE PROBLEM *(From Lesson 12)*

Use the RDW process to solve the following problem.

Holly delivered 244 newspapers. Mike delivered three times as many newspapers as Holly. Their goal was to deliver 1,200 newspapers altogether. How many more newspapers do they have to deliver to meet their goal?



$$\begin{array}{r} 244 \\ \times \quad 4 \\ \hline 976 \end{array}$$

$$\begin{array}{r} {}^{0}\cancel{1},{}^{11}\cancel{2}{}^{1}\cancel{0}{}^{9}\cancel{0}{}^{10}\cancel{0} \\ -\quad 976 \\ \hline 224 \end{array}$$

Holly and Mike have to deliver 224 more newspapers to meet their goal.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

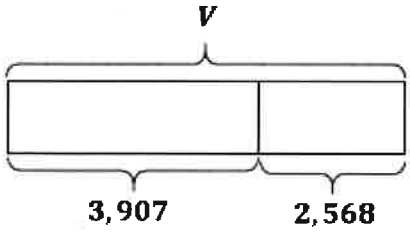
- With your child, read a magazine article or a page from a book. Together, use the context of what you've read to create a word problem. Solve the problem together by using the RDW process. Have your child write the problem on a clean sheet of paper and take it and the solution with her to school. Prompt her to challenge one of her classmates to solve the problem. The original solution can be used as an answer key.
- Continue to practice basic facts for addition, subtraction, multiplication, and division. Find fact practice websites that are interactive and fun.

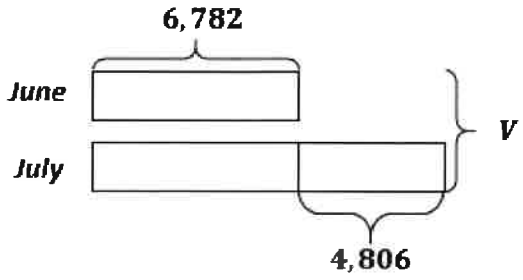
TERMS

RDW process: A three-step process used in solving word problems. **RDW** stands for Read, Draw, Write: **R**ead the problem for understanding; **D**raw a model (e.g., a tape diagram) to help make sense of the problem; **W**rite an equation and a statement of the answer.

MODELS

Tape Diagram





EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

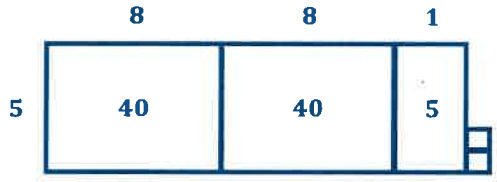
Lessons 14 through 21 focus on division. Students develop an understanding of **remainders**. They use different methods to solve division problems.

You can expect to see homework that asks your child to do the following:

- Use the RDW process to solve word problems involving remainders.
- Show division by using place value disks, arrays, **area models**, and **long division**.
- Check division answers by using multiplication and addition.

SAMPLE PROBLEM *(From Lesson 21)*

Solve 87 ÷ 5 by using an area model. Use long division and the **distributive property** to record your work.



(40 ÷ 5) + (40 ÷ 5) + (5 ÷ 5)
= 8 + 8 + 1
= 17

Check: (5 × 17) + 2 = 87

```
   1 7  R2
5 | 8 7
  - 5
  -----
    3 7
  - 3 5
  -----
      2
```

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

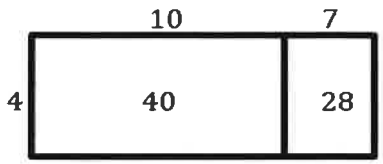
- Provide your child with many opportunities to interpret remainders. For example, give scenarios such as the following: Arielle wants to buy juice boxes for her classmates. The juice boxes come in packages of 6. If there are 19 students in Arielle's class, how many packages of juice boxes will she need to buy? (4) Will there be any juice boxes left? (Yes) How many? (5)
- Play a game of Remainder or No Remainder with your child.
  1. Say a division expression like $11 \div 5$.
  2. Prompt your child to respond with "Remainder!" or "No remainder!"
  3. Continue with a sequence such as $9 \div 3$ (No remainder!), $10 \div 3$ (Remainder!), $25 \div 3$ (Remainder!), $24 \div 3$ (No remainder!), and $37 \div 5$ (Remainder!). See how many problems your child can answer in one minute.

TERMS

Distributive property: A property of multiplication that can be used to create an easier problem, for example, 6 fours = 5 fours + 1 four or $6 \times 4 = (5 \times 4) + (1 \times 4)$.
Long division: A process taken to solve a division problem; also known as the standard algorithm for division.
Quotient: The resulting answer when one number is divided by another. For example, in $28 \div 4 = 7$, the number 7 is the quotient.
Remainder: The number left over when a whole number is divided by a whole number, for example, $25 \div 6 = 4$ with a remainder of 1.
Standard algorithm: A standard step-by-step procedure to solve a particular type of problem. For example, the process of long division is a standard algorithm.

MODELS

Area Model: A model used to help solve multiplication and division problems.



$68 \div 4 = 17$

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

In Lessons 22 through 25, students identify **factors** that make up a number less than 100. They also identify **multiples**, **prime numbers**, and **composite numbers**.

You can expect to see homework that asks your child to do the following:

- Determine and record the factors and multiples of given numbers.
- Determine whether a number is prime or composite.
- Determine whether a given number is a factor of another number.
- Determine whether a given number is a multiple of another number.

SAMPLE PROBLEM *(From Lesson 22)*

Find all the factors for the following numbers, and classify each number as prime or composite. Explain your classification of each as prime or composite.

Factor Pairs for 27	
1	27
3	9

Factor Pairs for 31	
1	31

The number 27 is a composite number. It has more than two factors. The number 31 is prime. Its only factors are 1 and itself.

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Create or print a hundreds chart. Have your child use crayons to color all of the multiples of a given number between 1 and 10. Choose a different color for each multiple. Look for and discuss any patterns that your child sees. For example, when coloring multiples of 2, your child should notice that the multiples all appear in the same columns and all end in 0, 2, 4, 6, or 8. When coloring multiples of 9, he should notice that the multiples appear in a diagonal pattern.
- Lay a calendar on the table. Ask your child to close her eyes. Prompt her to circle her pointer finger two times in the air, to place her finger on the calendar, and then to open her eyes. If the number that her finger has landed on is 10 or less, have her list the multiples of that number as high as she can successfully go. If the number is greater than 10, have her list the factors of that number and state whether the number is prime or composite.

TERMS

Associative property (of multiplication): When multiplying three or more numbers, the product will be the same regardless of how the numbers are grouped, for example, $6 \times 3 \times 8 = (6 \times 3) \times 8 = 6 \times (3 \times 8)$.
Composite number: A number with three or more factors. For example, 8 is a composite number because it has four factors: 1, 2, 4, and 8.
Factor: A number that is multiplied by another number. For example, in $3 \times 4 = 12$, the numbers 3 and 4 are factors. We can say, therefore, that 3 and 4 are factors of 12.
Multiple: The product of a given number and any other whole number. For example, 20 is a multiple of 10 because $2 \times 10 = 20$.
Prime number: A whole number greater than 1 with only two factors—1 and itself. For example, 3 is a prime number because it has only two factors—1 and 3.

EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

Lessons 26 through 33 focus on dividing three- and four-digit numbers by one-digit numbers, using different methods.

You can expect to see homework that asks your child to do the following:

- Divide by using place value disks, **long division**, and the **area model**.
- Check division work by using multiplication.
- Draw **tape diagrams** (see Sample Problem below) and solve division word problems, identifying whether the size of the groups or number of groups is unknown.
- Solve division word problems with **remainders**.

SAMPLE PROBLEM *(From Lesson 31)*

Solve the following problem. Draw a tape diagram to help you solve. Identify whether the group size or the number of groups is unknown.

A group of students equally shared 816 liters of water. If each student received 2 liters of water, how many students received water?

Number of groups unknown

$$\begin{array}{r} 4\ 0\ 8 \\ 2\overline{)\,8\ 1\ 6} \\ -\ 8 \\ \hline 0\ 1 \\ -\ \ 0 \\ \hline 1\ 6 \\ -\ 1\ 6 \\ \hline 0 \end{array}$$

408 ***students received water.***

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Discuss with your child times when you might use division in everyday life. For example, you have $20 to spend on bagels. If each bagel costs $3, how many bagels can you buy? (6) Or, you have 37 orange slices to give to 8 soccer teammates. You want to give each of them 5 orange slices. Do you have enough? (No. You would need 40.)
- Take turns flipping a coin and creating word problems. If the coin lands on heads, create a word problem in which the size of the group is unknown (e.g., Sarah divided her 124 stickers equally among 4 of her friends. How many stickers will each of them get? (31)). If the coin lands on tails,

HOW YOU CAN HELP AT HOME *(CONTINUED)*

create a word problem in which the number of groups is unknown (e.g., Sarah gave away a total of 124 stickers. If she gave each of her friends 31 stickers, how many friends received stickers? (4)). Challenge each other to solve the problems.

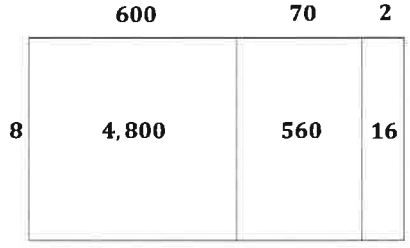
- Ask your child to draw and label a place value chart. Create a four-digit number on the chart, using cereal or raisins for disks. Ask your child to use his "disks" to demonstrate how to divide the number by 2, 3, or 4.

TERMS

Long division: A process taken to solve a division problem, also known as the standard algorithm for division.
Remainder: The number left over when a whole number is divided by another whole number. For example, $25 \div 6 = 4$ with a remainder of 1.

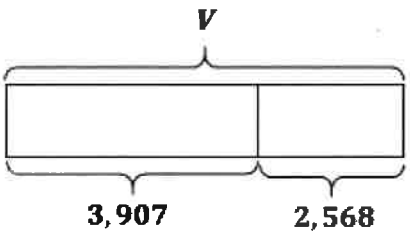
MODELS

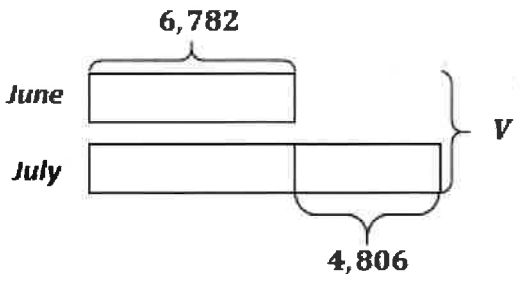
Area Model: A model used to help solve multiplication and division problems.



$5,376 \div 8 = (4,800 \div 8) + (560 \div 8) + (16 \div 8)$
$= 600 + 70 + 2$
$= 672$

Tape Diagram





EUREKA MATH™ TIPS FOR PARENTS

KEY CONCEPT OVERVIEW

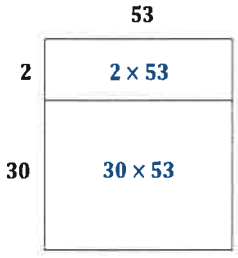
Lessons 34 through 38 focus on representing and solving multi-digit multiplication problems. Students use different methods to work with two-digit by two-digit multiplication problems.

You can expect to see homework that asks your child to do the following:

- Represent and solve multiplication expressions by using **area models**, **partial products**, and the **distributive property** (as shown in the Sample Problem below).
- Demonstrate knowledge of the **associative property of multiplication**.
- Use the standard algorithm to solve two-digit by two-digit multiplication problems.

SAMPLE PROBLEM *(From Lesson 38)*

Use the distributive property to express 32 × 53 as two partial products. Solve.



32 × 53 = (2 × 53) + (30 × 53)

$$\begin{array}{r} 53 \\ \times\ 32 \\ \hline 106 \quad 2 \times 53 \\ +\ 1,590 \quad 30 \times 53 \\ \hline 1,696 \end{array}$$

$$\begin{array}{r} 53 \\ \times\ 2 \\ \hline 106 \end{array} \qquad \begin{array}{r} 53 \\ \times\ 30 \\ \hline 90 \\ +\ 1,500 \\ \hline 1,590 \end{array}$$

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Together with your child, look back at the multiplication work he did at the beginning of the module. Chances are he will be surprised at how much he's learned! Ask him what success makes him the most proud. For example, perhaps he struggled at first with using the area model to model multiplication, but now he understands it.
- Prompt your child to talk about her favorite method for solving two-digit by two-digit multiplication (area model, partial products method, distributive property, or multiplication algorithm). Ask her to explain why that method is her favorite.
- Continue to practice basic facts for addition, subtraction, multiplication, and division. The goal is to know the facts by heart.

TERMS

Associative property of multiplication: When multiplying three or more numbers, the product will be the same regardless of how the numbers are grouped. For example, $6 \times 3 \times 8 = (6 \times 3) \times 8 = 6 \times (3 \times 8)$ illustrates the associative property.

Distributive property: A property of multiplication that can be used to create an easier problem. For example, consider that 6 fours = 5 fours + 1 four or $6 \times 4 = (5 \times 4) + (1 \times 4)$.

Partial products: The result of decomposing a multiplication expression into smaller parts. For example, we can decompose 24×6 into the partial products of 20×6 and 4×6.

MODELS

Area Model: A model used to help solve multiplication and division problems.