



Core Focus

- Dividing four-digit numbers by one-digit divisors (with remainders)
- Dividing four-digit numbers by two-digit divisors (with remainders) and word problems
- Describing polygons by their angles
- Identifying polygons and exploring categories of quadrilaterals and triangles

Division

- When students make the transition from mentally dividing to using the algorithm, it is important to maintain the “divide by” language.
- The strategy of applying partitioning to mentally divide is essentially the same as the formal written algorithm of recording in the traditional vertical form.
- In the following problem, students use what they know about the sharing strategy and the area model formula to solve a division problem. The key is to choose convenient ways to do the splitting, so the division becomes easy to perform.

5.1

Step In Reviewing Division Strategies

Carrina bought a cell phone for \$369. She paid for it in three equal monthly payments. How could you figure out the amount she paid each month?

Marcela used a sharing strategy. What do the blocks represent?

How could you share these blocks into three equal groups? Loop the blocks to show the amount in each share.

Leonardo used a different strategy. He followed these steps.

Step 1

He drew a rectangle to show the problem. The length of one side becomes the unknown value.

3	369
	P

Step 2

He split the rectangle into parts so that it was easier to divide by 3.

3	300	60	9
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Step 3

He thought:

$$\begin{array}{l} 3 \times 100 = 300 \\ 3 \times 20 = 60 \\ 3 \times 3 = 9 \end{array}$$

3	300	60	9
	100	+ 20	+ 3

$12 \div 3 = 4$

dividend divisor quotient

I'll call the amount that is paid each month P.

$$P = 369 \div 3$$

In this lesson, students can split blocks into three equal groups or use the area model to split 3-digit dividends into parts that are easily divisible by 1-digit divisors.

- Students have developed a firm foundation in the place value strategies for division due to the work covered in Grade 4 and are now ready to explore the procedure for the long division algorithm.

Leon continued the standard algorithm. He followed these steps.

	1	4	4	1	
5	7	2	0	6	0
	-5				
	2	2			
	-2	0			
		2	0		
		-2	0		
			0	6	
				-5	
				1	

	1	4	4	1	
5	7	2	0	6	0
	-5				
	2	2			
	-2	0			
		2	0		
		-2	0		
			0	6	
				-5	
				1	0

	1	4	4	1	2
5	7	2	0	6	0
	-5				
	2	2			
	-2	0			
		2	0		
		-2	0		
			0	6	
				-5	
				1	0
					0

In this lesson, students use the standard long division algorithm to solve division problems involving remainders.

Ideas for Home

- Practice mental division problems in game situations. Write division expressions on separate cards. Using a snakes and ladders board, students read the card and then state multiples of the divisor before moving their counter e.g. a card with the expression $336 \div 3$ is turned over. The students answers “ $300 \div 3$ is 100 and $36 \div 3$ is 12, which equals 112.”
- Play the card game memory by creating pairs of cards that have the expression on one card and the matching answer on another card.

Glossary

- ▶ The **dividend** is the number that is split into smaller equal parts when division is performed.
- ▶ The **divisor** is the number that indicates how many parts the dividend is to be split into, or the number in each part.
- ▶ The **quotient** is the missing information in a division problem (the answer).
- ▶ The **standard division algorithm** is the paper and pencil procedure for long division that most adults were taught exclusive to any other method.

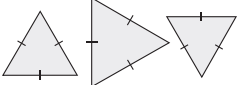
Geometry

- Students extend their skills with identifying and naming triangles and quadrilaterals according to a shape's angles, length of sides, and other important properties (such as parallel sides).
- Triangles are used to construct other shapes where the known angles can be used to determine the angles in the composite shape, such as a quadrilateral.
- Students explore relationships among different types of quadrilaterals, such as parallelograms (two pairs of parallel sides), rectangles (parallelograms with right angles), rhombuses (parallelograms with all sides the same length), and squares (a special type of rectangle with all sides the same length).
- A "family tree" is used to illustrate how the various quadrilaterals are related to each other because many of the categories overlap. E.g. a rectangle is both a quadrilateral and a parallelogram.
- Students build a classification system for triangles.


5.12

Step In Identifying Categories of Triangles

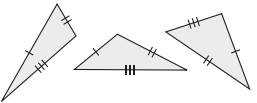
Measure the sides of these triangles.
Why do you think these are called **equilateral triangles**?



These shapes are called **isosceles triangles**.
How are they all the same?



These shapes are called **scalene triangles**.
How are these different from the other triangles?



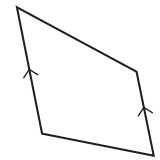
In this lesson, students examine defining features of triangles.

Ideas for Home

- Help your child identify parallelograms in your home, neighborhood, or town. Some examples might include floor tiles, business logos, stripes in a parking lot, or patterns of windows on a building.

Glossary

- ▶ A **polygon** is any simple, closed, two-dimensional shape formed by three or more straight line segments.



- ▶ A four-sided polygon is called a **quadrilateral**.

