

# Lesson 5-4

## Interpret Remainders

# Objective:

Today, we will solve division problems and interpret remainders.

# Standard:

NC.4.NBT.6 Find whole-number quotients and remainders with up to three-digit dividends and one-digit divisors with place value understanding using rectangular arrays, area models, repeated subtraction, partial quotients, properties of operations, and/or the relationship between multiplication and division.

## I Can Statement:

- I can apply what I know about dividing items into equal groups to solve problems.

## Essential Question:

- After dividing, what do you do with the remainder?

# VOCABULARY

|                  |                                                                                        |                                                           |
|------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------|
| <b>dividend</b>  | the number to be divided up into smaller groups<br>the <b>dividend</b> .               | EX: <b>10</b> ÷ 5 = 2; <b>10</b> is the <b>dividend</b> . |
| <b>divisor</b>   | tells how many groups to make from the dividend<br>the <b>divisor</b> .                | EX: 10 ÷ <b>5</b> = 2; <b>5</b> is the <b>divisor</b> .   |
| <b>quotient</b>  | the answer to a division problem.                                                      | X: 10 ÷ 5 = 2; <b>2</b> is the <b>quotient</b> .          |
| <b>division</b>  | an operation that tells how many equal groups there are or how many are in each group. |                                                           |
| <b>estimate</b>  | to give an approximate value rather than an exact answer.                              |                                                           |
| <b>remainder</b> | the number that remains after the division is complete.                                |                                                           |

On yesterday, we used basic facts and boxing zeros to estimate numbers.

There will be some division problems that have an amount left over when a number can't be divided **EVENLY**. Let's look at  $43 \div 8$ ?

# THINKING



$$43 \div 8 =$$

How many groups of 8 are in 43? Think of multiples to help you find the quotient.

8, 16, 24, 32, 40

Looking at the multiple, it is close to the dividend.  
 $43 - 40 = 3$

I have 5 groups of 8, but it seems to be 3 left from the group of 43.

$$43 \div 8 =$$

The quotient is 5 with a remainder of 3 or  
5 R3.

Use an "R" to represent the remainder.

$$43 \div 8$$

$$\begin{array}{r} 5 \text{ R } 3 \\ 8 \overline{) 43} \\ \underline{-40} \\ 3 \end{array}$$

You can make 8  
WHOLE groups  
with 5 objects  
in each.



$5 \times 8 = 40$ . We used 40  
objects out of 43.  
Subtract  $43 - 40$  and  
there are 3 left over.

Quotient 5R3

THINKING



$$69 \div 7 =$$

How many groups of 7 are in 69? Think of multiples to help you find the quotient.

7, 14, 21, 28, 35, 42, 49, 56, 63

$$69 \div 7$$

$$\begin{array}{r} 9 \text{ R}6 \\ 7 \overline{) 69} \\ \underline{-0} \phantom{0} \\ 69 \\ \underline{-63} \\ 06 \end{array}$$

You can make 7  
WHOLE groups  
with 9 objects  
in each.



$7 \times 9 = 63$ . We used 63  
objects out of 69.  
Subtract  $69 - 63$  and  
there are 6 left over.

Quotient 9R6

When solving word problems we may have a remainder that we need to interpret. That means we should ask ourselves, "What does my answer mean?"

Let's look at some examples of what to do when you have a remainder and need to interpret the word problems.

Laila baked 27 cookies and put them in 4 boxes. How many boxes did she fill?

Think about the multiples of 4!

4, 8, 12, 16, 20, 24

$$27 \div 4$$

$$\begin{array}{r} 06 \\ 4 \overline{) 27} \\ \underline{-0} \phantom{0} \\ 27 \\ \underline{-24} \\ \hline R3 \end{array}$$



She filled 6 boxes. The remainder can be ignored because the question asked for the total number of boxes to be filled.

$4 \times 6 = 24$ . We used 24 objects out of the 27. Subtract  $27 - 24$  and there are 3 left over.

Quotient 6

Laila baked 27 cookies and put them in 4 boxes. How many boxes did she use altogether?

Think about the multiples of 4!

4, 8, 12, 16, 20, 24

$$27 \div 4$$

$$\begin{array}{r} 06 \text{ R}3 \\ 4 \overline{) 27} \\ \underline{-0} \phantom{0} \\ 27 \\ \underline{-24} \\ 03 \end{array}$$



She used 7 boxes! The question asks how many boxes used altogether. Because there is a remainder, add 1 to the quotient.

$$6 + 1 = 7$$

$4 \times 6 = 24$ . We used 24 objects out of the 27. Subtract  $27 - 24$  and there are 3 left over.

Laila baked 27 cookies and put them in 4 boxes. How many cookies did she put in the last box?

Think about the multiples of 4!

4, 8, 12, 16, 20, 24

$$27 \div 4$$

$$\begin{array}{r} 06 \text{ R}3 \\ 4 \overline{) 27} \\ \underline{-0} \phantom{0} \\ 27 \\ \underline{-24} \\ 03 \end{array}$$



She put 3 cookies in the last box. The question asks, how many cookies are in the last box. The answer to the question is the remainder.

$4 \times 6 = 24$ . We used 24 objects out of the 27. Subtract  $27 - 24$  and there are 3 left over.

Quotient 6R3

# INDEPENDENT PRACTICE



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Problems 7-13

2

3

1

What does it meant to  
interpret a remainder? Can you  
give an example?

2

3

EXIT TICKET

