

Lesson 12:

Divide two- and three-digit numbers by multiples of 10.

CCSS Standard – 5.NBT.B.6

FLUENCY (10-min)

Whiteboard Exchange: Powers of 10



First, write the number in exponential form.

Then, write the number as a multiplication expression using only 10 as a factor .

$$100 = \boxed{} = \boxed{}$$

$$1,000 = \boxed{} = \boxed{}$$

$$100,000 = \boxed{} = \boxed{}$$

$$10,000 = \boxed{} = \boxed{}$$

$$10 = \boxed{} = \boxed{}$$

$$1,000,000 = \boxed{} = \boxed{}$$

FLUENCY (10-min)

Counting by Multiples of 2 and 20



Say the first ten multiples of 2. Ready?

Multiples of 2: , , , , , ,

Say the first ten multiples of 20. Ready?

Multiples of 20: , , , , , ,

Notice: the numbers in the multiples of 20
are **10 times** as much as the multiples of 2.

FLUENCY (10-min)

Choral Response: Divide in Unit and Standard Form

Raise your hand when you know the answer to each question. Wait for my signal.

$$4 \text{ tens} \div 2 \text{ tens} = \underline{\quad}$$

How many groups of 2 tens are in 4 tens?

$$\square \div \square = \square$$

Now, say the equation with the numbers in standard form.

Let's try some more!

FLUENCY (10-min)**Choral Response: Divide in Unit and Standard Form**

Raise your hand when you know the answer to each question. Wait for my signal.

$$8 \text{ tens} \div 2 \text{ tens} = \underline{\quad}$$

$$\square \div \square = \square$$

$$6 \text{ tens} \div 3 \text{ tens} = \underline{\quad}$$

$$\square \div \square = \square$$

$$9 \text{ tens} \div 3 \text{ tens} = \underline{\quad}$$

$$\square \div \square = \square$$

$$4 \text{ tens} \div 4 \text{ tens} = \underline{\quad}$$

$$\square \div \square = \square$$

$$12 \text{ tens} \div 2 \text{ tens} = \underline{\quad}$$

$$\square \div \square = \square$$

$$15 \text{ tens} \div 3 \text{ tens} = \underline{\quad}$$

$$\square \div \square = \square$$

$$24 \text{ tens} \div 4 \text{ tens} = \underline{\quad}$$

$$\square \div \square = \square$$

$$35 \text{ tens} \div 5 \text{ tens} = \underline{\quad}$$

$$\square \div \square = \square$$

$$30 \text{ tens} \div 6 \text{ tens} = \underline{\quad}$$

$$\square \div \square = \square$$

LAUNCH (5-min)

Students identify methods to divide by multiples of 10.

Miss Song separates 360 T-shirts into boxes.
She puts 40 T-shirts into each box.

*Work with a partner to determine the EXACT number of boxes of T-shirts she will have.
Try to use more than one method to solve.*

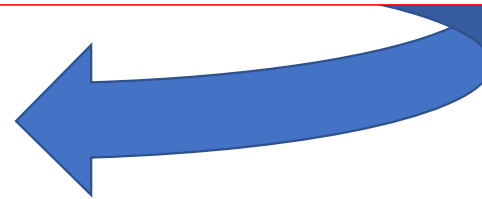
How can you check that your answer is correct?

LEARN (35-min)

Divide by Multiples of 10.

Miss Song separates 360 T-shirts into boxes.
She puts 40 T-shirts into each box.

$$360 \div 40$$

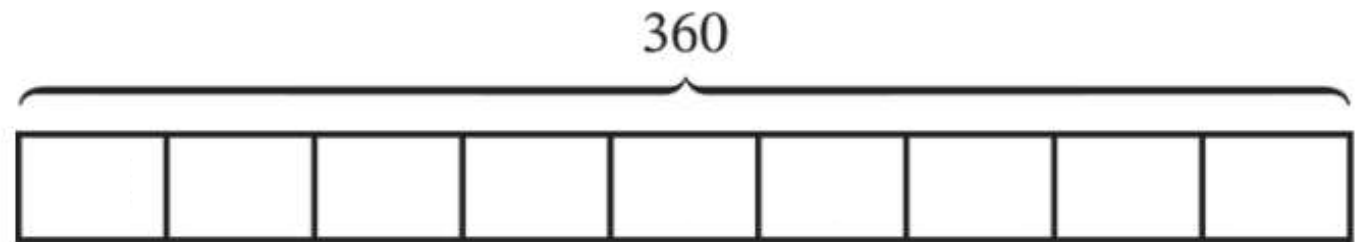


How can we interpret this division problem?

Can we draw a tape diagram?

$$360 \div 40 =$$

9

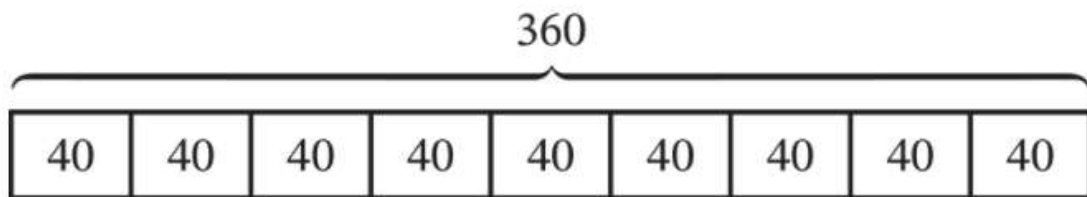
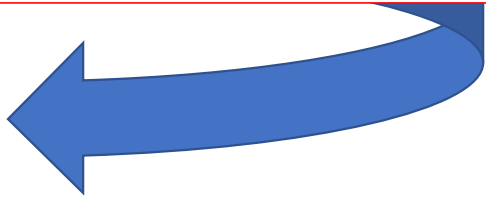
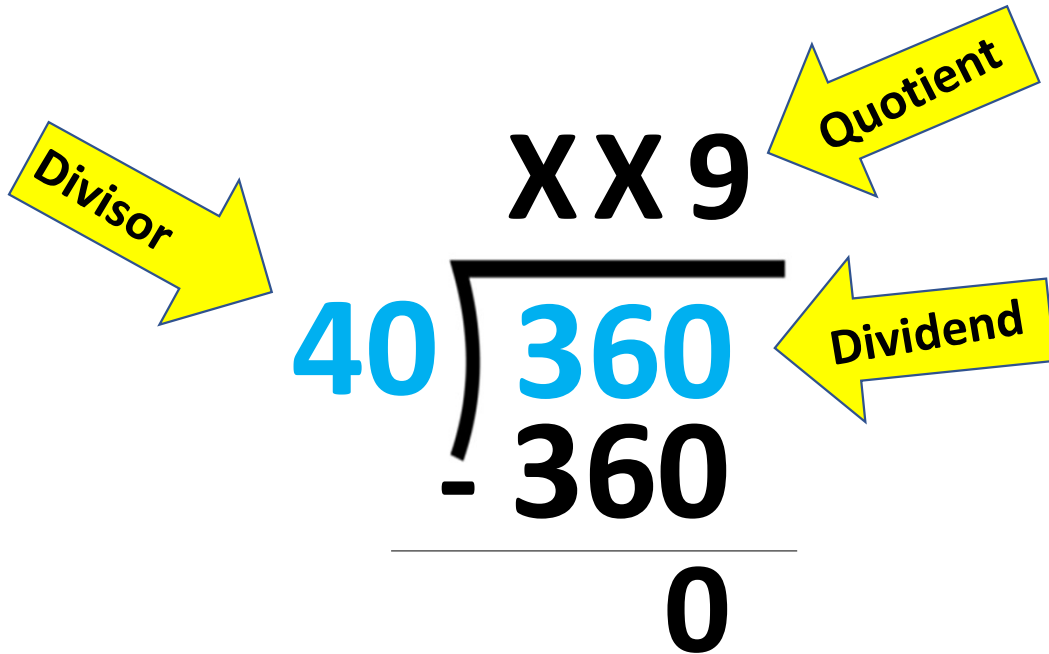


*The tape diagram shows 360 is equivalent to 9 groups of 40.
How do you know by looking at the tape diagram that the remainder is zero?*

LEARN (35-min)

Divide by Multiples of 10.

Miss Song separates 360 T-shirts into boxes.
She puts 40 T-shirts into each box.



$$\begin{array}{r} 9 \\ 40 \overline{) 360} \\ - 360 \\ \hline 0 \end{array}$$

$$360 \div 40 = 9$$

LEARN (35-min)

Division that involves dividing by multiples of 10

Mr. Perez separates **216** hats into bags.
He fills each bag with **30** hats and
donates the remaining hats to a raffle.
How many hats does he donate?

216 represents the **TOTAL** number of hats being separated.

30 represents the number of hats in **EACH** bag.

$$\begin{array}{r} \text{Divisor} \rightarrow 30 \overline{) 216} \leftarrow \text{Dividend} \end{array}$$

LEARN (35-min)

Division that involves dividing by multiples of 10

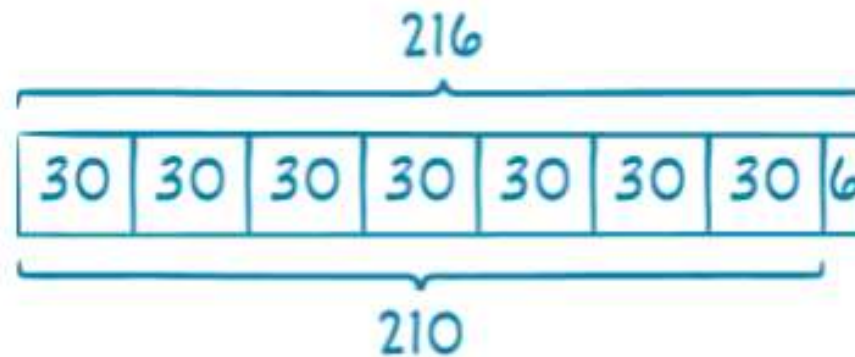
Mr. Perez separates 216 hats into bags.
He fills each bag with 30 hats and
donates the remaining hats to a raffle.
How many hats does he donate?

$$\begin{array}{r} \text{XX7}^{\text{R6}} \\ 30 \overline{) 216} \\ \underline{- 210} \\ 6 \end{array}$$

Remainder → 6

Can we ESTIMATE to find an approximate answer?

$$\begin{array}{r} 210 \div 30 \\ 7 \end{array}$$

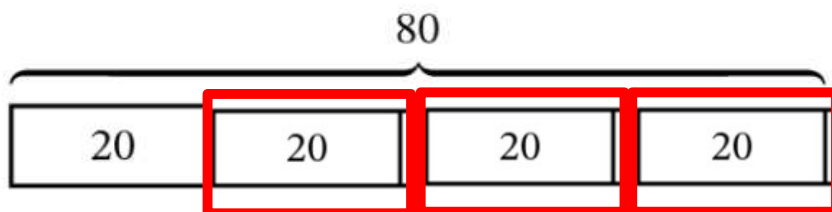


Complete the tape diagram. Then complete the vertical form and check your work.

1. $80 \div 20$

$$8 \div 2 = 4$$

$$80 \div 20 = 4$$



$$\begin{array}{r} 4 \\ 20 \overline{)80} \\ \underline{-80} \\ 0 \end{array}$$

Check:

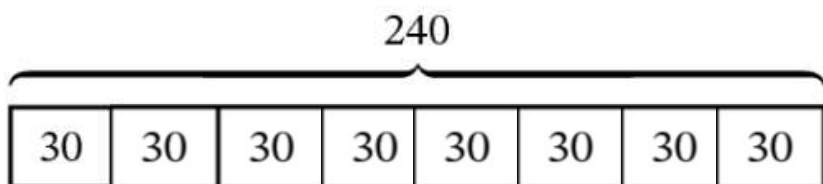
$$80 = \underline{4} \times \underline{20}$$

LEARN (35-min)

2. $240 \div 30$

$$24 \div 3 = 8$$

$$240 \div 30 = 8$$



$$\begin{array}{r} 8 \\ 30 \overline{) 240} \\ \underline{-240} \\ 0 \end{array}$$

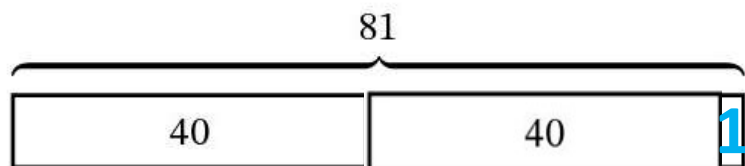
Check:

$$240 = \underline{8} \times \underline{30}$$

LEARN (35-min)

Estimate the quotient. Complete the tape diagram. Then complete the vertical form and check your work.

3. $81 \div 40 \approx \underline{80} \div \underline{40} = \underline{2}$



$$\begin{array}{r} 2 \\ 40 \overline{)81} \\ \underline{-80} \\ 1 \end{array}$$

Quotient: 2

Remainder: 1

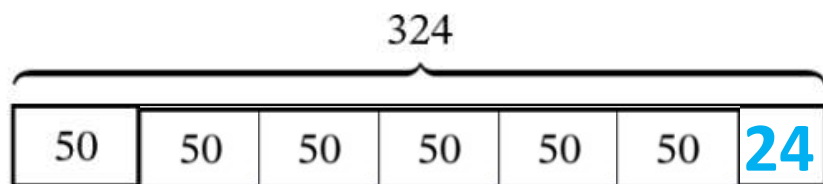
Check:

$$81 = \underline{2} \times \underline{40} + \underline{1}$$

LEARN (35-min)



4. $324 \div 50 \approx \underline{300} \div \underline{50} = \underline{6}$



$$\begin{array}{r} 6 \\ 50 \overline{) 324} \\ \underline{-300} \\ 24 \end{array}$$

Quotient: 6

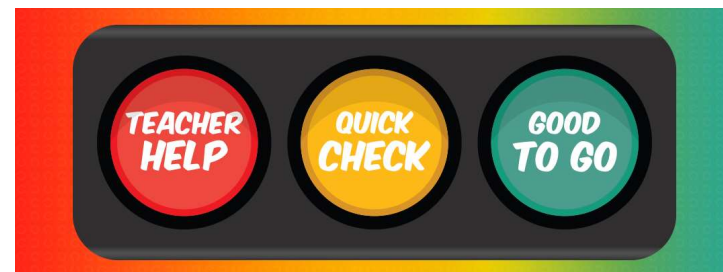
Remainder: 24

Check:

$$324 = \underline{6} \times \underline{50} + \underline{24}$$

LAND (10-min)

Exit Ticket



 **12**

Consider the expression shown.

$$655 \div 80$$

a. Draw and label a tape diagram to represent the expression.

b. Determine the quotient and remainder.

Quotient: _____

Remainder: _____

c. Write an equation to check your work.

Exit Ticket – PAGE 105

Small Group Time:

Problem Set Page 101-102

Homework:

Page 77 APPLY BOOK