Name _____

Model Division with Regrouping

Essential Question How can you use base-ten blocks to model division with regrouping?

Common Core **Number and Operations in Base Ten—4.NBT.B.6**

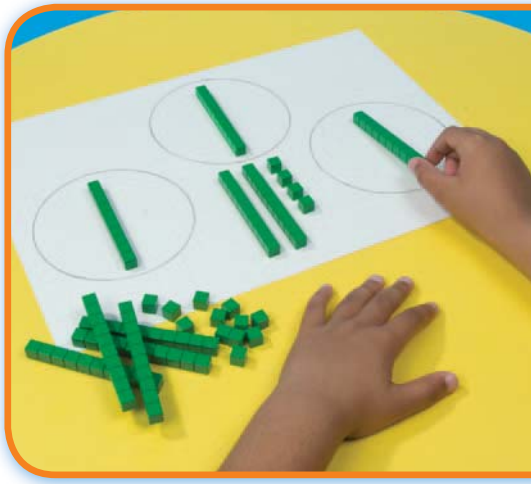
MATHEMATICAL PRACTICES
MP2, MP4, MP6

Investigate

Hands On

Materials ■ base-ten blocks

The librarian wants to share 54 books equally among 3 classes. How many books will she give to each class?



A. Draw 3 circles to represent the classes. Then use base-ten blocks to model 54. Show 54 as 5 tens and 4 ones.

B. Share the tens equally among the 3 groups.

C. If there are any tens left, regroup them as ones. Share the ones equally among the 3 groups.

D. There are _____ ten(s) and _____ one(s) in each group.

So, the librarian will give _____ books to each class.

Draw Conclusions

1. THINK SMARTER Explain why you needed to regroup in Step C.

_____

_____

2. How you can use base-ten blocks to find the quotient of 92 ÷ 4?

_____

_____

_____

_____

Make Connections

Use the quick picture at the bottom of the page to help you divide.
Record each step.

Find 76 ÷ 3.

STEP 1

Model 76 as 7 tens 6 ones.
Draw three circles to represent equal groups.

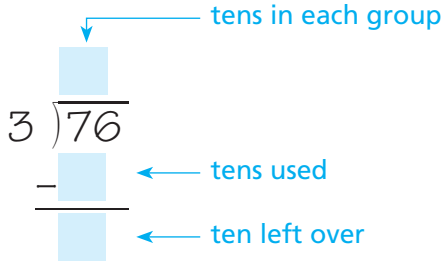
$3\overline{)76}$

STEP 2

Share the 7 tens equally among the 3 groups.
Cross out the tens you use.

There are _____ tens in each group.

_____ tens were used. There is _____ ten left over.



STEP 3

One ten cannot be shared among 3 groups without regrouping.
Regroup 1 ten by drawing 10 ones.

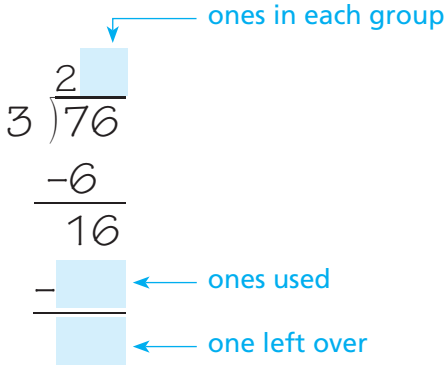
There are now _____ ones to share.

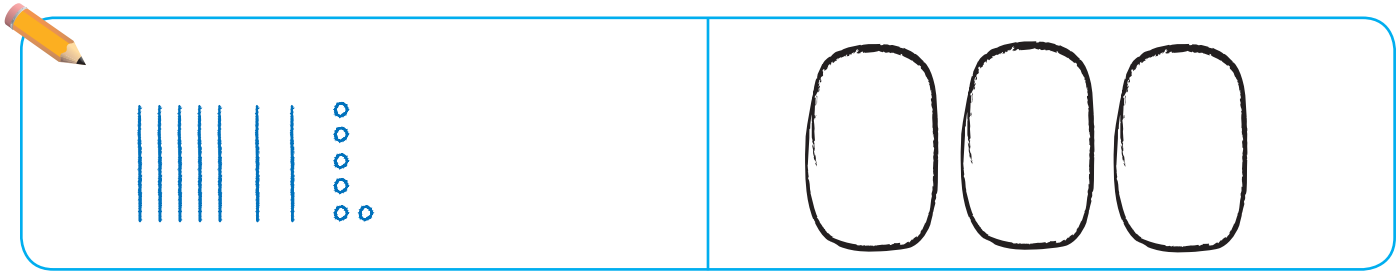
STEP 4

Share the ones equally among the 3 groups.
Cross out the ones you use.

There are _____ ones in each group.

_____ ones were used. There is _____ one left over.





There are 3 groups of _____ and _____ left over.

So, for 76 ÷ 3, the quotient is _____ and the remainder is _____.

This can be written as _____.

Math Talk

MATHEMATICAL PRACTICES 4

Interpret a Result Why do you share tens equally among groups before sharing ones?

Name _____

Share and Show MATH BOARD

Divide. Use base-ten blocks.

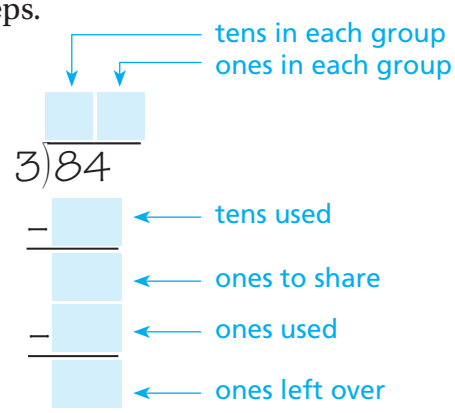
1. 48 ÷ 3 _____

2. 84 ÷ 4 _____

3. 72 ÷ 5 _____

4. Divide. Draw a quick picture. Record the steps.

84 ÷ 3 _____



Problem Solving • Applications Real World

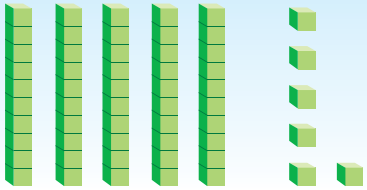
5. WRITE Math Explain why you did not need to regroup in Exercise 2.

_____

6. GO DEEPER Mindy is preparing fruit boxes for gifts. She divides 36 apples evenly into 6 boxes. Then she divided 54 bananas evenly into the same 6 boxes. How many pieces of fruit are in each of Mindy's boxes?

_____

7. THINK SMARTER Ami needs to divide these base-ten blocks into 4 equal groups.



Describe a model that would show how many are in each group.

_____

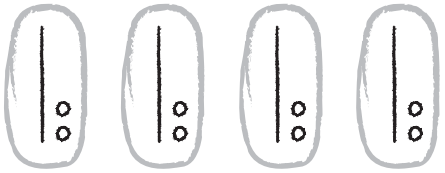
Sense or Nonsense?

8. THINK SMARTER Angela and Zach drew quick pictures to find 68 ÷ 4. Whose quick picture makes sense? Whose quick picture is nonsense? Explain your reasoning.

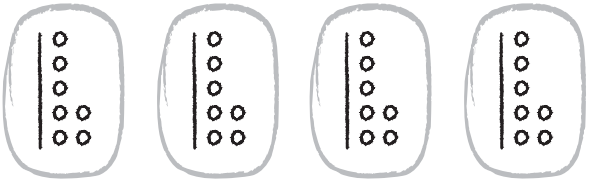
I drew 1 ten and 2 ones in each group.

I drew 1 ten and 7 ones in each group.

Angela's Quick Picture



Zach's Quick Picture



9. MATHEMATICAL PRACTICE 1 **Analyze** What did Angela forget to do after she shared the tens equally among the 4 groups?

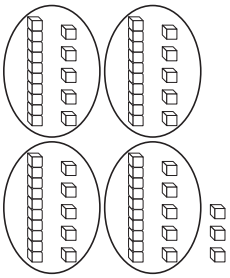
Name _____

Model Division with Regrouping

COMMON CORE STANDARD—4.NBT.B.6
Use place value understanding and properties of operations to perform multi-digit arithmetic.

Divide. Use base-ten blocks.

1. 63 ÷ 4 15 r3



2. 83 ÷ 3 _____

Divide. Draw quick pictures. Record the steps.

3. 85 ÷ 5 _____

4. 97 ÷ 4 _____

Problem Solving Real World

5. Tamara sold 92 cold drinks during her 2-hour shift at a festival food stand. If she sold the same number of drinks each hour, how many cold drinks did she sell each hour?

6. WRITE Math Write a division problem that has a 2-digit dividend and a 1-digit divisor. Show how to solve it by drawing a quick picture.

Lesson Check (4.NBT.B.6)

1. Gail bought 80 buttons to put on the shirts she makes. She uses 5 buttons for each shirt. How many shirts can Gail make with the buttons she bought?

2. Marty counted how many breaths he took in 3 minutes. In that time, he took 51 breaths. He took the same number of breaths each minute. How many breaths did Marty take in one minute?

Spiral Review (4.NBT.B.4, 4.NBT.B.5, 4.NBT.B.6)

3. Kate is solving brain teasers. She solved 6 brain teasers in 72 minutes. How long did she spend on each brain teaser?

4. Jenny works at a package delivery store. She puts mailing stickers on packages. Each package needs 5 stickers. How many stickers will Jenny use if she is mailing 105 packages?

5. The Puzzle Company packs standard-sized puzzles into boxes that hold 8 puzzles. How many boxes would it take to pack up 192 standard-sized puzzles?

6. Mt. Whitney in California is 14,494 feet tall. Mt. McKinley in Alaska is 5,826 feet taller than Mt. Whitney. How tall is Mt. McKinley?

FOR MORE PRACTICE GO TO THE Personal Math Trainer