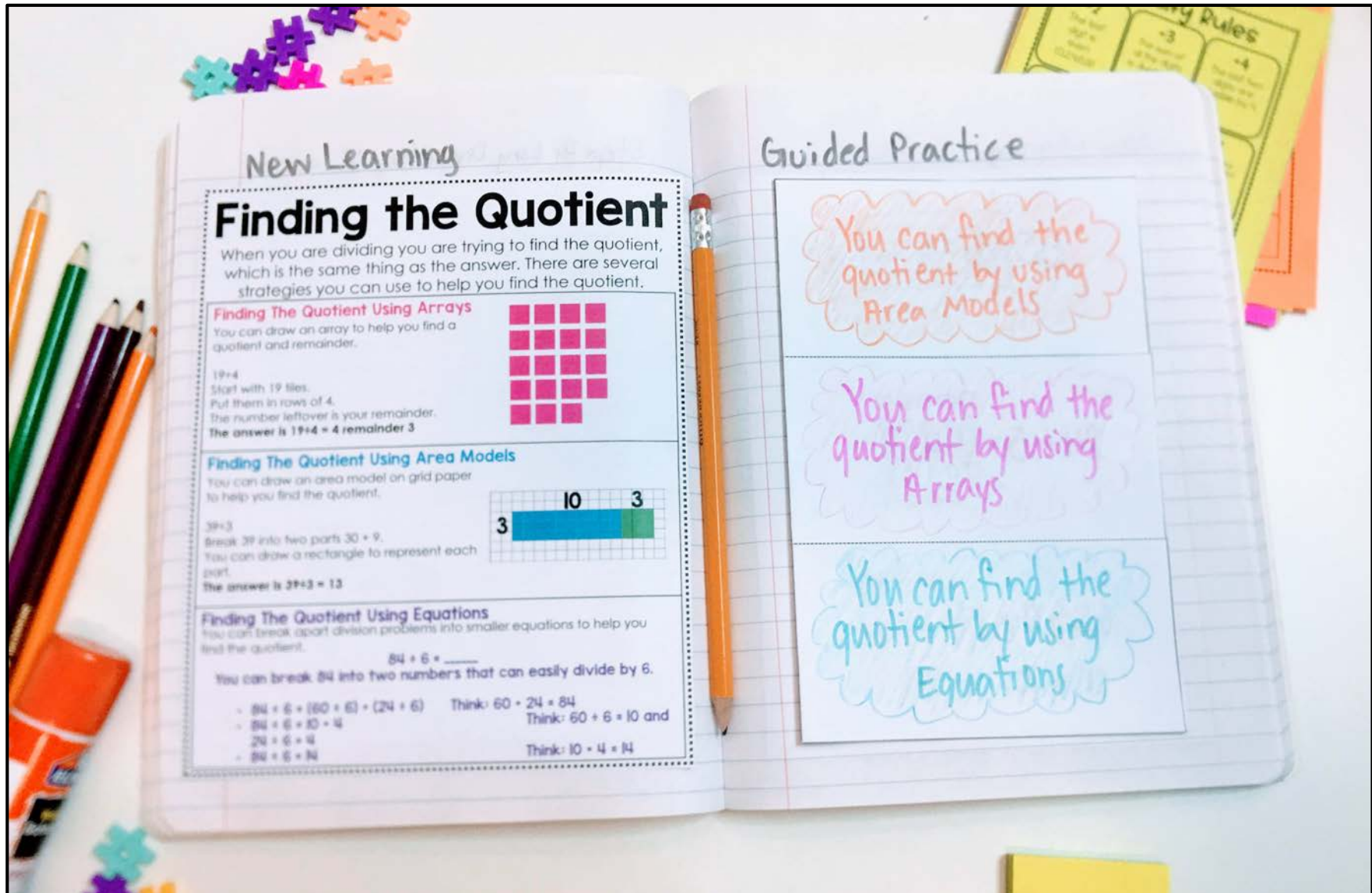


Division Interactive Math Notebook



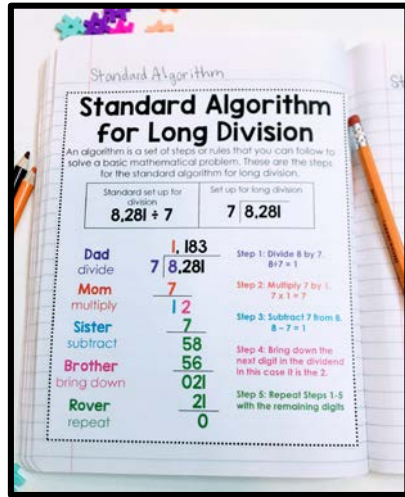
Activities to **TEACH**, **REINFORCE** and **ASSESS** each skill



What's Included?

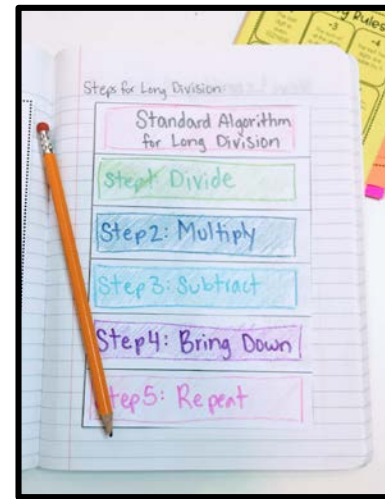
Each skill has these four elements:

Anchor Chart



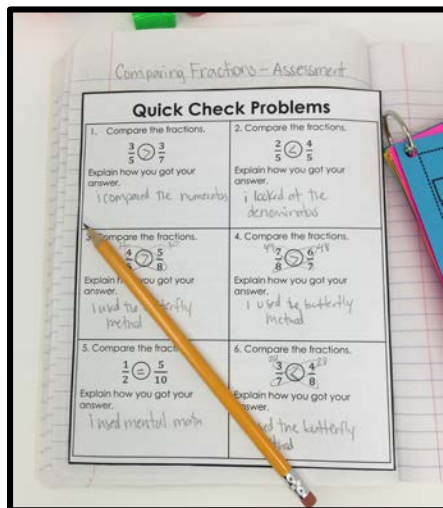
Great tool to introduce new math skill to students. Student friendly and fits perfectly in journals.

Interactive Foldable



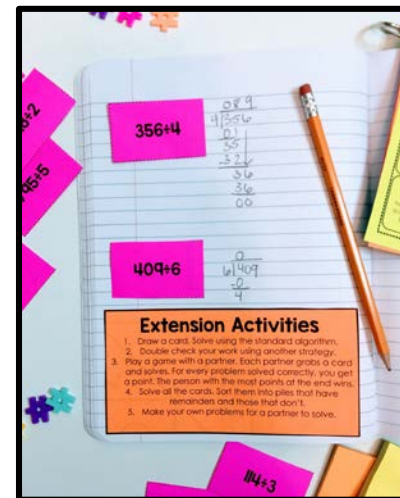
Works great as guided practice and gives students an interactive opportunity to practice the new skill.

Exit Ticket



Great way to assess students at the end of the lesson or to use as a spiral review a few weeks after the lesson is taught.

Extension Activity



Works great as early finisher work or in a math work station.



What Skills are Covered?

Fact Families

Fact families can help you understand the relationship between multiplication and division. If you know your multiplication facts, you can use that information to help you determine the quotient.

Multiplication
 $9 \times 3 = 27$
 $3 \times 9 = 27$

Division
 $27 \div 3 = 9$
 $27 \div 9 = 3$

In this fact family, 27 is the largest number.

- From a multiplication perspective, 27 is the product. It is the total amount you get from multiplying the two factors.
- From a division perspective 27 is the dividend. It is the number you are dividing into equal groups.

Understanding how numbers are related can help you solve problems.

Can you use the fact family above to help you solve this problem?
 Karl has 27 pieces of candy leftover from Halloween. He want to share his candy with his two sisters. If he divides his candy evenly between the three of them, how many pieces will they each get?

Fact Families

Modeling Division

You can draw a picture or create a model to help show the division of objects into groups.

Sheryl works at a flower shop. She had 15 daisies that she wanted to use in 3 different flower arrangements.

Sheryl will evenly divide up the daisies between three arrangements.

Sheryl started with the number of groups she wanted and placed an even number of daisies in each group.

15 daisies divided into 3 groups equals 5 daisies in each group.

Modeling Division

Finding the Quotient

When you are dividing you are trying to find the quotient, which is the same thing as the answer. There are several strategies you can use to help you find the quotient.

Finding The Quotient Using Arrays
 You can draw an array to help you find a quotient and remainder.

$19 \div 4$
 Start with 19 tiles.
 Put them in rows of 4.
 The number leftover is your remainder.
 The answer is $19 \div 4 = 4$ remainder 3

Finding The Quotient Using Area Models
 You can draw an area model on grid paper to help you find the quotient.

$39 \div 3$
 Break 39 into two parts 30 + 9.
 You can draw a rectangle to represent each part.
 The answer is $39 \div 3 = 13$

Finding The Quotient Using Equations
 You can break apart division problems into smaller equations to help you find the quotient.

You can break 84 into two numbers that can easily divide by 6.

- $84 \div 6 = (60 \div 6) + (24 \div 6)$ Think: $60 \div 6 = 10$ and $24 \div 6 = 4$
- $84 \div 6 = 10 + 4$ Think: $10 + 4 = 14$
- $84 \div 6 = 14$

Finding the Quotient

Standard Algorithm for Long Division

An algorithm is a set of steps or rules that you can follow to solve a basic mathematical problem. These are the steps for the standard algorithm for long division.

Standard set up for division	Set up for long division
$8,281 \div 7$	$7 \overline{) 8,281}$

Dad divide
 Mom multiply
 Sister subtract
 Brother bring down
 Rover repeat

Step 1: Divide 8 by 7. $8 \div 7 = 1$

Step 2: Multiply 7 by 1. $7 \times 1 = 7$

Step 3: Subtract 7 from 8. $8 - 7 = 1$

Step 4: Bring down the next digit in the dividend in this case it is the 2.

Step 5: Repeat Steps 1-5 with the remaining digits

Long Division

Interpret the Remainder

When you solve multi-step problems involving division, you sometimes get a remainder. Depending on the situation in the problem, you can do different things with the remainder.

Ignore it: Use only the quotient as your answer
 Marco is making treat bags for his birthday party. He has 143 pieces of candy and has to make 8 treat bags. How many pieces of candy will he be able to put in each bag?
 $143 \div 8 = 20$ remainder 3
 In this case, the remaining 3 pieces won't get used in treat bags. Marco only needs to use the quotient 20 to help figure out how many pieces of candy to put in each bag.

Use it: Use only the remainder as your answer
 Craig is organizing his baseball cards in a book. He has 187 cards and can put 9 cards on each page. He only wants to put full pages of cards in the book. After he makes all his full pages, how many cards will he have left?
 $187 \div 9 = 21$ remainder 3
 Craig can fill up 21 pages completely. If he only wants to put full pages in his book, he will have 3 leftover cards.

Share it: Write the remainder as a fraction
 Jenn is wrapping gifts for her dad's birthday. She has four gifts to wrap and has 145 inches of ribbon to use on the 4 gifts. How much ribbon can she use on each gift?
 $145 \div 4 = 36$ remainder 1
 Jenn can take the remaining 1 inch and divide it into fractions so each of the four gifts gets an extra $\frac{1}{4}$ inch.
 $145 \div 4 = 36 \frac{1}{4}$ inches

Round it: Add one to the quotient
 Kelly is baking cookies. She rolled 80 cookie dough balls and can bake 9 cookies at a time. How many rounds of cookies will she need to bake?
 $80 \div 9 = 8$ remainder 8
 Kelly can bake 8 full pans of cookies. She needs to bake the 8 remaining cookies on another pan which means you need to add one to the quotient.
 Kelly will bake a total of 9 pans of cookies.

Interpret the Remainder

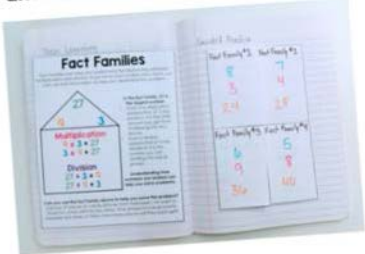


Additional Features


- Includes **assembly notes and directions** for each entry
- Includes **answer key** for each exit ticket
- Includes **black and white or color options** for each anchor chart

Multiplication & Division Fact Families - Assembly Notes & Directions


Anchor Chart
Make enough copies for students. Have students cut and paste in their math journal. Review anchor chart with students as you would a full size anchor chart. Students will be able to reference back to this page if they have questions about place value.



Foldable - Outside




Foldable - Inside




Foldable
See the example provided in the pictures to the right. Create foldable with students. You can modify the examples to meet your students specific needs.

Quick Check Problems - KEY

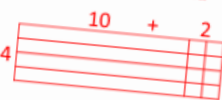
1. Draw an array to help you divide the following: $19 \div 5$




2. Draw an array to help you divide the following: $21 \div 6$



3. Draw an area model to help you divide the following: $48 \div 4 = 12$



4. Draw an area model to help you divide the following: $36 \div 3 = 12$



5. Use equations to help you divide the following: $72 \div 4$

$72 \div 4 = (60 + 12) \div 4$
 $72 \div 4 = (60 \div 4) + (12 \div 4)$
 $72 \div 4 = (15) + (3)$
 $72 \div 4 = 18$


6. Use equations to help you divide the following: $78 \div 6$

$78 \div 6 = (60 + 18) \div 6$
 $78 \div 6 = (60 \div 6) + (18 \div 6)$
 $78 \div 6 = (10) + (3)$
 $78 \div 6 = 13$

Finding the Quotient

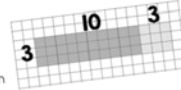
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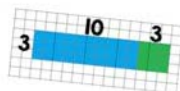
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Mom multiply

Sister subtract

Brother bring down

Rover repeat

$$\begin{array}{r}
 1,183 \\
 7 \overline{) 8,281} \\
 \underline{7} \\
 12 \\
 \underline{7} \\
 58 \\
 \underline{56} \\
 021 \\
 \underline{21} \\
 0
 \end{array}$$

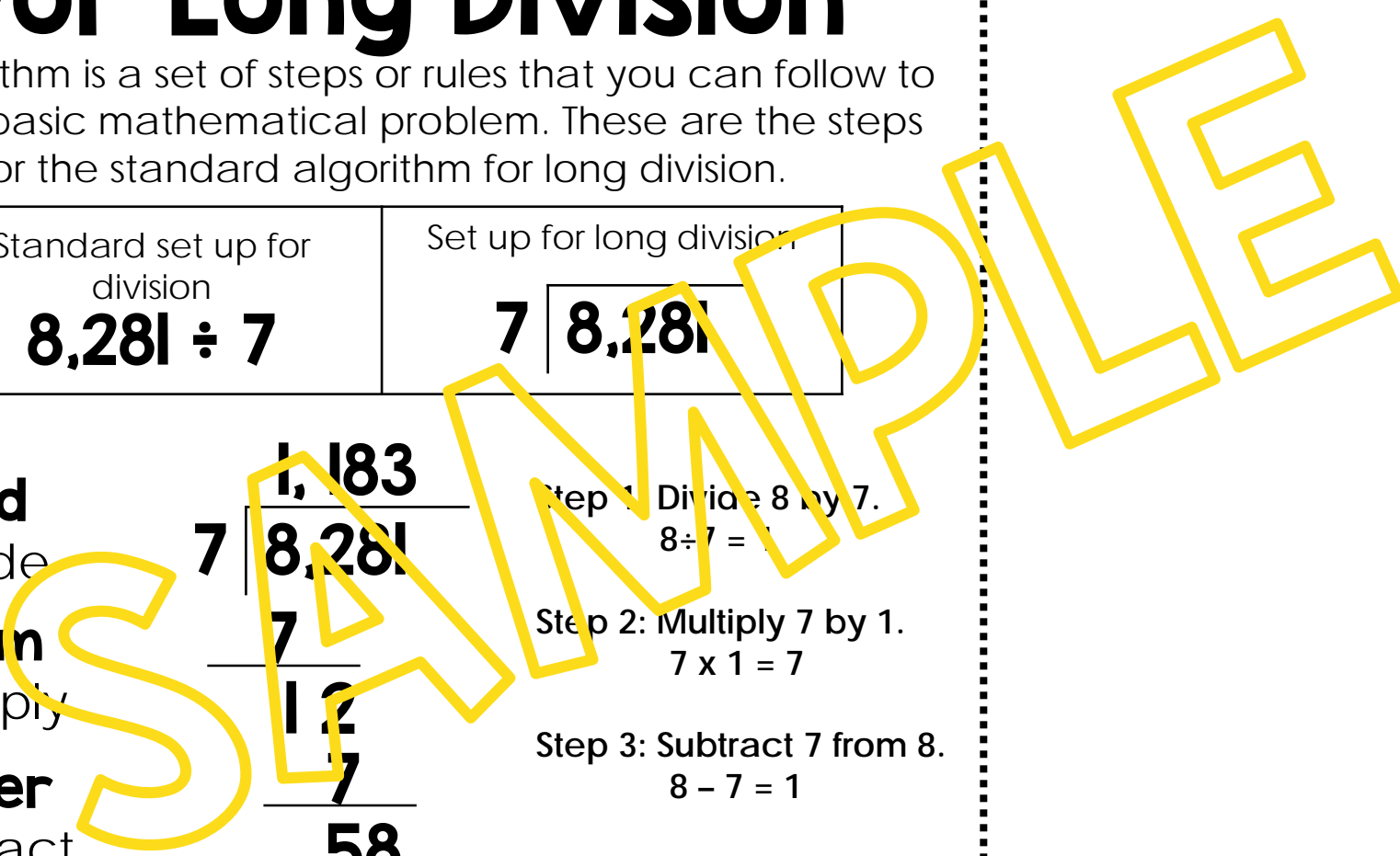
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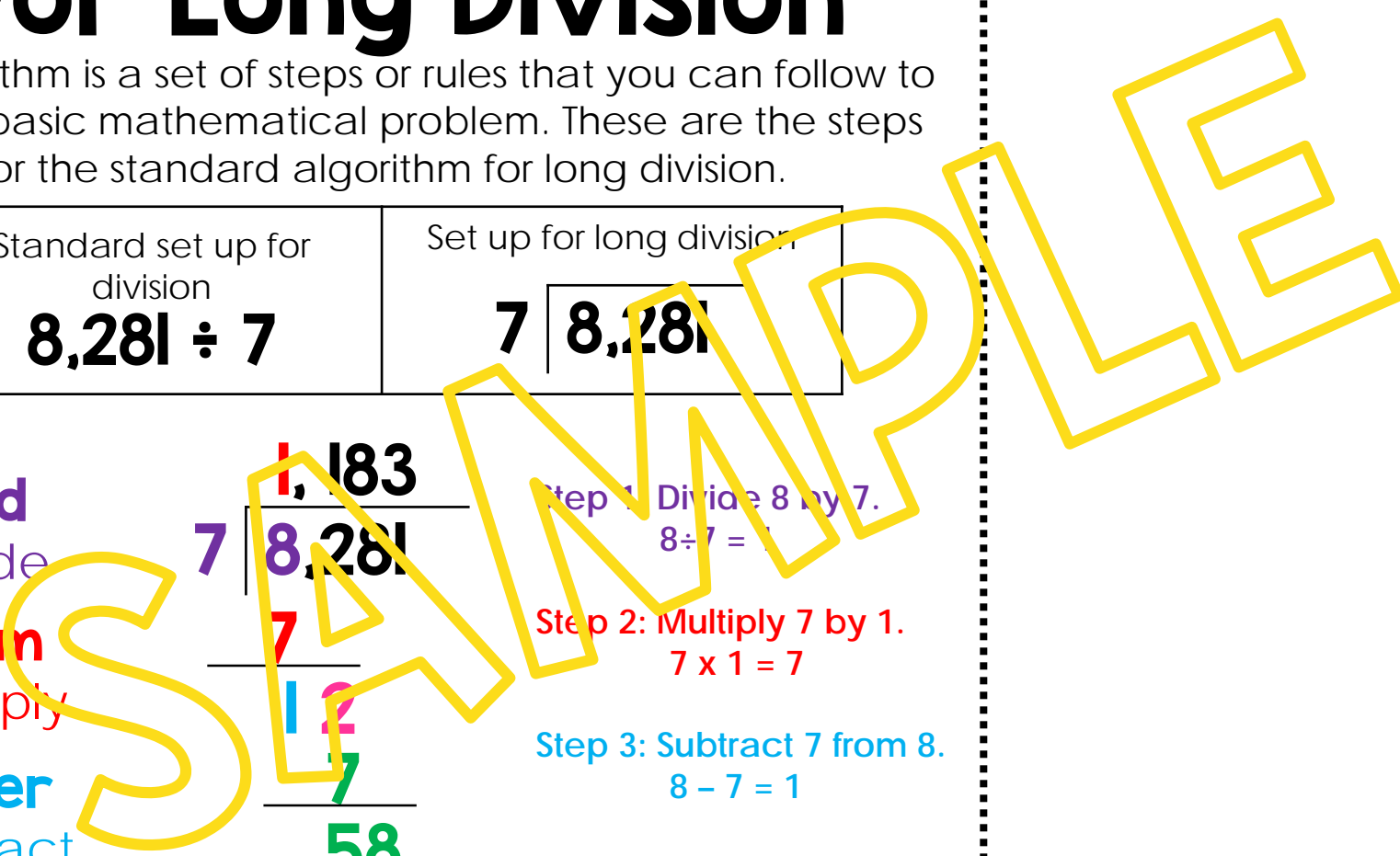
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SAMPLE

Extension Activities

1. Draw a card. Solve using the standard algorithm.
2. Double check your work using another strategy.
3. Play a game with a partner. Each partner grabs a card and solves. For every problem solved correctly, you get a point. The person with the most points at the end wins.
4. Solve all the cards. Sort them into piles that have remainders and those that don't.
5. Make your own problems for a partner to solve.

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SAMPLE

$247 \div 3$

$356 \div 4$

$625 \div 5$

$104 \div 6$

$98 \div 2$

$819 \div 9$

$163 \div 4$

$325 \div 5$

$114 \div 3$

$945 \div 6$

$501 \div 2$

$358 \div 4$

$139 \div 5$

$723 \div 7$

$462 \div 8$

$318 \div 2$

$409 \div 6$

$872 \div 3$

$868 \div 9$

$795 \div 5$

SAMPLE

SAMPLE

Quick Check Problems

1. Use the standard algorithm to solve the following: $873 \div 4$

2. Use the standard algorithm to solve the following: $164 \div 4$

3. Use the standard algorithm to solve the following: $327 \div 3$

4. Use the standard algorithm to solve the following: $268 \div 2$

5. Use the standard algorithm to solve the following: $303 \div 3$

6. Use the standard algorithm to solve the following: $625 \div 5$

SAMPLE

Quick Check Problems - KEY

1. Use the standard algorithm to solve the following: $873 \div 4$

218 Remainder 1

2. Use the standard algorithm to solve the following: $164 \div 4$

41

3. Use the standard algorithm to solve the following: $327 \div 3$

109

4. Use the standard algorithm to solve the following: $268 \div 3$

89 Remainder 1

5. Use the standard algorithm to solve the following: $303 \div 3$

101

6. Use the standard algorithm to solve the following: $625 \div 5$

125

SAMPLE