

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Express the missing divisor using a power of 10. Explain your reasoning using a place value model.

a.  $5.2 \div \underline{\hspace{2cm}} = 0.052$

b.  $7,650 \div \underline{\hspace{2cm}} = 7.65$

2. Estimate the quotient by rounding the expression to relate to a one-digit fact. Explain your thinking in the space below.

a.  $432 \div 73 \approx \underline{\hspace{2cm}}$

b.  $1,275 \div 588 \approx \underline{\hspace{2cm}}$

3. Generate and solve another division problem with the same quotient and remainder as the two problems below. Explain your strategy for creating the new problem.

$$\begin{array}{r} 3 \\ 17 \overline{) 63} \\ - 51 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 3 \\ 42 \overline{) 138} \\ - 126 \\ \hline 12 \end{array}$$

4. Sarah says that  $26 \div 8$  equals  $14 \div 4$  because both are “3 R2.” Show her mistake using decimal division.

5. A rectangular playground has an area of 3,392 square meters. If the width of the rectangle is 32 meters, find the length.



6. A baker uses 5.5 pounds of flour daily.
- a. How many ounces of flour will he use in two weeks? Use words, numbers, or pictures to explain your thinking. (1 lb = 16 oz.)

- b. The baker's recipe for a loaf of bread calls for 12 ounces of flour. If he uses all of his flour to make loaves of bread, how many full loaves can he bake in two weeks?
- c. The baker sends all his bread to one store. If he can pack up to 15 loaves of bread in a box for shipping, what is the minimum number of boxes required to ship all the loaves baked in two weeks. Explain your reasoning.
- d. The baker pays \$0.80 per pound for sugar and \$1.25 per pound for butter. Write an expression that shows how much the baker will spend if he buys 6 pounds of butter and 20 pounds of sugar.
- e. Chocolate sprinkles cost as much per pound as sugar. Find  $\frac{1}{10}$  the baker's total cost for 100 pounds of chocolate sprinkles. Explain the number of zeros and the placement of the decimal in your answer using a place value chart.

End-of-Module Assessment Task  
Standards Addressed

## Topics A–H

**Write and interpret numerical expressions.**

- 5.OA.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- 5.OA.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation “add 8 and 7, then multiply by 2” as  $2 \times (8 + 7)$ . Recognize that  $3 \times (18932 + 921)$  is three times as large as  $18932 + 921$ , without having to calculate the indicated sum or product.*

**Understand the place value system.**

- 5.NBT.1** Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and  $\frac{1}{10}$  of what it represents in the place to its left.
- 5.NBT.2** Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

**Perform operations with multi-digit whole numbers and with decimals to hundredths.**

- 5.NBT.5** Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.6** Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 5.NBT.7** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

**Convert like measurement units within a given measurement system.**

- 5.MD.1** Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

**Evaluating Student Learning Outcomes**

A Progression Toward Mastery is provided to describe steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency*. In this chart, this progress is presented from left (Step 1) to right (Step 4). The learning goal for each student is to achieve Step 4 mastery. These steps are meant to help teachers and students identify and celebrate what the student **CAN** do now, and what they need to work on next.

## A Progression Toward Mastery

| Assessment Task Item                                               | STEP 1<br>Little evidence of reasoning without a correct answer.<br><br>(1 Point)                                                                     | STEP 2<br>Evidence of some reasoning without a correct answer.<br><br>(2 Points)                                                                 | STEP 3<br>Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer.<br>(3 Points)                                                         | STEP 4<br>Evidence of solid reasoning with a correct answer.<br><br>(4 Points)                                                                                                                                                                                      |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b><br><br><b>5.NBT.1</b><br><b>5.NBT.2</b><br><b>5.NBT.7</b> | The student is unable to express the divisors as powers of 10 either as multiples of 10 or as exponents and produces a place value chart with errors. | The student either shows the divisors as powers of 10 either as multiples of 10 or exponents or uses correct reasoning on the place value chart. | The student correctly expresses the divisors as powers of 10 either as multiples of 10 or exponents, and uses correct reasoning on the place value chart for either Part (a) or Part (b). | The student correctly expresses the divisors as powers of 10 either as multiples of 10 or exponents. The student also shows correct reasoning on the place value chart for both Part (a) and Part (b).<br><br>a. 100 or $10^2$ or both<br>b. 1000 or $10^3$ or both |
| <b>2</b><br><br><b>5.NBT.1</b><br><b>5.NBT.2</b><br><b>5.NBT.6</b> | The student is unable to round either the dividend or the divisor to a one-digit fact.                                                                | The student rounds the dividend and divisor, but not to a one-digit fact.                                                                        | The student correctly rounds to a one-digit fact for either Part (a) or Part (b), or rounds both parts correctly without a clear explanation.                                             | The student correctly rounds both Part (a) and Part (b) to a one-digit fact, and clearly explains thinking.<br><br>a. $420 \div 70 = 6$<br>b. $1,200 \div 600 = 2$                                                                                                  |
| <b>3</b><br><br><b>5.OA.1</b><br><b>5.NBT.6</b>                    | The student is unable to generate a division problem with a quotient of 3 and remainder of 12.                                                        | The student generates a division problem with either a quotient of 3 or a remainder of 12, but is unable to explain reasoning used.              | The student generates a division problem with both a quotient of 3 and a remainder of 12, but shows no evidence of a strategy other than guess and check.                                 | The student generates a division problem with a quotient of 3 and remainder of 12, and describes a sound strategy (e.g., writes a checking equation $\underline{\hspace{1cm}} = 3 \times \underline{\hspace{1cm}} + 12$ ).                                          |



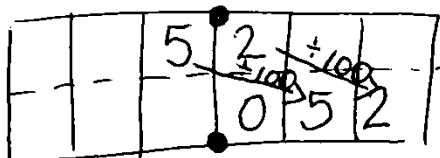
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|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>4</b><br><br><b>5.NBT.7</b>                                                                                                                            | <p>The student is unable to perform the decimal division necessary to show non-equivalence of quotients.</p> | <p>The student is able to perform the division necessary to produce the whole number portion of the quotient, but is unable to continue dividing the decimal places to show non-equivalence of quotients.</p> | <p>The student is able to explain the non-equivalence of the quotients, but with errors in the division calculation.</p> | <p>The student divides accurately, and shows the non-equivalence of the quotients.</p> $26 \div 8 = 3.25$ $14 \div 4 = 3.5$                                                                                                                                                                                      |
| <b>5</b><br><br><b>5.NBT.6</b>                                                                                                                            | <p>The student does not divide to find the length of the playground.</p>                                     | <p>The student makes two errors in division that lead to incorrect length of the playground.</p>                                                                                                              | <p>The student makes one error in division that leads to an incorrect length of the playground.</p>                      | <p>The student correctly divides, and finds the length of the rectangle to be 106 m.</p>                                                                                                                                                                                                                         |
| <b>6</b><br><br><b>5.OA.1</b><br><b>5.OA.2</b><br><b>5.NBT.1</b><br><b>5.NBT.2</b><br><b>5.NBT.5</b><br><b>5.NBT.6</b><br><b>5.NBT.7</b><br><b>5.MD.1</b> | <p>The student uses incorrect reasoning for all parts of the task.</p>                                       | <p>The student uses correct reasoning for at least two parts of the task, but makes errors in calculation.</p>                                                                                                | <p>The student uses correct reasoning for all parts of the task, but makes errors in calculation.</p>                    | <p>The student describes correct reasoning using words, numbers or pictures, and correctly calculates for all parts of the task.</p> <ol style="list-style-type: none"> <li>1,232 oz</li> <li>102 loaves</li> <li>7 boxes</li> <li><math>(20 \times 0.80) + (6 \times \\$1.25)</math></li> <li>\$8.00</li> </ol> |

Name Garrett

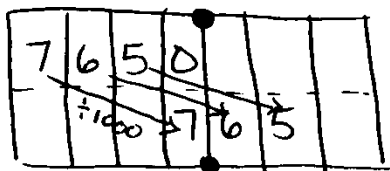
Date \_\_\_\_\_

1. Express the missing divisor using an exponent. Explain your reasoning using a place value chart.

a.  $5.2 \div \underline{10^2} = 0.052$



b.  $7,650 \div \underline{10^3} = 7.65$



2. Estimate the quotient by rounding the equation to relate to a 1-digit fact. Explain your thinking in the space below.

a.  $432 \div 73 \approx \underline{6}$

$$420 \div 70 = 42 \div 7 = 6$$

73 is close to 7 tens. The nearest multiple of 7 that's like 432 is 42 tens. So  $42 \div 7 = 6$

b.  $1275 \div 588 \approx \underline{2}$

$$1200 \div 600 = 12 \div 6 = 2$$

588 is close to 600. The nearest multiple of 600 that is close to 1275 is 12 hundreds. So  $12 \div 6 = 2$

3. Generate and solve another division problem with the same quotient and remainder as the two problems below. Explain your strategy for creating the new problem.

$$\begin{array}{r} 3 \\ 17 \overline{) 63} \\ \underline{51} \\ 12 \end{array}$$

$$\begin{array}{r} 3 \\ 42 \overline{) 138} \\ \underline{126} \\ 12 \end{array}$$

$$\begin{array}{r} 3 \\ 27 \overline{) 93} \\ \underline{81} \\ 12 \end{array}$$

To check division, I can multiply the answer and the divisor, then add the remainder. So I multiplied  $3 \times$  my number which was 27 and got 81 and then I added 12. So my dividend must be 93.

$$\begin{array}{r} 27 \\ \times 3 \\ \hline 81 \\ + 12 \\ \hline 93 \end{array}$$

4. Sarah says that  $26 \div 8$  equals  $14 \div 4$  because both are “3 R2.” Show her mistake using decimal division.

$$\begin{array}{r} 3.25 \\ 8 \overline{) 26.00} \\ \underline{-24} \phantom{00} \\ 20 \phantom{00} \\ \underline{-16} \phantom{00} \\ 40 \phantom{00} \\ \underline{-40} \\ 0 \end{array}$$

$$\begin{array}{r} 3.5 \\ 4 \overline{) 14.0} \\ \underline{-12} \phantom{00} \\ 20 \phantom{00} \\ \underline{-20} \\ 0 \end{array}$$

$$26 \div 8 = 3.25$$

$$14 \div 4 = 3.5$$

5. A rectangular playground has an area of 3,392 square meters. If the width of the rectangle is 32 meters, find the length.

?

$A = 3,392 \text{ m}^2$

32m

$$32 \times ? = 3,392$$

$$\begin{array}{r} 106 \\ 32 \overline{) 3,392} \\ \underline{-32} \phantom{00} \\ 19 \phantom{00} \\ \underline{-0} \phantom{00} \\ 192 \phantom{00} \\ \underline{-192} \\ 0 \end{array}$$

The length of the rectangle is 106 meters.

6. A baker uses 5.5 pounds of flour daily.

- a. How many ounces of flour will he use in two weeks? Use words, numbers, or pictures to explain your thinking. (1 lb = 16 oz.)

$$5.5 \text{ lbs} = \underline{\hspace{1cm}} \text{ oz}$$

$$5.5 \times (1 \text{ lb}) = \underline{\hspace{1cm}} \text{ oz}$$

$$5.5 \times (16 \text{ oz}) = \underline{\hspace{1cm}} \text{ oz}$$

$$\begin{array}{r} 55 \text{ tenths} \\ \times 16 \\ \hline 330 \\ + 550 \\ \hline 880 \text{ tenths} = 88 \end{array}$$

$$\begin{array}{r} 88 \text{ oz} \\ \times 14 \\ \hline 352 \\ + 880 \\ \hline 1,232 \text{ oz} \end{array}$$

First, I found the ounces he uses every day. Then I multiplied by 14 days.

The baker uses 1,232 oz of flour in 2 weeks.

- b. The baker's recipe for a loaf of bread calls for 12 ounces of flour. If he uses all of his flour to make loaves of bread, how many full loaves can he bake in two weeks?

$$\begin{array}{r} 102 \text{ r}8 \\ 12 \overline{) 1,232} \\ \underline{-12} \phantom{00} \\ 03 \phantom{00} \\ \underline{-00} \phantom{00} \\ 32 \phantom{00} \\ \underline{-24} \phantom{00} \\ 8 \end{array}$$

The baker can bake 102 full loaves in two weeks.

- c. The baker sends all his bread to one store. If he can pack up to 15 loaves of bread in a box for shipping, what is the minimum number of boxes required to ship all the loaves baked in two weeks. Explain your reasoning.

$$\begin{array}{r} 6 \\ 15 \overline{) 102} \\ \underline{-90} \phantom{00} \\ 12 \end{array}$$

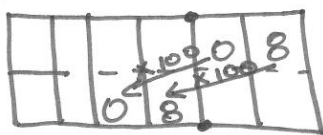
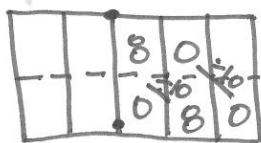
He needs 7 boxes to ship all the bread. The last box won't be full. It will only have 12 loaves in it.

- d. The baker pays \$0.80 per pound for sugar and \$1.25 per pound for butter. Write an expression that shows how much the baker will spend if he buys 6 pounds of butter and 20 pounds of sugar.

$$(6 \times \$1.25) + (20 \times \$0.80)$$

- e. Chocolate sprinkles cost as much per pound as sugar. Find  $\frac{1}{10}$  the baker's total cost for 100 pounds of chocolate sprinkles. Explain the number of zeros and the placement of the decimal in your answer using a place value chart.

$$\$0.80 \div 10 = \$0.08$$



The baker pays \$8.00 for 100 lbs of sprinkles.