Name Date

1. The following equations involve different quantities and use different operations, yet produce the same result. Explain why this is true.

4.13 x 103 = 4130 413,000 ÷ 102 = 4130

1. Use an area model to explain the product of 4.6 and 3. Write the product in standard form, word form and expanded form.
2. Compare using >, <, or =.
   1. 2 tenths + 11 hundredths 0.13
   2. 13 tenths + 8 tenths + 32 hundredths 2.42
   3. 342 hundredths + 7 tenths 3 + 49 hundredths
   4. 2 + 31 × + 14 × 2.324
   5. 14 + 72 × + 4 × 21.24
   6. 0.3 x 102 + 0.007 x 103 0.3 x 10 + 0.7 x 102
3. Dr. Mann mixed 10.357 g of chemical A, 12.062 g of chemical B, and 7.506 g of chemical C to make 5 doses of medicine.
4. About how much medicine did he make in grams? Estimate the amount of each chemical by rounding to the nearest tenth of a gram before finding the sum. Show all your thinking.
5. Find the actual amount of medicine mixed by Dr. Mann. What is the difference in your estimate and the actual amount?
6. How many grams are in one dose of medicine? Explain your strategy for solving this problem.
7. Round the weight of one dose to the nearest gram. Write an equation that shows how to convert the rounded weight to kilograms and solve. Explain your thinking in words.

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| End-of-Module Assessment Task  Standards Addressed | Topics A–F |
| Generalize place value understanding for multi-digit whole numbers.  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 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.  **5.NBT.3** Read, write, and compare decimals to thousandths.  a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).  b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.  5.NBT.4 Use place value understanding to round decimals to any place.  **Perform operations with multi-digit whole numbers and with decimals to hundredths.**  **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  and  Standards Assessed | STEP 1  Little evidence of reasoning without a correct answer.  (1 Point) | STEP 2  Evidence of some reasoning without a correct answer.  (2 Points) | STEP 3  Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer.  (3 Points) | STEP 4  Evidence of solid reasoning with a correct answer.  (4 Points) | |
| 1  5.NBT.1  5.NBT.2 | The student is unable to provide a correct response. | The student attempts but is not able to accurately draw the place value mat or explain reasoning fully. | The student correctly draws place mat but does not show full reasoning, or explains reasoning fully but place value mat doesn’t match the reasoning. | The student correctly:   * Draws place value mat showing movement of digits. * Explains movement of units to the left for multiplication and movement of units to the right for division. | |
| 2  5.NBT.7 | The student is unable to use the area model to find the product. | The student attempts using an area model to multiply but inaccurately. Student attempts to write either word or expanded form of inaccurate product | The student uses the area model to multiply but does not find the correct product. Student accurately produces word and expanded form of inaccurate product. | The student correctly:   * Draws an area model. * Shows work to find product 13.8. * Accurately expresses product in both word and expanded form. | |
| 3  5.NBT.3a  **5.NBT.3b** | The student answers none or 1 part correctly. | The student answers 2 or 3 answers correctly. | The student answers 4 or 5 answers correctly. | The student correctly answers all 6 parts:  a. > d. >  b. = e. <  c. > f. < | |
|  | | | | |
| 4  5.NBT.1  **5.NBT.2**  5.NBT.3a  5.NBT.3b  5.NBT.4  5.NBT.7  5.MD.1 | The student answers none or 1 part correctly. | The student answers 2 problems correctly. | The student is able to find all answers correctly but is unable to explain strategy in (c), or answers 3 of the 4 problems correctly. | The student correctly:   1. Estimates 10.357 g to 10.4 g; 12.062g to 12.1 g; and 7.506 as 7.5; finds sum 30 g; shows work or model. 2. Finds sum 29.925 g and difference 0.075 g. 3. Finds quotient 5.985g and explains accurately strategy used. 4. Rounds 5.985g to 6g finds quotient 0.006 kg. Shows equation as 6 ÷ 103 or 6 ÷1000 = 0.006kg. Writes either 4 g ÷ 1000 = 0.004kg or 4 g ÷ 103 = 0.004 kg. | |





