Name _____ Date _____

1. Mrs. Tran plants 2 rows of 5 carrots in her garden.

   a. Draw an array that represents Mrs. Tran's carrots using an X to show each carrot.

   b. Mrs. Tran adds 3 more rows of 5 carrots to her garden.

      - Use circles to show her new carrots on the array in Part (a).
      - Complete the number sentence below showing how she added five rows.

        _____ fives + _____ fives = _____ fives

      - Write a sentence to explain your thinking.

   c. Find the total number of carrots Mrs. Tran planted.

   d. Write a multiplication sentence to describe the array representing the total number of carrots Mrs. Tran planted.

2. Mrs. Tran picks 15 tomatoes from her garden. She puts 5 tomatoes in each bag.

   a. Draw Mrs. Tran's bags of tomatoes.

   b. Write and solve a multiplication sentence to describe your drawing in Part (a).

3. Mrs. Tran plants 12 sunflowers in her garden. She plants them in 3 rows.

   a. Write a division sentence in the spaces below. What does the answer represent?

      _____ ÷ _____ = _____

   b. Mrs. Tran adds 2 more identical rows of sunflowers to her 3 original rows. Draw an array to show how many flowers she has now.

   c. Mrs. Tran figured out how many flowers she planted. Her work is shown in the box below. Would Mrs. Tran get the same result if she multiplied 5 x 4? Explain why or why not.

$$(3 \times 4) + (2 \times 4) = 12 + 8$$
$$= 20$$

Mid-Module Assessment Task Standards Addressed	Topics A–C

Represent and solve problems involving multiplication and division.

3.OA.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*

3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*

Understand properties of multiplication and the relationship between multiplication and division.

3.OA.5 Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.) *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*

3.OA.6 Understand division as an unknown-factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.*

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 Addressed	**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 **3.OA.1** **3.OA.2** **3.OA.6**	Student answers at least one question correctly.	Student answers at least two questions correctly.	Student answers at least three questions correctly. Mistakes may include the following: ▪ Completes the number sentence in Part b incorrectly ▪ Provides inaccurate explanation in Part (b) ▪ Writes a number sentence for Part (d) that describes the original array in Part A (2 x 5 or 5 x 2)	Student answers every question correctly: ▪ Draws accurate arrays ▪ Accurately completes the number sentence in Part (b) ▪ Provides accurate explanation of the number sentence in Part (b) ▪ Accurately find the total number of carrots ▪ Writes 5 x 5 in Part (d) (may or may not provide solution)
2 **3.OA.1**	Student is unable to answer either question correctly. The attempt shows the student may not understand the meaning of the questions.	Student may or may not answer one question correctly. Mistakes may include those listed in the box to the right, and/or ▪ Draws unequal groups Writes a number sentence using 5, 3, and 15, but a symbol or operation other than multiplication	Student answers at least one question correctly. Mistakes may include one of the following: ▪ Draws 5 equal groups ▪ Writes 15 as a factor	Student correctly: ▪ Represents 3 groups, each with a value of 5 ▪ Writes 5 x 3 = 15 or 3 x 5 = 15

A Progression Toward Mastery				
3 **3.OA.1** **3.OA.5**	Student is unable to answer any question correctly. The attempt shows the student may not understand the meaning of the questions.	Student answers at least one question correctly. Mistakes may include those listed in the box to the right, and/or ▪ Mixes up the order of numbers in the division sentence (e.g., 3 ÷ 12 = ?) ▪ Incorrectly identifies what the answer represents in Part A ▪ Inaccurately draws the array	Student answers at least two questions correctly. Mistakes may include: ▪ Not identifying the distributive property in Part (c) ▪ Explanation may only recognize that 5 x 4 also equals 20	Student correctly: ▪ Writes 12 ÷ 3 = 4 ▪ Identifies that the answer represents the number of flowers in each row ▪ Draws an array ▪ Writes an explanation that includes the distributive property (may or may not use the words *distributive property*)

Name Gina Date 9/10

1. Mrs. Tran plants 2 rows of 5 carrots in her garden.

   a. Draw an array that represents Mrs. Tran's carrots using an 'x' to show each carrot.

   x x x x x
   x x x x x
   o o o o o
   o o o o o
   o o o o o

   b. Mrs. Tran adds 3 more rows of 5 carrots to her garden.
      - Use circles to show her new carrots on the array in part a.
      - Complete the number sentence below showing how she added five rows.
      - Write a sentence to explain your thinking.

   2 fives + 3 fives = 5 fives

   Mrs. Tran planted 2 rows of five first. Then she added 3 more rows of five. Now she has 5 rows of five.

   c. Find the total number of carrots Mrs. Tran planted.

   R1 R2 R3 R4 R5
   5, 10, 15, 20, 25

   d. Write a multiplication sentence to describe the array representing the total number of carrots Mrs. Tran planted.

   5x5=25

2. Mrs. Tran picks 15 tomatoes from her garden. She puts 5 tomatoes in each bag.

   a. Draw Mrs. Tran's bags of tomatoes.

   b. Write and solve a multiplication sentence to describe your drawing in part a.

   3 x 5 = 15

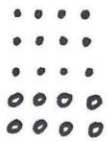
3. Mrs. Tran plants 12 sunflowers in her garden. She plants them in 3 rows.

a. Write a division sentence in the spaces below. What does the answer represent?

12 ÷ 3 = 4

4 is how many flowers are in each row.

b. Mrs. Tran adds 2 more identical rows of sunflowers to her 3 original rows. Draw an array to show how many flowers she has now.



She has 20 flowers now.

c. Mrs. Tran figured out how many flowers she planted. Her work is shown in the box below. Would Mrs. Tran get the same result if she multiplied 5 x 4? Explain why or why not.

(3 x 4) + (2 x 4) = 12 + 8
= 20

Yes! She would get the same answer because 5x4=20. If you look at what she did its sort of like

(3+2) x4 =
↓
(5) x 4 = 20.

That's why it makes sense that 5x4=20 and is a fine way to do it too.