Content Standard	**MAFS.3.OA** *Operations and Algebraic Thinking*
	MAFS.3.OA.2 *Understand properties of multiplication and the relationship between multiplication and division.*
	MAFS.3.OA.2.5 Apply properties of operations as strategies to multiply and divide. 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.)
Assessment Limits	Whole numbers. Product or dividend must be 100 or less.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Hot Spot Matching Item Response Multiple Choice Response Multi-Select Response
Context	No context

Example	
Context	No context
Context easier	Use of the Commutative Property with two factors.
Context more difficult	Use of multiple properties to determine an equivalent expression.

Sample Item Stem	Response Mechanism	Notes, Comments

An equation is shown.
 	
4 + 9 = 9 + □
 	
What is the missing value?
 	
    A. 4
    B. 5
    C. 9
    D. 13
	Multiple Choice Response	

Drag numbers to the boxes to create a **different** expression that is equal to (3 + 4) + 5. (3 + 4) + 5 = (□ + □) + □	Graphic Response – Hot Spot	

Which expression is equal to 7 x (2 x 3)?
 	
   A. (7 x 2) + (7 x 3)
   B. (7 + 2) x (7 + 3)
   C. (7 + 2) x 3
   D. (7 x 2) x (7 x 3)
	Multiple Choice Response	

Select all the expressions that could be used to find 6 x 10.
 	
   o 6 x (2 x 5)
   o 6 + (2 x 5)
   o (6 x 2) x 5
   o 10 x 6
   o (6 x 8) x (6 x 2)
	Multi-Select Response	