



### Properties of Multiplication and Division

#### Today's Standard

3.OA.B5 - Apply properties of operations as strategies to multiply and divide. Examples: If  $6 \times 4 = 24$  is known, then  $4 \times 6 = 24$  is also known. (Commutative property of multiplication.)  $3 \times 5 \times 2$  can be found by  $3 \times 5 = 15$ , then  $15 \times 2 = 30$ , or by  $5 \times 2 = 10$ , then  $3 \times 10 = 30$ . (Associative property of multiplication.) Knowing that  $8 \times 5 = 40$  and  $8 \times 2 = 16$ , one can find  $8 \times 7$  as  $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ . (Distributive property.)

Cues	Notes
Commutative Property	Commutative Property: Order of factors does not change the product (e.g., $4 \times 6 = 6 \times 4$ ).
Associative Property	Associative Property: Grouping of factors does not change the product (e.g., $(3 \times 5) \times 2 = 3 \times (5 \times 2)$ ).
Distributive Property	Distributive Property: Multiplying a sum by a number is the same as multiplying each addend by the number and adding the products (e.g., $8 \times (5 + 2) = (8 \times 5) + (8 \times 2)$ ).
Multiplication	Multiplication: Combining equal groups to find the total.
Division	Division: Splitting a total into equal groups.

#### Summary

Understanding the properties of multiplication and division helps students solve problems more efficiently and prepares them for algebra.