3.OA.A.1: Basic Multiplication

Common Core Domain: Operations & Algebraic Thinking

Common Core Cluster: Represent and solve problems involving multiplication and division.

Standard (with text below): 3.OA.A.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.

MAIN CONCEPTS

- Repeated addition (ex. 2 + 2 + 2 + 2 + 2 +2 =10) as an entrance point to the standard.
- Standard reflects the understanding of the concept of multiplication as a more efficient repeated addition. Does not cover the operation of multiplication. (Meaning the representation of equal groups as multiplicative representations is the key **not** finding the product).
- Clearly connect the word times with the symbol x.
- Split quantities into equal groups (whole number quotients only).
- Quantities split into equal groups will not have a quantity remaining.
- Connect the concept that 2 + 2 + 2 + 2 + 2 +2 =10 is the same as 5 twos =10 (numbers can vary).
- Connect the concept that 5 twos = 10 is the same as 5 x 2 = 10 (numbers can vary).
- There must be equal groups to multiply, unequal groups cannot be multiplied.
- Interpret equal groups, arrays or other models as representations of a multiplicative sentence. (The total number of pencils if 4 desks each have 2 pencils is represented by the expression 4 x 2)
- Interpret models as multiplicative expressions (Pictorial representation of 3 groups of 4 shapes is 3 x 4)

TESTING FOCUS:

- 3.OA.A.1 IS SUBJECT TO TYPE I QUESTIONS ON THE PARCC ASSESSMENT.

Clarifications, limits, emphases, and other information intended to ensure appropriate variety in tasks:

- Tasks involve interpreting rather than calculating products in terms of equal groups, arrays, area, and/or measurement quantities. (See CCSSM, Table 2, Common multiplication and division situations, p. 89.) For example, “the total number of books if 5 shelves each have 7 books” can be represented by the expression 5x7 rather than “Marcie placed 7 books on each of 5 shelves. How many books does she have?”
- Tasks do not require students to interpret products in terms of repeated addition, skipcounting, or jumps on the number line.

- The italicized example refers to describing a real-world context, but describing a context is not the only way to meet the standard. For example, another way to meet the standard would be to identify contexts in which a total can be expressed as a specified product.

Relationship to Mathematical Practices

- CCSS.MATH.PRACTICE.MP2 Reason abstractly and quantitatively.
- CCSS.MATH.PRACTICE.MP4 Model with mathematics.

Supplemental Resources:

- Progressions for Common Core Mathematics: K-5 Operations and Algebraic Thinking
- IXL – see main concepts and hover over each to see example problems
- Quick Video to intro multiplication for students: Watch from the beginning up until 1:08
- Khan Academy: The first 5 links on the left are all great resources...2 videos, 1 handout, 2 practice links
- The Teacher's Cafe: Be sure to look at: Student knowledge goals, key vocabulary, and the first three lesson module examples.
- Standards For Mathematical Practice : http://www.corestandards.org/Math/Practice/
