MP4d-Multiply By Multiples of 10

Content Area: **Mathematics**
Course(s): **Math 3**
Time Period: **Marking Period 4**
Length: **MP4 Topic 10 10-1 to 10-4**
Status: **Published**

Essential Questions

- What strategies can be used for multiplying by multiples of 10?

Big Ideas

- **Place Value Concepts-** The strategies used to multiply by multiples of 10 are based on the place-value understandings.
- **Properties of Operations-** Students use the Associative and Distributive Properties to solve multiplication problems.

Technology Connection

8.1.5.AP.5: Modify, remix, or incorporate pieces of existing programs into one's own work to add additional features or create a new program.

Enduring Understandings

Number and Operations in Base Ten

3.NBT.A [M] Use place value understanding and properties of operations to perform multi-digit arithmetic

3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations

Operations and Algebraic Thinking

3.OA.D.8 Solve two -step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding

3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the

unknown number to represent the problem.

3.OA.B.5 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 8×7 as $8 \times (5+ 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)

Mathematical Practices Focus

7. Look for and make use of structure.