Unit 1d-Use Multiplication To Divide Division Facts

Content Area: **Mathematics**
Course(s): **Math 3**
Time Period: **Marking Period 1**
Length: **MP1 Topic 4 4-1 to 4-9**
Status: **Published**

Essential Questions

- How can you use multiplication facts to find unknown division facts? How are multiplication and division facts related?

Big Ideas

- **Using Multiplication to Divide**- Students use the inverse relationship between multiplication and division to learn division facts.
- **Properties**- Students use the Associative Property of Multiplication to multiply three numbers.
- **Patterns-** Students will use patterns in multiplication.
- **Relate Multiplication and Division-**Students learn division facts through fact families.

CSDT Technology Connection

8.1.5.NI.2: Describe physical and digital security measures for protecting sensitive personal information

Enduring Understandings

Operations and Algebraic Thinking

3.OA.B [**M**] Understand properties of multiplication and the relationship between multiplication and division

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.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations. 8 x ? = 48, 5=length divided by 3, 6 x 6 = ?

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.)

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

3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

Mathematical Practices Focus

1. Make sense of problems and persevere in solving them.