

Unit 1a-Understanding Multiplication And Division of Whole Numbers

Content Area: **Mathematics**
Course(s): **Math 3**
Time Period: **Marking Period 1**
Length: **MP1 Topic 1 1-1 to 1-6**
Status: **Published**

Essential Questions

- What are different meanings of multiplication and division?

Big Ideas

- **Equal Groups:** Students interpret multiplication and division as equal groups.
- **Skip Counting:** Students use skip counting to generate lists of multiples involving the multiplication facts with 2, 5, and 9.
- **Diagrams:** Students will use bar diagrams to represent both multiplication and division situations.
- **Patterns and Properties:** Students will use patterns in multiplication.

Technology Integration

8.1.5.AP.4: Break down problems into smaller, manageable

Activity:

Students will use technology and create a graph

Enduring Understandings

Operations and Algebraic Thinking

3.OA.A [M] Represent and solve problems involving multiplication and division

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 and/or represent a context in which a total number of objects

can be expressed as 5×7 .

3.OA.A.2 Interpret whole number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.

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.)

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

5. Use appropriate tools strategically.