Unit 3c-Extend Multiplication Concepts to Fractions

Content Area: **Math**
Course(s): **Math 4**
Time Period: **Marking Period 3**
Length: **MP3 Topic 10 10-1 to 10-5**
Status: **Published**

Essential Questions

- How can you describe a fraction using a unit fraction?
- How can you multiply a fraction by a whole number?

Big Ideas

- **Multiplication and Unit Fractions:** Students come to understand that they can think of a fraction as a product of a whole number and a unit fraction. This foundation is incorporated in the development of strategies for multiplying a fraction by a whole number.
- **Time Problems:** Students apply their knowledge of fraction multiplication to solve problems about time.

CSDT Technology Connection

8.1.5.AP.1 Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

Enduring Understandings

Number and Operations—Fractions

4.NF.B.3d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

4.NF.B.4 [M] Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

4.NF.B.4a [M] Understand a fraction a/b as a multiple of 1/b.

4.NF.B.4b [M] Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.

4.NF.B.4c [M] Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.

Measurement and Data

4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...

4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Mathematical Practices Focus

4. Model with mathematics.