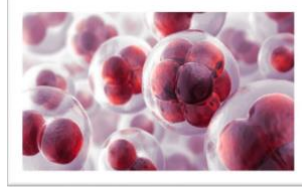




5th Grade Unit 5:

Making Sense of Fraction Multiplication and Division



Overview:

In this unit, students begin by interpreting a fraction as a quotient and use their understanding of whole number multiplication to multiply a whole number and a fraction. Students solve problems involving division of whole numbers with answers that are fractions (which could be in the form of mixed numbers). They develop an understanding of fractions as the division of the numerator by the denominator, that is $a \div b = \frac{a}{b}$. Building from students' work in third grade with multiplication and division with whole numbers in terms of equal-sized groups, students will use multiplication to represent equal-sized groups of fractional amounts. They will solve problems that involve the multiplication of a whole number by a fraction or mixed number using properties of operations. Students will make sense of division of fractions from situations that involve a whole number and a unit fraction and recall that division can be understood in terms of finding the number of equal-sized groups or finding the size of each group. Students will use multiplicative comparison to compare the size of a product of a fraction and a whole number to the size of one of the factors.

Learning Targets:

In Unit 5, students will:

- Describe fractions and perform operations with fractions to solve real-life, mathematical problems using part whole strategies and visual models.
- Explain the meaning of a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$). Solve problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.
- Model and solve problems involving multiplication of a fraction and a whole number.
- Explain why multiplying a whole number by a fraction greater than one results in a product greater than the whole number, and why multiplying a whole number by a fraction less than one results in a product less than the whole number and multiplying a whole number by a fraction equal to one results in a product equal to the whole number.
- Model and solve problems involving division of a unit fraction by a whole number and a whole number by a unit fraction

Key Vocabulary:

denominator	partition (or fair-sharing)	divisor
fraction	equation	equivalence
expression	mixed number	numerator
product	Partial product	partial quotient
Properties of Operations	quotient	remainder

Supporting Resources:

<http://ctlslearn.cobbk12.org/>

<https://gavirtual.instructure.com/courses/34730#modules>

[Multiplying a Fraction by a Whole - GeoGebra](#)

<https://phet.colorado.edu/en/simulations/build-a-fraction>

<https://www.generationgenius.com/videolessons/multiplying-fractions-by-whole-numbers/>