Unit 2 - *Adding and Subtracting Fractions*

Overview

In this unit, students add and subtract fractions with unlike denominators, using a variety of strategies to find common denominators. Money and clocks serve to help students develop intuitions about finding common denominators in order to compare, add, and subtract fractions. Students are introduced to the use of ratio tables to rewrite fractions with common denominators. They extend these strategies and models to solving a variety of story problems, and make generalizations about finding common denominators. Students then gain more explicit experience with greatest common factors and least common multiples as they find common denominators and learn to simplify fractions.

21st Century Capacities: Synthesizing

Stage 1 - Desired Results

ESTABLISHED GOALS/ STANDARDS		
MP 1 Make sense of problems and persevere in solving them MP4 Model with Mathematics MP6 Attend to precision Use equivalent fractions as a strategy to add and subtract fractions. CCSS.MATH.CONTENT.5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. CCSS.MATH.CONTENT.5.NF.A.2 Solve word problems involving addition and subtraction of fractions referring to the same	*Transfer:* *Students will be able to independently use their learning in new situations to...* 1. Demonstrate fluency with math facts, computation and concepts. 2. Use appropriate tools to make reaching solutions more efficient, accessible and accurate. (Synthesizing) 3. Apply familiar mathematical concepts to a new problem or apply a new concept to rework a familiar problem (Synthesizing)	
	Meaning:	
	UNDERSTANDINGS: *Students will understand that:* 1. Effective problem solvers work to make sense of the problem before trying to solve it. 2. Mathematicians flexibly use different tools, strategies, and operations to build conceptual knowledge or solve problems.	ESSENTIAL QUESTIONS: *Students will explore & address these recurring questions:* A. How do I decide if my answer makes sense, and if not, what do I do? B. What math tools/models/strategies can I use to solve the problem? C. How can understanding a pattern help me? D. What is another way to represent this number?

whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	3. Mathematicians apply the mathematics they know to solve problems occurring in everyday life. 4. Mathematicians identify relevant tools, strategies, relationships, and/or information in order to draw conclusions.	

Apply and extend previous understandings of multiplication and division. CCSS.MATH.CONTENT.5.NF.B.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. CCSS.MATH.CONTENT.5.NF.B.4.A Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. CCSS.MATH.CONTENT.5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.		

Acquisition:	
Students will know…	*Students will be skilled at…*
1. How to add/subtract fractions with unlike denominators 2. How to rename fractions 3. How to use various models/strategies when calculating with fractions 4. How a fraction relates in size to a benchmark fraction 5. Vocabulary: decimal, decimal notation, denominator, equivalent fractions, hundredth, numerator, tenth, improper fraction, mixed number, simplest form (lowest terms), factor, multiple, unit fraction, greatest common factor, least common multiple, sum, difference	1. Adding and subtracting fractions (including mixed numbers) with uncommon denominators 2. Adding three fractions (including mixed numbers) 3. Renaming fractions 4. Finding a unit fraction of a whole number (example ⅓ of 27) 5. Finding a fraction of a whole number 6. Using a ratio table to find the best buy 7. Comparing fractions (including mixed numbers) 8. Placing fractions on a number line ? 9. Comparing fractions to benchmarks (half and wholes) 10. Converting a fraction of an hour to minutes 11. Using money models and clock models to add/subtract fractions