Grade: 5 Subject: Mathematics	Unit 5: Addition and Subtraction with Fractions
Big Idea/Rationale	• This unit builds on the conceptual understanding of fractions that students have developed in previous grades. Activities help students develop strategies to add and subtract like and unlike fractions, and to use equivalent fractions. Students use a variety of representations in this unit to help them gain fluency with manipulating proper and improper fractions and mixed numbers. Students will apply their understanding and skills with adding and subtracting fractions to numeric calculations and to real world problem-solving situations.
Enduring Understanding (Mastery Objective)	Students will understand that: • Fractions are a way of comparing a part to a whole. A fractional part exists only when a whole has been divided into equal parts. • Fractions great than one can be expressed as mixed numbers or improper fractions. • Equivalent fractions are found by multiplying or dividing the numerator and denominator by the same non-zero number. • A fraction and the related decimal can be associated with a unique point on the number line. • To add or subtract fractions with like denominators, add or subtract the numerators and write the sum or difference over the common denominator. • To add or subtract with unlike denominators, first change to an equivalent calculation with like denominators. • To add or subtract mixed numbers, calculate the fractional part first, then the whole number. Sometimes whole numbers or fractions need to be renamed. • All nonzero numbers have common multiples, including at least one. Sometimes the least common multiple of two numbers is one of the numbers. • Equivalent fractions can be used to solve probability situations.
Essential Questions (Instructional Objective)	• What is the meaning of a fraction? • How care mixed numbers and improper fractions related? • How are equivalent fractions found? • How are fractions compared? • What is the relationship between fractions and decimals? • What are the rules for adding and subtraction factions? Mixed numbers? • How is the least common multiple found? • How can you use probability to make predictions?
Content (Subject Matter)	• Build other fractions from unit fractions. • Add like fractions. • Express information from pictures, stories and data formats as fractions.

- Compare unit fractions and fractions with like denominators.
- Express and refine comparative concepts.
- Apply greater than (>) and less than (<) notation.
- Subtract like fractions and mixed numbers.
- Understand simple algebraic notation for fractions.
- Solve problems with algebraic notation.
- Practice adding and subtracting fractions with like denominators.
- Build fractions from unit fractions and identify how many more it will take to make one whole.
- Understand that the size of a fraction depends on the size of the whole.
- Solve and explain open-ended word problems that relate fractions and wholes.
- Represent improper fractions and mixed numbers.
- Convert between improper fractions and mixed numbers.
- Apply the terms improper fraction and mixed number.
- Add mixed numbers, applying quick methods when appropriate.
- Read and represent mixed numbers on calibrated lines and rulers.
- Subtract mixed numbers with like denominators.
- Ungroup the first mixed number in a subtraction problem when necessary.
- Explain student-generated methods of subtraction to the class.
- Compare the sizes of two like fractions or mixed numbers and use subtraction to determine the exact difference.
- Construct a chart of comparative measurements.
- Consolidate understanding of addition and subtraction with like fractions.
- Express the main concept of adding and subtracting like fractions.
- Generate and explain simple equivalent fractions.
- Understand and apply the terms equivalent fraction and simplify.
- Understand the role of the multiplier in equivalent fractions.
- Simplify and unsimplify common fractions.
- Generate and simplify fractions in real-world contexts.
- Add and subtract fractions with unlike denominators.
- Apply the terms common denominator and least common denominator.
- Consolidate understanding of equivalent fractions and operations with unlike fractions.
- Express the main concept of equivalent fractions in writing and refine it through class discussion.
- Consolidate understanding of equivalent fractions and operations with unlike fractions.
- Express the main concept of renaming and ungrouping fractions.
- Apply the language of probability.
- Solve probability situation by finding fractional equivalents.
- Recognize equivalent fractions and decimals.
- Identify patterns of fractions and decimals.

	• Use patterns and strategies to compare and order fractions and decimals. • Use a variety of methods to estimate sums and differences of fractions, mixed numbers and decimals. • Solve a variety of problems using mathematical concepts and skills.
Skills/ Benchmarks (CCSS Standards)	• **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 • **5.NF.A.2:** Solve word problems involving addition and subtraction of fractions referring to the same, whole, including cases of equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. • **5.MD.B.2:** Make a line plot to display a data set of measurements in fractions of a unit (1/2, 14, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. • **Mathematical Practices**
Materials and Resources	• Math Expressions, Student Journals, Manipulatives, Math themed literature, BrainPop, IXL Mathematics