Grade 5 Math Unit 6
Canterbury Public Schools

Subject	Math
Grade Level	5
Unit Title	More Decimal and Fraction Operations
Unit Goals	Solve multi-step problems involving measurement conversions, line plots, and fraction operations, including addition and subtraction of fractions with unlike denominators. Explain patterns when multiplying and dividing by powers of 10 and interpret multiplication as scaling by comparing products with factors. Apply their understanding of decimal and fraction operations to real-world contexts, including measurement conversions. Develop skills to interpret and create line plots involving fractions and decimals Strengthen ability to add, subtract, multiply, and divide fractions and decimals, and perform conversions between them. Solve multi-step problems involving metric liquid measurement conversions Section A Measurement Conversions, and Powers of 10 Explain patterns when multiplying and dividing by powers of 10 Solve multi-step problems involving measurement conversions Observe place value patterns when multiplying and dividing Convert metric lengths from a smaller unit, to a larger unit Recognize and explain patterns in the placement of the decimal point when a decimal is divided by a power of 10 Section B Add and Subtract Fractions with Unlike Denominators Add and subtract fractions with unlike denominators Create the line plots to display fractional measurement data, and use the information to solve problems Solve problems involving addition and subtraction of fractions Section C The Size of Products Interpret multiplication as scaling Make generalizations about multiplying a whole number by a fraction greater than, less than and equal to 1
Pacing (# of weeks)	4 - 6 weeks

Standards	5.MD.A.1, 5.NBT.A,5.NBT.A.1, 5.NBT.A.2 5.MD.B.2, 5.NF.A.1, 5.NF.A.2, 5.NF.B.4 5.MD.B.2, 5.NF.A.2, 5.NF.B.4, 5.NF.B.5.a, 5.NF.B.5.b, 5.OA.A
Content/Conceptual Knowledge (know)	How to convert between fractions and decimals. The four basic operations with fractions and decimals. How to interpret and create line plots with fractional and decimal data
Skills (be able to do)	Apply the four basic operations with fractions and decimals Interpret and create line plots with fractional and decimal data Add, subtract, multiply and divide fractions and decimals Convert measurements from one unit to another Create and interpret line plots that represent fractional or decimal values Solve word problems involving measurement conversions and operations with fractions and decimals Solve multi-step problems involving measurement conversions, Explain patterns when multiplying and dividing by powers of 10 Find a number that makes each equation true Solve problems involving addition and subtraction of fractions Add and subtract fractions with unlike denominators Create line plots to display fractional measurement data and use the information to solve problems
Essential Questions	How do we perform operations with decimals and fractions in real-world contexts? What strategies can we use to convert between fractions, decimals, and different units of measurement? How can line plots help us understand data and measurements in a meaningful way? How do different fraction and decimal operations interact when working with measurement conversions? 1. **How do we add and subtract fractions with unlike denominators?** This question encourages students to explore the process of finding a common denominator and simplifying fractions, as well as the application of this method in solving problems. 2. **What is the role of measurement conversions, and how do we convert between different units of measurement?** This question focuses on understanding how conversions between units (such as length, volume, or mass) work, especially when using powers of

	10 (e.g., converting between milliliters and liters, centimeters and meters). 3. **How do powers of 10 help us understand and solve problems involving large and small numbers?** This question helps students grasp the idea that multiplying or dividing by powers of 10 shifts the decimal point, and how this knowledge can simplify working with large and small numbers in real-life scenarios. 4. **How does multiplying a whole number by a fraction greater than, less than, or equal to 1 change the size of the product?** This question encourages students to think about how the size of the fraction affects the result of the multiplication, such as when multiplying by a fraction less than 1 (which makes the product smaller) or greater than 1 (which makes the product larger). 5. **Why is it important to understand decimal and fraction operations in everyday life?** This question invites students to connect the skills they are learning with real-world situations where fractions and decimals are frequently used, such as budgeting, cooking, measuring, and sharing.
Enduring Understandings	Converting between units of measurement is a useful skill in various fields Data representation using line plots helps to visualize and interpret measurements, providing a clearer understanding of trends and sistributions 1. **Fraction and Decimal Operations are Key to Understanding and Solving Real-World Problems** The ability to add, subtract, multiply, and divide fractions and decimals allows us to apply mathematics to a wide range of real-life scenarios, such as cooking, shopping, construction, and measurement. 2. **Measurement Conversions Help Us Compare and Solve Problems in Different Units** Understanding how to convert between units of measurement, especially using powers of 10, enables us to work with different systems of measurement (e.g., converting between meters and centimeters, liters and milliliters, etc.), which is crucial for many practical applications. 3. **Powers of 10 Make It Easier to Understand the Scale of Numbers** Understanding the relationship between powers of 10 helps us quickly scale numbers up or down, which is important when working with decimals and large numbers, such as in scientific notation or when adjusting quantities in real-world problems.

	4. **Fractions with Unlike Denominators Can Be Added and Subtracted by Finding Equivalent Fractions** To add or subtract fractions with unlike denominators, students must learn to find equivalent fractions that have a common denominator. This concept is fundamental to working with fractions in various contexts. 5. **Multiplying a Whole Number by a Fraction Involves Scaling the Number Up or Down** When multiplying a whole number by a fraction greater than, less than, or equal to 1, we are either scaling the whole number up (if the fraction is greater than 1) or down (if the fraction is less than 1). This concept is foundational for understanding proportional relationships and solving real-world problems.
Vocabulary	Convert, line plot, fraction, decimal, measurement conversion, mixed number, improper fraction, equivalent fractions, simplify, common denominator, scaling, area, cubic unit, power of 10,
Common Learning Experiences	Direct instruction with measurement and conversions from one to another Use line plots Number talks PLC: Lesson 2, Activity 1, Population of Delaware and India PLC: Lesson 8, Activity 2, Add and subtract Centers Warm-ups and cool-downs Classroom instructional activities
Assessments	Tasks : complete a project in which they collect data on a specific measurement in different units, convert those measurements between fractions and decimals, and then represent the data on a line plot. Draw a conclusion based on the line plot. Given a set of real-world problems students will perform the appropriate operations with fractions and decimals, including measurement conversions. Explain their process for solving each problem. Solve problems involving addition and subtraction of fractions Quizzes, homework, class discussions, interpret multiplication as scaling
Resources	Tools for creating a visual display, yardsticks, meter sticks,

Strategies	Notice and Wonder, hands-on experiences with measuring tools, compare and connect,