

**Course Description:**

Semester B begins with students continuing to work with fractions. The first lesson focuses on ratios and challenges students to solve word problems using fractions and ratios in practical life situations. Learners continue to strengthen their math skills by studying mixed and fraction products, and fraction application, models, and division. The third critical area that students will focus on in Grade 5 Math is volume. Students will receive lessons in measurement of length, weight, and volume. They will end the course with a focus on geometry. Varied types of instruction are used to enhance their learning, including video and real life applications, activities, and creative projects.

**Materials needed:** Ruler, 8 pennies, graph paper, 3 plastic containers with similar volume and different shapes, and scissors.

Module	Lesson Title	Objectives	Assessments
1	Writing Ratios	<ul style="list-style-type: none"> <li>Express comparisons in ratio form.</li> </ul>	<ul style="list-style-type: none"> <li>Writing Ratios Quiz</li> </ul>
	Writing Fractions as Division	<ul style="list-style-type: none"> <li>Interpret a fraction as division of the numerator by the denominator.</li> </ul>	<ul style="list-style-type: none"> <li>Writing Fractions as Division Quiz</li> </ul>
	Using Fraction Models	<ul style="list-style-type: none"> <li>Use visual fraction models to solve word problems involving division with fractions in the answer.</li> </ul>	<ul style="list-style-type: none"> <li>Using Fraction Models Quiz</li> </ul>
	Writing Equations	<ul style="list-style-type: none"> <li>Use equations to solve word problems involving division to represent the problems with fractions in the answer.</li> </ul>	<ul style="list-style-type: none"> <li>Writing Equations Quiz</li> <li>Ratios Assignment</li> <li>Ratios Lesson Quiz</li> </ul>
	Locating Fractions on a Number Line	<ul style="list-style-type: none"> <li>Locate fractions on a number line.</li> </ul>	<ul style="list-style-type: none"> <li>Locating Fractions on a Number Line Quiz</li> </ul>
	Comparing Fractions on a Number Line	<ul style="list-style-type: none"> <li>Compare fractions using a number line.</li> </ul>	<ul style="list-style-type: none"> <li>Comparing Fractions on a Number Line Quiz</li> </ul>
	Estimating Fraction Sums and Differences	<ul style="list-style-type: none"> <li>Use a benchmark fraction to estimate and examine the reasonableness of answers.</li> </ul>	<ul style="list-style-type: none"> <li>Estimating Fraction Sums and Differences Quiz</li> </ul>

Module	Lesson Title	Objectives	Assessments
	Estimating Fractions in Problem Solving	<ul style="list-style-type: none"> <li>Use a benchmark fraction to estimate and examine the reasonableness of answers.</li> <li>Use fraction estimation to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>Estimating Fractions in Problem Solving Quiz</li> <li>Number Line Partitions Lesson Quiz</li> </ul>
	Using Visual Models to Represent Fractions	<ul style="list-style-type: none"> <li>Use visual fraction models to represent fractions.</li> <li>Multiply a whole number by a fraction.</li> </ul>	<ul style="list-style-type: none"> <li>Using Visual Models to Represent Fractions Quiz</li> </ul>
	Creating Story Problems	<ul style="list-style-type: none"> <li>Use visual fraction models to solve word problems involving mixed number products.</li> </ul>	<ul style="list-style-type: none"> <li>Creating Story Problems Quiz</li> </ul>
	The Commutative Property	<ul style="list-style-type: none"> <li>Apply the commutative property to mixed products.</li> </ul>	<ul style="list-style-type: none"> <li>The Commutative Property Quiz</li> </ul>
	Multiplying a Whole Number by a Fraction	<ul style="list-style-type: none"> <li>Multiply a whole number by a fraction.</li> </ul>	<ul style="list-style-type: none"> <li>Multiplying a Whole Number by a Fraction Quiz</li> <li>Mixed Products Lesson Quiz</li> </ul>
2	Finding a Fraction of a Fraction	<ul style="list-style-type: none"> <li>Use visual fraction models to represent the multiplication of a fraction by a fraction.</li> </ul>	<ul style="list-style-type: none"> <li>Finding a Fraction of a Fraction Quiz</li> </ul>
	Multiplying Fractions by Fractions	<ul style="list-style-type: none"> <li>Multiply a fraction by a fraction.</li> </ul>	<ul style="list-style-type: none"> <li>Multiplying Fractions by Fractions Quiz</li> </ul>
	Using Fraction Models to Solve Word Problems	<ul style="list-style-type: none"> <li>Use visual fraction models to solve word problems involving fraction products.</li> </ul>	<ul style="list-style-type: none"> <li>Using Fraction Models to Solve Word Problems Quiz</li> <li>Fraction Products Lesson Quiz</li> </ul>
	Area with Fractional Sides	<ul style="list-style-type: none"> <li>Use tiles to find the area and perimeter of a rectangle with fractional side lengths.</li> </ul>	<ul style="list-style-type: none"> <li>Area with Fractional Sides Quiz</li> </ul>
	Finding Area by Multiplying	<ul style="list-style-type: none"> <li>Use formulas to solve word problems involving mixed number and fraction products.</li> </ul>	<ul style="list-style-type: none"> <li>Finding Area by Multiplying Quiz</li> </ul>
	Finding Perimeter	<ul style="list-style-type: none"> <li>Use tiles to find the perimeter of a rectangle with fractional side lengths.</li> </ul>	<ul style="list-style-type: none"> <li>Finding Perimeter Quiz</li> <li>Formulas Lesson Quiz</li> </ul>

Module	Lesson Title	Objectives	Assessments
	Multiplying by Less Than One	<ul style="list-style-type: none"> <li>Show that multiplying the numerator and denominator of a fraction by the same number has the same effect as multiplying that fraction by 1.</li> <li>Recognize that multiplying a given whole number by a fraction less than 1 results in a product smaller than the given number.</li> </ul>	<ul style="list-style-type: none"> <li>Multiplying by Less Than One Quiz</li> </ul>
	Multiplying by More Than One	<ul style="list-style-type: none"> <li>Recognize that multiplying a given whole number by a fraction greater than 1 results in a product greater than the given number.</li> </ul>	<ul style="list-style-type: none"> <li>Multiplying by More Than One Quiz</li> </ul>
	Less Than, Greater Than, or Equal To	<ul style="list-style-type: none"> <li>Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.</li> </ul>	<ul style="list-style-type: none"> <li>Less Than, Greater Than, or Equal To Quiz</li> </ul>
	Comparing Products	<ul style="list-style-type: none"> <li>Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.</li> </ul>	<ul style="list-style-type: none"> <li>Comparing Products Quiz</li> <li>Comparing Numbers Lesson Quiz</li> </ul>
3	Using Fraction Models to Solve Problems	<ul style="list-style-type: none"> <li>Use visual fraction models to solve real world problems involving multiplication of fractions and mixed numbers.</li> </ul>	<ul style="list-style-type: none"> <li>Using Fraction Models to Solve Problems Quiz</li> </ul>
	Using Equations to Solve Problems	<ul style="list-style-type: none"> <li>Use equations to solve real world problems involving multiplication of fractions and mixed numbers.</li> </ul>	<ul style="list-style-type: none"> <li>Using Equations to Solve Problems Quiz</li> </ul>
	Explaining Your Products	<ul style="list-style-type: none"> <li>Explain in writing the process of how to solve real world problems involving multiplication of fractions and mixed numbers.</li> </ul>	<ul style="list-style-type: none"> <li>Explaining Your Products Quiz</li> <li>Fraction Applications Lesson Quiz</li> </ul>
	Identifying Unit Fractions	<ul style="list-style-type: none"> <li>Define and identify a unit fraction.</li> </ul>	<ul style="list-style-type: none"> <li>Identifying Unit Fractions Quiz</li> </ul>

Module	Lesson Title	Objectives	Assessments
	Using Models to Divide with Unit Fractions	<ul style="list-style-type: none"> <li>Use a visual fraction model to represent the quotient of a unit fraction divided by a non-zero whole number.</li> </ul>	<ul style="list-style-type: none"> <li>Using Models to Divide with Unit Fractions Quiz</li> </ul>
	Multiplication and Division with Unit Fractions	<ul style="list-style-type: none"> <li>Use the relationship between multiplication and division to interpret division of a whole number by a unit fraction and the division of a unit fraction by a non-zero whole number.</li> </ul>	<ul style="list-style-type: none"> <li>Multiplication and Division with Unit Fractions Quiz</li> </ul>
	Dividing Whole Numbers by Unit Fractions	<ul style="list-style-type: none"> <li>Use a visual fraction model to represent the quotient of a whole number by a unit fraction.</li> </ul>	<ul style="list-style-type: none"> <li>Dividing Whole Numbers by Unit Fractions Quiz</li> </ul>
	Reciprocals	<ul style="list-style-type: none"> <li>Identify reciprocals.</li> </ul>	<ul style="list-style-type: none"> <li>Reciprocals Quiz</li> </ul>
	Unit Fractions Divided by Whole Numbers	<ul style="list-style-type: none"> <li>Divide a unit fraction by a whole number.</li> <li>Use a word problem to represent the division of a unit fraction by a non-zero whole number.</li> </ul>	<ul style="list-style-type: none"> <li>Unit Fractions Divided by Whole Numbers Quiz</li> </ul>
	Whole Numbers Divided By Unit Fractions	<ul style="list-style-type: none"> <li>Divide a whole number by a unit fraction.</li> <li>Use a word problem to represent the division of a whole number by a unit fraction.</li> </ul>	<ul style="list-style-type: none"> <li>Whole Numbers Divided By Unit Fractions Quiz</li> <li>Fraction Division Lesson Quiz</li> </ul>
4	Customary Length Conversions	<ul style="list-style-type: none"> <li>Convert length measurements within the customary system of measurement.</li> </ul>	<ul style="list-style-type: none"> <li>Customary Length Conversions Quiz</li> </ul>
	Customary Weight Conversions	<ul style="list-style-type: none"> <li>Convert weight measurements within the customary measurement system.</li> </ul>	<ul style="list-style-type: none"> <li>Customary Weight Conversions Quiz</li> </ul>
	Customary Volume Conversions	<ul style="list-style-type: none"> <li>Convert volume measurements within the customary measurement system.</li> </ul>	<ul style="list-style-type: none"> <li>Customary Volume Conversions Quiz</li> </ul>
	Metric Conversions	<ul style="list-style-type: none"> <li>Convert measurements within the metric system of measurement.</li> </ul>	<ul style="list-style-type: none"> <li>Metric Conversions Quiz</li> <li>Measurement Conversions Lesson Quiz</li> </ul>

Module	Lesson Title	Objectives	Assessments
		<ul style="list-style-type: none"> <li>Solve multi-step measurement conversions in real-world problems.</li> <li>Explore how the base-ten system supports conversions within the metric system.</li> </ul>	
	Measuring Length	<ul style="list-style-type: none"> <li>Measure objects to one-eighth of a unit of length.</li> </ul>	<ul style="list-style-type: none"> <li>Measuring Length Quiz</li> </ul>
	Reading and Creating Line Plots	<ul style="list-style-type: none"> <li>Display a data set of measurements in fractions of a unit of length on a line plot.</li> </ul>	<ul style="list-style-type: none"> <li>Reading and Creating Line Plots Quiz</li> </ul>
	Problem Solving with Line Plots	<ul style="list-style-type: none"> <li>Add and multiply fractions based on length data in line plots.</li> <li>Solve length word problems involving information presented in line plots by using operations on fractions.</li> </ul>	<ul style="list-style-type: none"> <li>Problem Solving with Line Plots Quiz</li> <li>Length Lesson Quiz</li> </ul>
	Reading a Scale	<ul style="list-style-type: none"> <li>Measure objects to one-eighth of a unit of weight.</li> </ul>	<ul style="list-style-type: none"> <li>Reading a Scale Quiz</li> </ul>
	Reviewing Line Plots with Weight	<ul style="list-style-type: none"> <li>Display a data set of measurements in fractions of a unit of weight on a line plot.</li> </ul>	<ul style="list-style-type: none"> <li>Reviewing Line Plots with Weight Quiz</li> </ul>
	Solving Line Plot Problems	<ul style="list-style-type: none"> <li>Add and multiply fractions based on weight data in line plots.</li> <li>Solve weight word problems involving information presented in line plots by using operations on fractions.</li> </ul>	<ul style="list-style-type: none"> <li>Solving Line Plot Problems Quiz</li> </ul>
	What Is Volume?	<ul style="list-style-type: none"> <li>Define volume.</li> </ul>	<ul style="list-style-type: none"> <li>What Is Volume? Quiz</li> </ul>
	Area and Volume	<ul style="list-style-type: none"> <li>Use models to demonstrate the relationship between area and volume.</li> <li>Define the standard units for measuring volume.</li> <li>Identify the dimensions that are used to find solid volume (length, width, height).</li> </ul>	<ul style="list-style-type: none"> <li>Area and Volume Quiz</li> <li>Volume Measurements Introduction Lesson Quiz</li> </ul>

Module	Lesson Title	Objectives	Assessments
5	Unit Cubes	<ul style="list-style-type: none"> <li>Use models to demonstrate volume.</li> </ul>	<ul style="list-style-type: none"> <li>Unit Cubes Quiz</li> </ul>
	Volume Using Models	<ul style="list-style-type: none"> <li>Calculate volume using models.</li> </ul>	<ul style="list-style-type: none"> <li>Volume Using Models Quiz</li> </ul>
	Volume Formula	<ul style="list-style-type: none"> <li>Explain why the volume formulas <math>V = b \times h</math> and <math>V = l \times w \times h</math> for the cube is true.</li> </ul>	<ul style="list-style-type: none"> <li>Volume Formula Quiz</li> </ul>
	Area vs. Volume	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>Area vs. Volume Quiz</li> <li>Volume Measurements Lesson Quiz</li> </ul>
	Volume of Rectangular Prism	<ul style="list-style-type: none"> <li>Identifying length, width and height of a rectangular prism.</li> <li>Calculating volume of a rectangular prism.</li> </ul>	<ul style="list-style-type: none"> <li>Volume of Rectangular Prism Quiz</li> </ul>
	Composite Figures	<ul style="list-style-type: none"> <li>Decompose 2-D and 3-D composite shapes into separate smaller shapes.</li> <li>Find the area of 2-D composite figures.</li> <li>Find the volume of 3-D composite figures.</li> </ul>	<ul style="list-style-type: none"> <li>Composite Figures Quiz</li> </ul>
	Finding Missing Dimensions	<ul style="list-style-type: none"> <li>Identify missing dimensions of a rectangular prism.</li> <li>Calculate the missing dimensions of a rectangular prism given volume and two of the dimensions.</li> </ul>	<ul style="list-style-type: none"> <li>Finding Missing Dimensions Quiz</li> </ul>
	Applications of Volume	<ul style="list-style-type: none"> <li>Apply the volume of rectangular prisms in real world applications.</li> </ul>	<ul style="list-style-type: none"> <li>Applications of Volume Quiz</li> <li>3-D and 2-D Figures Lesson Quiz</li> </ul>
	The Coordinate Plane	<ul style="list-style-type: none"> <li>Define and draw the first quadrant of the coordinate plane using a pair of perpendicular lines, or axes, that intersect at the zero point of each line.</li> </ul>	<ul style="list-style-type: none"> <li>The Coordinate Plane Quiz</li> </ul>
	Identifying Coordinate Points	<ul style="list-style-type: none"> <li>Identify ordered pairs on the coordinate plane.</li> </ul>	<ul style="list-style-type: none"> <li>Identifying Coordinate Points Quiz</li> </ul>
	Plotting Coordinate Points	<ul style="list-style-type: none"> <li>Explain how to plot an ordered pair on the coordinate plane.</li> </ul>	<ul style="list-style-type: none"> <li>Plotting Coordinate Points Quiz</li> <li>The Coordinate Plane Lesson Quiz</li> </ul>

Module	Lesson Title	Objectives	Assessments
6	Graphing Figures on the Coordinate Plane	<ul style="list-style-type: none"> <li>Graph ordered pairs to create geometric figures in the first quadrant of the coordinate plane.</li> </ul>	<ul style="list-style-type: none"> <li>Graphing Figures on the Coordinate Plane Quiz</li> </ul>
	Identify Missing Points	<ul style="list-style-type: none"> <li>Identify missing ordered pairs in geometric figures.</li> </ul>	<ul style="list-style-type: none"> <li>Identify Missing Points Quiz</li> </ul>
	Problem Solving with the Coordinate Plane	<ul style="list-style-type: none"> <li>Represent real world problems by graphing points in the first quadrant.</li> </ul>	<ul style="list-style-type: none"> <li>Problem Solving with the Coordinate Plane Quiz</li> <li>Graphing Figures on the Coordinate Plane Lesson Quiz</li> </ul>
	Special Quadrilaterals	<ul style="list-style-type: none"> <li>Define and describe attributes of quadrilaterals.</li> </ul>	<ul style="list-style-type: none"> <li>Special Quadrilaterals Quiz</li> </ul>
	Common Attributes	<ul style="list-style-type: none"> <li>Use reasoning to classify quadrilaterals according to shared attributes.</li> </ul>	<ul style="list-style-type: none"> <li>Common Attributes Quiz</li> </ul>
	Lines of Symmetry	<ul style="list-style-type: none"> <li>Identify lines of symmetry in quadrilaterals.</li> </ul>	<ul style="list-style-type: none"> <li>Lines of Symmetry Quiz</li> <li>Quadrilaterals Lesson Quiz</li> </ul>
	Polygons and Prefixes	<ul style="list-style-type: none"> <li>Define prefixes and their meaning as related to polygons: tri-, quad-, pent-, hex-, hept -, oct-.</li> </ul>	<ul style="list-style-type: none"> <li>Polygons and Prefixes Quiz</li> </ul>
	Hierarchy of Quadrilaterals	<ul style="list-style-type: none"> <li>Create a hierarchy diagram of quadrilaterals.</li> </ul>	<ul style="list-style-type: none"> <li>Hierarchy of Quadrilaterals Quiz</li> </ul>
	Regular and Irregular Polygons	<ul style="list-style-type: none"> <li>Compare and contrast the attributes of regular and irregular polygons.</li> </ul>	<ul style="list-style-type: none"> <li>Regular and Irregular Polygons Quiz</li> </ul>
	Lines of Symmetry of Polygons	<ul style="list-style-type: none"> <li>Identify lines of symmetry in polygons.</li> </ul>	<ul style="list-style-type: none"> <li>Lines of Symmetry of Polygons Quiz</li> <li>Polygons Lesson Quiz</li> </ul>