

Course Description:

Grade 4 math uses a varied amount of instructional material to reinforce and teach new math skills to the 4th grade learners. Instruction includes creative videos, mathematical storytelling, practical math applications and repetition to reinforce skills throughout the course. Three areas are focused on and students will finish the course with a strong knowledge in these content areas. The first is developing an understanding and fluency with multi-digit multiplication, and developing the understanding of dividing to find quotients involving multi-digit dividends. The second is developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions with whole numbers. The third will be addressed in semester B.

Materials Needed: Scissors, Graph paper, Markers, Ruler

Module	Lesson Title	Objectives
1	Writing Multiplication	<ul style="list-style-type: none"> Identify and write multiplicative equations.
	Multiplication Comparison	<ul style="list-style-type: none"> Make multiplicative comparisons.
	Solving Basic Equations	<ul style="list-style-type: none"> Solve basic multiplication equations for an unknown.
	Parts of a Word Problem	<ul style="list-style-type: none"> Identify the known and unknown parts of a word problem.
	Translation into Equations	<ul style="list-style-type: none"> Translate comparative situations into equations with an unknown and solve.
	Interpretation	<ul style="list-style-type: none"> Interpret word problems.
	Estimation Strategies	<ul style="list-style-type: none"> Use acceptable estimation strategies and justify the solution.
	Remainders	<ul style="list-style-type: none"> Add two multi-digit whole numbers with accuracy, efficiency and flexibility.
Module 1 Exam		

Module	Lesson Title	Objectives
2	Factoring	<ul style="list-style-type: none">Find factors of whole numbers.
	Prime Numbers	<ul style="list-style-type: none">Use factoring rules to classify numbers as prime and justify answer.
	Common Multiples	<ul style="list-style-type: none">Find multiples of whole numbers.
	Composite Numbers	<ul style="list-style-type: none">Use factoring rules to classify numbers as composite, and justify answers.
	Basic Patterns	<ul style="list-style-type: none">Identify attributes that determine a pattern.
	Arithmetic Number Patterns	<ul style="list-style-type: none">Identify number patterns.
	T-Charts	<ul style="list-style-type: none">Use a t-chart to identify number patterns.
	Rounding	<ul style="list-style-type: none">Round numbers to the nearest tens and hundreds place.
	Estimating	<ul style="list-style-type: none">Use rounding to make estimates.
	Place Value	<ul style="list-style-type: none">Identify place value in multi-digit whole numbers.
	Multiplying by 10 and 100	<ul style="list-style-type: none">Multiply by 10 and 100.
Module 2 Exam		
3	Expanded Form	<ul style="list-style-type: none">Read and write numbers using expanded form.
	Rounding to Hundreds and Thousands	<ul style="list-style-type: none">Using a number line, round answers to the nearest 100 and 1000 place.
	Hundreds Chart	<ul style="list-style-type: none">Using a hundreds chart, round answers to the nearest 100 and 1000 place.

Module	Lesson Title	Objectives
	Comparison	<ul style="list-style-type: none"> Compare two multi-digit whole numbers.
	Adding Two Whole Numbers	<ul style="list-style-type: none"> Add two multi-digit whole numbers with accuracy, efficiency and flexibility.
	Adding Several Whole Numbers	<ul style="list-style-type: none"> Add several multi-digit whole numbers with accuracy, efficiency and flexibility.
	Re-grouping	<ul style="list-style-type: none"> Add multi-digit whole numbers using a re-grouping strategy.
	Subtraction Skills	<ul style="list-style-type: none"> Subtract multi-digit whole numbers with accuracy, efficiency and flexibility.
	Subtraction with Zeros	<ul style="list-style-type: none"> Subtract multi-digit whole numbers with accuracy, efficiency and flexibility. Apply knowledge of subtraction to solve word problems.
	Module 3 Exam	
4	Clustering	<ul style="list-style-type: none"> Multiply numbers using clustering.
	Regrouping Multiplication	<ul style="list-style-type: none"> Multiply numbers using re-grouping.
	Multiplying with Arrays	<ul style="list-style-type: none"> Multiply numbers using the arrays model.
	Applications of Multiplication	<ul style="list-style-type: none"> Apply any of the multiplication strategies to solve real-life problems.
	Long Division	<ul style="list-style-type: none"> Divide numbers using a traditional algorithm.
	Dividing Using Grouping	<ul style="list-style-type: none"> Divide numbers using groups for the divisor.
	Area Model	<ul style="list-style-type: none"> Divide numbers using area models.
	Application of Division Strategies	<ul style="list-style-type: none"> Apply any of the division strategies to solve real-life problems.

Module	Lesson Title	Objectives
	Fraction Parts	<ul style="list-style-type: none"> Define fraction, numerator, denominator, fraction bar.
	Fraction Shape	<ul style="list-style-type: none"> Identify the number of shaded parts and the number of equal parts in a shape (circle, rectangle).
	Writing Fractions	<ul style="list-style-type: none"> Write a fraction using mathematical notation and using words.
5	Dividing Number Lines	<ul style="list-style-type: none"> Divide a number line into parts (fractions).
	Identifying Fractions on a Number Line	<ul style="list-style-type: none"> Locate fractions on a number line.
	Equivalent Fractions	<ul style="list-style-type: none"> Find equivalent fractions using models. Find equivalent fractions using multiplication. Find equivalent fractions using division.
	Common Denominators	<ul style="list-style-type: none"> Create common denominators by multiplication to form equivalent fractions.
	Greatest Common Factor	<ul style="list-style-type: none"> Determine the greatest common factors of whole numbers.
	Least Common Multiple	<ul style="list-style-type: none"> Determine the least common multiple of whole numbers.
	Module 5 Exam	
6	Adding Like Fractions	<ul style="list-style-type: none"> Add like fractions.
	Adding Mixed Numbers	<ul style="list-style-type: none"> Add mixed numbers.
	Improper Fractions in Mixed Numbers	<ul style="list-style-type: none"> Add improper fractions in mixed numbers.
	Adding Unlike Fractions	<ul style="list-style-type: none"> Add unlike fractions.

Module	Lesson Title	Objectives
	Subtracting Like Fractions	<ul style="list-style-type: none">Subtract like fractions.
	Subtracting Unlike Fractions	<ul style="list-style-type: none">Subtract unlike fractions.
	Subtracting Mixed Numbers	<ul style="list-style-type: none">Subtract mixed numbers.
	Subtracting Improper Fractions	<ul style="list-style-type: none">Subtract improper fractions.
	Dividing Fractions Using Reciprocals	<ul style="list-style-type: none">Divide fractions using reciprocals.
	Dividing Fractions Using Modeling	<ul style="list-style-type: none">Divide fractions using models.
	Dividing Whole Numbers into Fractions	<ul style="list-style-type: none">Divide whole numbers and fractions.
	Dividing Mixed Numbers	<ul style="list-style-type: none">Divide whole numbers and mixed numbers.
	Module 6 Exam	

Course Description:

Semester B of grade 4 math has learners continuing to work with fractions. They will learn to multiply fractions and convert them to decimals. Students will also begin to learn to equivalent measurements of length, weight, mass, and capacity. They will also learn helpful skills in understanding time, distance, and money. Students will develop an understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry. Lessons on rectangles, line plots, angles, figure drawing, polygons, and symmetry will be taught. Semester B continues to use varied forms of instruction that allow students to learn these skills in a practical manner.

Materials needed: Colored pencils, crayons or thin markers, Calculator (handheld or online), Ruler, and Scissors, protractor, scale (optional)

Module	Lesson Title	Objectives
1	Fraction Multiplication	<ul style="list-style-type: none"> Identify solutions on a number line.
	Fraction Multiplication Using Visual Models	<ul style="list-style-type: none"> Use visual models to represent word problems with fractions.
	Multiplying a Whole Number by a Fraction	<ul style="list-style-type: none"> Multiply a fraction by a whole number.
	Using Multiplication to Solve Word Problems With Fractions	<ul style="list-style-type: none"> Solve word problems involving multiplication of whole numbers and fractions.
	Fractions With Denominators of 10 and 100	<ul style="list-style-type: none"> Identify fractions with denominators of 10. Identify fractions with denominators of 100.
	Comparing Tenths and Hundredths	<ul style="list-style-type: none"> Use grids to compare fractions with denominators 10 and 100.

Module	Lesson Title	Objectives
		<ul style="list-style-type: none"> Write equivalent fractions with denominators 10 and 100.
	Add Tenths and Hundredths	<ul style="list-style-type: none"> Add fractions with denominators 10 and 100.
	Identifying Fractions as Division	<ul style="list-style-type: none"> Relate division to fractions.
	Fractions as Decimals	<ul style="list-style-type: none"> Write decimals to the hundredths place.
	Decimals on Number Lines	<ul style="list-style-type: none"> Locate decimals on a number line.
	Comparing Fractions to Decimals	<ul style="list-style-type: none"> Compare fractions to decimals.
2	Compare Decimals Using Area Models	<ul style="list-style-type: none"> Compare decimals using area models.
	Compare Decimals Using Decimal Circles	<ul style="list-style-type: none"> Compare decimals using decimal circles.
	Compare Decimals Using Number Lines	<ul style="list-style-type: none"> Compare decimals using number lines and meter sticks.
	Explaining Decimal Comparisons	<ul style="list-style-type: none"> Demonstrate and explain the reasonableness of comparisons.
	Represent Equivalent Measures of Customary Units of Length	<ul style="list-style-type: none"> Use tables to represent equivalent measurements.

Module	Lesson Title	Objectives
	Measuring With Inches	<ul style="list-style-type: none"> Measure, compare, and estimate length in inches, feet, yards, miles.
	Measuring and Converting Length Measurements	<ul style="list-style-type: none"> Measure, compare, and estimate length in inches, feet, yards, miles. Compare lengths by converting measurements from smaller to larger units and from larger units to smaller units.
	Estimating Measurements of Length	<ul style="list-style-type: none"> Measure, compare, and estimate length in kilometers, meters, and centimeters. Measure, compare, and estimate length in inches, feet, yards, miles.
	Measuring Weight and Mass	<ul style="list-style-type: none"> Measure, compare, and estimate weight and mass in, pounds, ounces, tons, kilograms, or grams.
	Equivalent Measurements of Weight	<ul style="list-style-type: none"> Use tables to represent equivalent measurements.
	Weight Conversions	<ul style="list-style-type: none"> Compare weights and masses by converting measurements from smaller to larger units and from larger units to smaller units.
	Problem Solving and Estimating Weight	<ul style="list-style-type: none"> Solve word problems involving masses of objects. Use diagrams to represent measurement quantities with a scale. Measure, compare, and estimate weight and mass in, pounds, ounces, tons, kilograms, or grams.
3	Liters and Milliliters	<ul style="list-style-type: none"> Measure and compare capacity in liters, milliliters, ounces, cups, pints, quarts and gallons.
	Volume Conversions	<ul style="list-style-type: none"> Measure and compare capacity in liters, milliliters, ounces, cups, pints, quarts and gallons. Compare capacities by converting measurements from smaller to larger units and from larger units to smaller units.
	Solving Problems About Volume	<ul style="list-style-type: none"> Solve word problems involving liquid volume.
	What is Time?	<ul style="list-style-type: none"> Measure and compare time in hours, minutes and seconds.
	Solving Elapsed Time Problems	<ul style="list-style-type: none"> Solve word problems involving intervals of time.

Module	Lesson Title	Objectives
	Solving Problems With Time Conversions	<ul style="list-style-type: none"> Solve word problems that apply time conversions.
	Solving Problems With Time and Distance	<ul style="list-style-type: none"> Solve word problems involving time and distance.
	Money Conversions	<ul style="list-style-type: none"> Express monetary amounts from a larger unit in terms of a smaller unit.
	Solving Problems With Money	<ul style="list-style-type: none"> Solve word problems involving money.
	Estimating With Money	<ul style="list-style-type: none"> Estimate money to solve word problems.
	Money as Fractions	<ul style="list-style-type: none"> Using equivalent measurements, solve problems with fractions and decimals.
4	The Rectangle	<ul style="list-style-type: none"> Identify length and width of rectangles. Construct rectangles and label the parts.
	Perimeter of a Rectangle	<ul style="list-style-type: none"> Find the perimeter of a rectangle.
	Area of Rectangles	<ul style="list-style-type: none"> Find the area of rectangles by covering them with unit squares or by counting squares in models. Find the area of a rectangle, given its length and width.
	Area and Perimeter	<ul style="list-style-type: none"> Given the area or perimeter, find either the length or the width of a rectangle.
	Measuring Inches	<ul style="list-style-type: none"> Measure objects up to an eighth of an inch.
	Line Plots	<ul style="list-style-type: none"> Read line plots and represent measurements on a line plot.
	Problem Solving with Line Plots	<ul style="list-style-type: none"> Add and subtract fractions based on data from a line plot.

Module	Lesson Title	Objectives
	Rays	<ul style="list-style-type: none">Define and name rays.
	Angles	<ul style="list-style-type: none">Define and name angles.
	Angles and Circles	<ul style="list-style-type: none">Identify angles by using circles.Use word problems to explore one-degree turns.
5	Types of Angles	<ul style="list-style-type: none">Identify types of angles (acute, obtuse, right).
	Measuring Angles	<ul style="list-style-type: none">Use a protractor to measure angles to the nearest degree.
	Constructing Angles	<ul style="list-style-type: none">Construct angles using a protractor and straight edge.
	Adding Angles	<ul style="list-style-type: none">Find the sum of two angles.
	Subtracting Angles	<ul style="list-style-type: none">Decompose angles into smaller parts.
	Writing Equations	<ul style="list-style-type: none">Use equations to express the sum and difference of angles.
	Drawing Geometric Basics	<ul style="list-style-type: none">Identify and draw points, lines, segments, rays, angles.
	Parallel and Perpendicular Lines	<ul style="list-style-type: none">Identify the characteristics of perpendicular and parallel lines.Draw perpendicular and parallel lines.
	Two-Dimensional Shapes	<ul style="list-style-type: none">Identify, describe, and categorize common 2-dimensional shapes.
6	Triangles	<ul style="list-style-type: none">Identify types of angles (acute, obtuse, right).
	Quadrilaterals	<ul style="list-style-type: none">Identify the attributes of quadrilaterals.
	Polygons	<ul style="list-style-type: none">Identify and describe polygons.

Module	Lesson Title	Objectives
	Symmetry in Shapes	<ul style="list-style-type: none">• Define symmetry.• Identify the line of symmetry in figures.
	Lines of Symmetry	<ul style="list-style-type: none">• Draw lines of symmetry in figures.
	Tessellation	<ul style="list-style-type: none">• Create tessellations.