New Perspectives on Learning: Contexts for Learning Mathematics

An inquiry-based math curriculum that uses math workshop every day

GRADES 1-5

FIRST GRADE

	CONCEPTS TAUGHT	CFLM UNITS
FALL	**NUMBER SENSE** • Use a mathrack to explore equivalence, compensation, conservation, addition, and subtraction • Make groups of 5s and 10s **PLACE VALUE AND OPERATIONS** • Skip Count with 2s up to 20, 5s, 10s up to 100 • One-to-one counting through 100 • Write numbers through 100 • Developing basic math facts up to 20	Rhoda Red Bunk Beds and Apple Boxes Organizing and Collecting: The Number System The Double-Decker Bus: Early Addition and Subtraction *Supplement: Minilessons for Early Addition and Subtraction*
WINTER	**MEASUREMENT** • Use non-standard measurements to compare items • Use ruler to measure length to the nearest inch/foot and centimeter **GEOMETRY** • Identify polygons: triangle, quadrilateral, pentagon, hexagon, octagon • Determine which shapes are not polygons **DATA COLLECTION** • Use and count tallies • Make observations of data • Read and interpret bar graphs	Shaping Up the Yard: Paths, Turns, and Polygons Comparing Favorite Collections: Quantifying and Representing Data Measuring for the Art Show: Addition on the Open Number Line *(duplicate unit with 2nd)* Farms and Fences *Supplement: Games for Early Number Sense*
SPRING	**OPERATIONS** • Solve single-digit addition equations through 20 • Solve single-digit subtraction equations through to 20 • Develop strategies for addition and subtraction to 100 and beyond • Analyze place value patterns in our number system **MEASUREMENT** • Understand hours, minutes, and seconds • Understand the passing of time in fractional pieces of a larger unit (half of an hour)	The Timekeepers Organizing and Collecting, Vol. 2: The Number System *Supplement: Minilessons for Extending Addition and Subtraction* *Supplement: Games for Young Mathematicians, Vol. 2*

SECOND GRADE

	CONCEPTS TAUGHT	CFLM UNITS
FALL	**NUMBER SENSE** • Recognize place value to 1000s • Mastery of addition facts within 20 • Mastery of subtraction facts within 20 • Develop addition and subtraction skills within 1000 • Skip count by 2, 5, 10, to 100 • Counting and grouping numbers to count efficiently **MEASUREMENT** • Measure with non-standard units to compare items	Organizing and Collecting Beads and Shoes, Making Twos: Early Number Sense Measuring for The Art Show *Supplement: Minilessons for Early Number Sense, Addition, and Subtraction* *Supplement: Minilessons for Extending Addition and Subtraction*
WINTER	**MEASUREMENT, TIME, AND MONEY** • Understand the value of pennies, nickels, dimes, quarters, and dollars • Equivalence with money – different coins can create the same value • Using groups of 5s and 10s to help read an analog clock • Understand fractions of an hour (half hour, quarter hour) • Measure length using inches, feet, yards, centimeters, and meters **DATA COLLECTION** • Create and interpret graphs (line graph, bar graph, line plots) • Draw conclusions about data sets by comparing and contrasting **OPERATIONS** • Solving for an unknown quantity using addition and subtraction	Pete's Penny Pockets: The Number System Time and Money Tanisha and Tamika's Toolbox: Linear Measurement Systems Trades, Jumps and Stops: Early Algebra Value Bars and Line Plots
SPRING	**OPERATIONS** • Addition and subtraction within 1000 using place value • Recognize and create arrays and equal groups of items • Begin to recognize multiplication as repeated addition • Explore various models to solve 2- and 3-digit addition and subtraction equations **GEOMETRY** • Identify 3D shapes • Sort polygons based on their properties • Develop a beginning understanding of area and perimeter	Ages and Timelines: Subtraction on an Open Number Line *(duplicate unit with 3rd)* Little Cities: Geometry

THIRD GRADE

	CONCEPTS TAUGHT	CFLM UNITS
FALL	**NUMBER SENSE** • Count up and back to solve problems **OPERATIONS** • Solve 2-digit addition problems with regrouping • Solve subtraction problems with ungrouping, with zeros in all places – through the 100s • Solve addition and subtraction problems with money	Ages and Timelines: Subtraction on an Open Number Line *(duplicate unit with 2nd)* The T-Shirt Factory: Place Value, Addition, and Subtraction *Supplement: Minilessons for Extending Addition and Subtraction* Groceries, Stamps, and Measuring Strips: Early Multiplication The Big Dinner: Multiplication with the Ratio Table
WINTER	**OPERATIONS** • Understand reciprocal relationships between multiplication and division • Memorize multiplication facts through 12 **NUMBER SENSE** • Understand fact families for multiplication and division **PROBLEM SOLVING** • Solve 2-step word problems with 2 operations (addition, subtraction, multiplication) • Solve logic problems • Strategize and verbalize strategies for problem solving **GEOMETRY** • Recognize, identify, and create examples of symmetry, congruence, lines, and angles • Recognize, identify, and create various 2D shapes • Find area and perimeter of square and rectangle	Muffles Truffles: Multiplication with the Array Tabletops, Floors, and Fields: Area, Perimeter, and Partitioning *Supplement: Minilessons for Early Multiplication and Division*
SPRING	**FRACTIONS** • Recognize and identify proper fractions • Identify numerator and denominator • Recognize equivalent fractions **DATA COLLECTION** • Read, analyze, and create graphs – bar, line, pictographs, Venn Diagrams • Interpret graphs using median and mode **MEASUREMENT AND TIME** • Use a ruler to measure inches/feet/yards/cm/m • Identify appropriate measurement to use • Tell elapsed time • Volume: cup, pint, quart, gallon	Building Benches and Measuring Tools: Introduction to Fractions All About Sharks: Data Representation and Analysis Elapsed Time, Weight, and Liquid Volume

FOURTH GRADE

	CONCEPTS TAUGHT	CFLM UNITS
FALL	**NUMBER SENSE AND OPERATIONS** • Recognize common factors and multiples • Solidify automaticity of basic multiplication facts • Subtract with regrouping • Understand place value up to 100,000 **PROBLEM SOLVING** • Generate and apply patterns and sequences of numbers • Understand the relationship between multiplication and division **GEOMETRY** • Label angles and polygons • Solve for area of a rectangle • Identify types of triangles (right, obtuse, acute) • Identify (but don't calculate) circumference, diameter, radius, degrees • Recognize symmetry • Identify circumference, diameter, radius, degrees • Use a protractor appropriately	Number Detectives: Patterns, Functions, and Structures Skateboard Lane Puzzle Packing Companies: Extending Place Value *Supplement: Minilessons for Early Multiplication and Division*
WINTER	**OPERATIONS AND PLACE VALUE** • Immediate recall of multiplication/division math facts • Subtract with regrouping • Relate place value and the distributive property in connection to division • Solve problems using long division with remainders **PROBLEM SOLVING** • Solve 2 steps, 2 operations (addition, subtraction, multiplication) **MEASUREMENT** • Understand both the customary and metric measurement systems • Understand relationship between cup, pint, quart, gallon • Round to nearest measurement unit • Use measurement to find length and liquid volume	The Teacher's Lounge: Place Value and Division Muffles Measurement Models: Part 1 (US Customary Units) Muffles Measurement Models: Part 2 (Place Value and Metric System) *Supplement: Minilessons for Extending Multiplication and Division*
SPRING	**FRACTIONS** • Define meaning of numerator/denominator • Identify on a number line; represent fractions with parts, bar, and area models • Identify unit fractions; use as building blocks for fractions • Identify equivalent fractions • Rewrite improper fractions as mixed #s and vice versa • Relationship between fractions and percents **DATA** • Analyze bar and line graphs and pie charts using mean, median, mode, range • Create bar graph • Identify x/y axis • Analyze data using mean, median, mode, range • Create graphs (bar, line, line plot)	Field Trips and Fundraisers From Sunflowers to Growth Patterns: Data Representation and Analysis Marcus Tilus and the Knights of the Polygonal Tables: Angles, Symmetry, and Tessellations *Supplement: Minilessons for Fractions, Decimals, and Percents*

FIFTH GRADE

	CONCEPTS TAUGHT	CFLM UNITS
FALL	**PLACE VALUE** • Through the billions place **OPERATIONS** • Multiplication and division using the array • Partial product solutions for both algorithms **FRACTIONS** • Investigating fractions, decimals, and percentages • Adding and subtracting fractions and mixed numbers • Ratios • Using unit rates to determine greater quantities • Converting fractions, decimals, and percentages • Equivalency • Multiplication and division of fractions and mixed numbers • Equivalent and landmark fractions • Using ratio tables to make equivalent fractions • Simplifying fractions before multiplying and dividing **OPERATIONS** • Length, width, area, volume, and surface area	Field Trips and Fundraisers The Box Factory: Extending Multiplication with the Array Best Buys, Ratios, and Rates: Addition and Subtraction of Fractions Exploring Parks and Playgrounds: Multiplication and Division of Fractions *Supplement: Minilessons for Extending Multiplication and Division*
WINTER	**DECIMALS** • Moving the decimal point and changing the quantity • Place value understanding in order to multiply and divide by powers of 10 • Landmark decimals (.5, .25, .75, etc) • Addition and subtraction of decimals and mixed numbers • Multiplication and division of decimals • Scientific notation • Exponents **DATA** • Coordinate plane • Ordered pairs • X and y axis and working with integers • Graphing a line using the coordinate plane • Graphing (bar graphs, value bars, line plots, line graphs, frequency graphs) • Mean and median using division	The Mystery of the Meter: Decimals Stairsteps and Stairs: Multiplication and Division with Decimals Surveyors and Subways: The Cartesian Plane *Supplement: Minilessons for Fractions, Decimals, Percents*
SPRING	**OPERATIONS** • Algebraic expressions • Variables • Equivalent algebraic expressions • Using double number lines to solve algebraic equations • Understanding positive and negative integers **MEASUREMENT** • Area and surface area • Volume • Rectangular prisms • Area of all triangles, parallelograms, and trapezoid • Designing a building plan using all of the above skills	The California Frog Jumping Contest: Algebra Batteries, Cell Phones, Dalmatians, and Pumpkin Growth: Data Representation and Analysis The Architect's Project: Area, Volume, and Nets