Mathematics Curriculum Guide

Grades 3 – 6

East Ramapo Central School District

Curriculum: Eureka Math² New York Next Generation

Published by Great Minds®

Grade 3 | Grade 4 | Grade 5 | Grade 6

This guide provides an overview of the six learning modules your child will experience during the school year. Each module builds on the last, developing a deep and lasting understanding of mathematics.

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Grade 3 Mathematics

A Story of Units of Any Number

In Grade 3, students make a major leap into multiplication and division — the heart of third-grade math. They build a deep understanding of what it means to multiply and divide, explore the relationship between the two operations, and apply these skills to real-world problems involving area, fractions, measurement, and geometry. By the end of the year, students know their multiplication facts fluently and can solve multi-step problems with confidence.

What Your Child Will Learn This Year — Six Modules

Module 1

Multiplication and Division with Units of 2, 3, 4, 5, and 10

Students are introduced to multiplication and division as connected ideas. They explore equal groups, arrays, and number patterns to build their first set of multiplication facts (2s, 3s, 4s, 5s, and 10s). Using drawings, equations, and word problems, students discover key properties like the commutative and distributive properties — concepts they will use for the rest of their math education.

Key Concepts: Equal groups and arrays • Multiplication and division as inverse operations • Key properties of multiplication • Solving word problems with all four operations

Module 2

Place Value Concepts Through Metric Measurement

Students connect place value to real-world measurement by weighing objects in kilograms and grams, and measuring liquids in liters and milliliters. They practice rounding two- and three-digit numbers, and sharpen their addition and subtraction skills using the standard algorithm — all while building number sense through authentic measurement contexts.

Key Concepts: Place value and the base-ten system • Rounding to the nearest ten and hundred • Adding and subtracting three-digit numbers • Metric measurement in real-world contexts

Module 3

Multiplication and Division with Units of 0, 1, 6, 7, 8, and 9

Students complete their multiplication fact fluency by tackling the more challenging units: 6, 7, 8, 9, and special cases of 0 and 1. They explore patterns in multiplication tables, use strategies like break-apart and distribute, and practice solving multi-step word problems — building both fluency and mathematical reasoning.

Key Concepts: Completing the multiplication table • Patterns and rules in multiplication • Multiplying by multiples of 10 • Multi-step word problems

Module 4

Multiplication and Area

Students discover that area — the amount of space inside a flat shape — is directly connected to multiplication. They tile rectangles with unit squares, relate side lengths to area, and apply the formula for area of a rectangle. They also explore composite shapes and solve real-world problems involving area.

Key Concepts: Understanding area as a measurable attribute • Using multiplication to find area • Decomposing shapes to find area • Real-world area applications

Module 5

Fractions as Numbers

Students learn that fractions are numbers — not just parts of a pizza! They use fraction strips, tape diagrams, and number lines to name, compare, and find equivalent fractions. They also place fractions on the number line and explore fractions greater than one, building a solid foundation for fraction work in Grades 4 and 5.

Key Concepts: Fractions as equal parts of a whole • Unit and non-unit fractions • Placing fractions on a number line • Comparing and finding equivalent fractions

Module 6

Geometry, Measurement, and Data

In this culminating module, students explore time, two-dimensional shapes, and perimeter. They tell time to the nearest minute, solve time-interval word problems, classify polygons and quadrilaterals by their attributes, and measure perimeter using all four operations. They also collect and represent data using scaled picture graphs, bar graphs, and line plots.

Key Concepts: Telling time and solving time problems • Classifying and drawing 2D shapes • Perimeter vs. area • Collecting and displaying data

Grade 4 Mathematics

A Story of Fractional Units

Grade 4 is a year of expansion — students extend their number sense far beyond whole numbers. They work with very large numbers up to 1,000,000, master multi-digit multiplication and division, and dive deep into fractions and decimals. Geometry and measurement are woven throughout, giving students opportunities to apply their growing number skills in new contexts. By year's end, students are equipped with powerful tools for reasoning and problem solving.

What Your Child Will Learn This Year — Six Modules

Module 1

Place Value Concepts for Addition and Subtraction

Students explore numbers up to 1,000,000, reading and writing them in multiple forms and understanding that each digit represents 10 times the value of the digit to its right. They round multi-digit numbers, add and subtract using the standard algorithm, and apply these skills to solve multi-step word problems. Metric measurement conversions extend and deepen place value understanding.

Key Concepts: Place value up to 1,000,000 • Rounding multi-digit numbers • Adding and subtracting large numbers • Metric measurement conversion

Module 2

Place Value Concepts for Multiplication and Division

Students build a strong foundation for multi-digit multiplication and division. They explore factors, multiples, prime and composite numbers, and patterns in number sequences. They multiply and divide two- and three-digit numbers by one-digit numbers using area models, place value strategies, and the distributive property. Students also solve measurement problems involving perimeter and area.

Key Concepts: Factors, multiples, prime and composite numbers • Multiplying and dividing multi-digit numbers • Area models and the distributive property • Perimeter and area problem solving

Module 3

Multiplication and Division of Multi-Digit Numbers

Students extend multiplication to four-digit numbers times one-digit numbers and two-digit numbers times two-digit numbers — including the standard algorithm. Division is extended to multi-digit dividends with remainders. Students explore measurement conversions involving time, customary weight, and liquid volume, and solve complex, multi-step word problems.

Key Concepts: Multiplying up to 4-digit by 2-digit numbers • Long division with remainders • Measurement conversions • Multi-step problem solving

Module 4

Foundations for Fraction Operations

Students take fraction understanding to a new level — adding, subtracting, and multiplying fractions. They explore equivalent fractions, compare fractions with different denominators, and work with mixed numbers. They add and subtract fractions and mixed numbers with like and unlike units, and solve word problems involving multiplication of fractions by whole numbers. Data from line plots connects fractions to real-world contexts.

Key Concepts: Generating equivalent fractions • Comparing fractions with unlike denominators • Adding and subtracting mixed numbers • Multiplying fractions by whole numbers

Module 5

Place Value Concepts for Decimal Fractions

Students are introduced to decimal numbers as an extension of the place value system. They explore tenths and hundredths as fractions and in decimal form, represent decimals on number lines and place value charts, compare and order decimal numbers, and add decimals with tenths and hundredths. This module lays the groundwork for all decimal operations in Grade 5.

Key Concepts: Tenths and hundredths as fractions and decimals • Representing and comparing decimals • Adding tenths and hundredths • Connecting decimals to fractions

Module 6

Angle Measurements and Plane Figures

Students explore the geometry of lines, angles, and two-dimensional figures. They identify and draw points, lines, rays, and angles — including right, acute, obtuse, and straight angles — and learn to measure angles with a protractor. Students investigate perpendicular and parallel lines, find unknown angle measures, classify triangles and quadrilaterals, and explore lines of symmetry.

Key Concepts: Identifying and measuring angles • Using a protractor • Classifying triangles and quadrilaterals • Symmetry in plane figures

Grade 5 Mathematics

A Story of Fractions Are Numbers

Grade 5 completes students' work with the four operations across whole numbers, fractions, and decimals — bringing these three number systems together in one powerful year. Students multiply and divide fractions, extend decimal operations through the thousandths, and explore volume as a new three-dimensional concept. A focus on the coordinate plane connects number patterns to visual representations, preparing students for the algebraic thinking ahead in Grade 6.

What Your Child Will Learn This Year — Six Modules

Module 1

Place Value Concepts for Multiplication and Division with Whole Numbers

Students solidify their understanding of multi-digit multiplication and division, applying the standard algorithm to large numbers. They explore powers of 10, convert metric measurements, write and interpret numerical expressions (including parentheses), and solve complex, multi-step word problems. This module sets a strong foundation for the decimal and fraction work that follows.

Key Concepts: Powers of 10 and exponents • Multi-digit multiplication and division • Writing and interpreting expressions • Multi-step problem solving

Module 2

Addition and Subtraction with Fractions

Students master adding and subtracting fractions — including fractions with unlike denominators and mixed numbers. They interpret fractions as division, find equivalent fractions to create common units, and solve real-world problems. Line plots with fractional measurements help students connect fraction work to data analysis.

Key Concepts: Fractions as division • Adding and subtracting unlike fractions • Adding and subtracting mixed numbers • Line plots with fractional data

Module 3

Multiplication and Division with Fractions

Students extend multiplication and division to include fractions — one of the most important conceptual leaps of the elementary years. They multiply whole numbers by fractions, fractions by fractions, and explore division with unit fractions and whole numbers. They reason about the size of products and quotients and solve multi-step problems involving all fraction operations.

Key Concepts: Multiplying whole numbers by fractions • Multiplying fractions by fractions • Dividing with unit fractions • Multi-step fraction problem solving

Module 4

Place Value Concepts for Decimal Operations

Students apply place value understanding to decimal numbers all the way to the thousandths place. They add, subtract, multiply, and divide decimal numbers — including decimal by decimal — using place value reasoning and standard algorithms. They also convert metric and customary measurements involving decimals, and write and evaluate numerical expressions with decimals.

Key Concepts: Decimals to the thousandths • All four operations with decimals • Comparing and rounding decimals • Measurement conversions with decimals

Module 5

Addition and Multiplication with Area and Volume

Students explore two- and three-dimensional geometry. They classify quadrilaterals in a hierarchy based on properties, find areas of rectangles with fractional side lengths, and study volume — a brand-new concept. Students pack and build right rectangular prisms with unit cubes, apply volume formulas, and solve real-world problems involving area, perimeter, and volume.

Key Concepts: Classifying quadrilaterals by properties • Area with fractional side lengths • Understanding volume with unit cubes • Volume formulas and problem solving

Module 6

Foundations to Geometry in the Coordinate Plane

In this capstone module, students discover the coordinate plane as a powerful mathematical tool. They plot points, describe distances and directions, generate and graph number patterns, and connect patterns to real-world situations. Students graph and classify figures in the coordinate plane, draw lines of symmetry, and solve problems involving perimeter and area — all within the coordinate system.

Key Concepts: Plotting points in the coordinate plane • Generating and graphing number patterns • Classifying figures using coordinates • Real-world problems in the coordinate plane

Grade 6 Mathematics

A Story of Ratios and Rates

Grade 6 marks a pivotal transition from arithmetic to algebraic thinking. Students encounter entirely new concepts — ratios, rates, and percents — alongside rational numbers and their first formal work with expressions and equations. Geometry grows more sophisticated, with area formulas for triangles and other polygons, surface area, and volume. A rich focus on statistics teaches students to ask questions, collect data, and interpret results — skills they will use throughout their lives.

What Your Child Will Learn This Year — Six Modules

Module 1

Ratios, Rates, and Percents

Students are introduced to the concept of a ratio — a comparison of two quantities. They explore equivalent ratios using tape diagrams, ratio tables, and double number lines, and graph ratio relationships in the coordinate plane. They then develop unit rates, explore rate problems in real-world contexts, and connect ratios to percents — building the proportional reasoning that is essential for all future math.

Key Concepts: Ratios and equivalent ratios • Unit rates and rate problems • Representing ratios graphically • Percents as special ratios

Module 2

Operations with Fractions and Multi-Digit Numbers

Students complete their work with fraction operations, focusing on division of fractions by fractions — a concept that ties together years of fraction understanding. They also revisit factors, multiples, and divisibility, and work with multi-digit numbers using the standard algorithms. These skills support the algebraic and ratio reasoning developed throughout the year.

Key Concepts: Dividing fractions by fractions • Greatest common factor and least common multiple • Multi-digit number operations • Applying fraction division in context

Module 3

Rational Numbers

Students extend the number line to include negative numbers — integers and rational numbers. They plot positive and negative numbers on horizontal and vertical number lines, compare and order rational numbers, and explore absolute value. Students also work with the coordinate plane across all four quadrants, connecting rational numbers to real-world situations like temperature, elevation, and finance.

Key Concepts: Positive and negative numbers • Integers and rational numbers on the number line • Comparing, ordering, and absolute value • The four-quadrant coordinate plane

Module 4

Expressions and One-Step Equations

Students make a major shift toward algebraic thinking. They write and evaluate numerical and algebraic expressions, use variables to represent unknown quantities, and explore the order of operations. They write and solve one-step equations and inequalities using reasoning and inverse operations, and apply these skills to real-world problems — including geometry formulas for area and perimeter.

Key Concepts: Writing and evaluating expressions with variables • Order of operations • Solving one-step equations • Applying algebra to geometry formulas

Module 5

Area, Surface Area, and Volume

Students tackle more complex geometric figures. They derive and apply formulas for the area of parallelograms, triangles, and other polygons by composing and decomposing shapes. They then explore three-dimensional figures — identifying nets (flat unfolded versions of 3D shapes) and using them to find surface area. Volume of rectangular prisms with fractional side lengths connects geometry to fraction multiplication.

Key Concepts: Area of triangles and polygons • Nets and surface area of 3D figures • Volume with fractional dimensions • Applying formulas in context

Module 6

Statistics

In this final module, students are introduced to formal statistical reasoning. They learn to pose statistical questions, collect data, and display it using dot plots, histograms, and box plots. They explore measures of center (mean, median, mode) and measures of spread (range, mean absolute deviation), and interpret these in context. Students develop the ability to describe, summarize, and draw conclusions from data distributions.

Key Concepts: Asking statistical questions • Dot plots, histograms, and box plots • Measures of center: mean, median, mode • Describing data distributions