



Paxon Hollow Middle School

Math Curriculum Sequence

	Math 6	Enriched Math 6
	<i>The Math 6 curriculum is aligned with the Pennsylvania Common Core Standards for 6th grade mathematics, ensuring a rigorous and comprehensive approach to key mathematical concepts. The units below outline the essential areas of focus for the year, providing a structured progression of skills and problem-solving strategies. Math in Focus serves as our primary instructional resource, supporting student learning through a strong emphasis on conceptual understanding, procedural fluency, and real-world application.</i> Overview: • The Number System: factors, multiples, prime numbers, fractions, decimals, percents, number properties, number lines, positive and negative numbers, order of operations • Ratios and Proportional Relationships: ratios, equivalent ratios, proportions, unit rates, percent problems, real-world applications • Expressions and Equations: variables, writing and evaluating expressions, combining like terms, solving equations and inequalities, graphing linear equations • Geometry: shapes, area, perimeter, volume, surface area, coordinate geometry • Statistics and Probability: data collection, graphs, mean, median, mode, range, probability, real-world applications	<i>The Enriched Math 6 curriculum is aligned with the Pennsylvania Common Core Standards for 6th grade mathematics but is designed for students ready to engage in a faster-paced, more rigorous exploration of mathematical concepts. This course emphasizes deeper problem-solving, advanced reasoning, and extended applications of the core standards. Students will engage with more complex problem sets, apply mathematical thinking to real-world scenarios, and develop a stronger conceptual foundation for subsequent enriched courses. Math in Focus serves as the primary instructional resource, supplemented with enrichment tasks and challenges that foster higher-order thinking.</i> Overview: • The Number System: deeper exploration of number theory, prime factorization, rational number operations, multi-step fraction and decimal applications, integer operations, and real-world problem-solving • Ratios and Proportional Relationships: advanced ratio reasoning, multi-step proportional problem-solving, unit rate applications, percent increase and decrease, and conceptual modeling of proportional relationships • Expressions and Equations: complex algebraic expressions, expanding and factoring expressions, multi-step equations and inequalities, and graphing relationships between variables • Geometry: extended applications of area, surface area, and volume, coordinate plane transformations, and real-world problem-solving with geometric concepts • Statistics and Probability: interpreting and analyzing data sets, applying probability concepts to real-world contexts, exploring variability, and making statistical predictions

Grade 7	Math 7 <i>The Math 7 curriculum is aligned with the Pennsylvania Common Core Standards for 7th grade mathematics, ensuring a rigorous and comprehensive approach to key mathematical concepts. The units below outline the essential areas of focus for the year, providing a structured progression of skills and problem-solving strategies. Math in Focus serves as our primary instructional resource, supporting student learning through a strong emphasis on conceptual understanding, procedural fluency, and real-world application.</i> Overview: • The Number System: rational number operations, integer operations, absolute value, decimal and fraction conversions, real-world problem-solving • Ratios and Proportional Relationships: unit rates, proportional reasoning, percent problems, percent increase and decrease, multi-step ratio problems • Expressions and Equations: simplifying expressions, solving multi-step equations and inequalities, writing and interpreting algebraic expressions, real-world applications • Geometry: angle relationships, scale drawings, circles, area, surface area, volume, two- and three-dimensional problem-solving • Statistics and Probability: data distributions, measures of center and variability, probability models, compound events, real-world data analysis	Enriched Math 7 <i>The Enriched Math 7 curriculum is an accelerated course designed for students who demonstrate strong mathematical understanding and readiness for advanced concepts. This course covers both 7th and 8th grade Pennsylvania Common Core Standards, preparing students for Algebra 1 in 8th grade. With a faster pace and deeper exploration of mathematical reasoning, students will engage in challenging problem-solving, algebraic thinking, and real-world applications. Math in Focus serves as the primary instructional resource, supplemented with enrichment tasks, open-ended investigations, and advanced mathematical discourse.</i> Overview: • The Number System: rational and irrational numbers, real number system, significant digits, integer operations, fraction and decimal operations • Expressions and Equations: simplifying expressions, factoring, solving multi-step equations and inequalities, modeling with algebraic reasoning • Ratios, Proportions, and Percents: proportional reasoning, percent increase and decrease, applications in real-world contexts • Linear Equations and Functions: slope, slope-intercept form, graphing, writing and solving linear equations, comparing functions • Geometry: angle relationships, scale drawings, transformations, geometric constructions, circles, area, surface area, volume • Statistics and Probability: random sampling, inferences about populations, compound probability, probability models • Exponents and Scientific Notation: properties of exponents, operations with scientific notation • Pythagorean Theorem: understanding and applying the theorem to solve real-world problems
	Math 8 <i>The Math 8 curriculum is aligned with the Pennsylvania Common Core Standards for 8th grade mathematics, ensuring a rigorous and comprehensive approach to key mathematical concepts. The units below outline the essential areas of focus for the year, providing a structured progression of skills and problem-solving strategies. Math in Focus serves as the primary instructional resource, supporting student learning through a strong emphasis on conceptual understanding, procedural fluency, and real-world application.</i>	Algebra 1 <i>The Algebra 1 curriculum is aligned with the Pennsylvania Common Core Standards for Algebra 1 and mirrors our high school Algebra 1 course. This course prepares students for the Keystone Algebra 1 assessment. The course provides a strong foundation in algebraic concepts, emphasizing problem-solving, mathematical reasoning, and real-world applications. Students will develop fluency in manipulating expressions, solving equations, analyzing functions, and interpreting data.</i>
Grade 8		

	Overview: • The Number System: rational and irrational numbers, approximating non-perfect square roots, operations with exponents, scientific notation • Expressions and Equations: solving multi-step equations, equations with variables on both sides, systems of equations, applications of equations in real-world contexts • Functions: understanding functions, function notation, comparing linear and nonlinear functions, interpreting and graphing functions • Geometry: transformations (translations, reflections, rotations, dilations), angle relationships, Pythagorean Theorem, distance between points, congruence and similarity • Statistics and Probability: analyzing bivariate data, scatter plots, line of best fit, two-way tables	Overview: • Solving Linear Equations: properties of real numbers, solving multi-step equations, justifying steps in the equation-solving process, interpreting solutions in context • Solving Linear Inequalities: writing, solving, and graphing linear inequalities, compound inequalities, interpreting solutions in real-world scenarios • Graphing Linear Functions: identifying functions, analyzing domain and range, graphing linear equations, interpreting slope as a rate of change • Writing Linear Functions: writing equations from graphs, points, and tables, understanding different forms of linear equations, modeling real-world relationships • Solving Systems of Equations and Inequalities: solving systems using graphing, substitution, and elimination, interpreting solutions in context • Polynomials and Factoring: operations with polynomials, factoring trinomials and special products, simplifying algebraic expressions • Data Analysis and Probability: interpreting and analyzing data, measures of central tendency, scatter plots, lines of best fit, probability of compound events
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