



Mathematics

Fifth Grade and Sixth Grade (Fifth Grade High Ability)

The Indiana Academic Standards define what students should know, understand, and be able to do at grade level beginning in kindergarten and progressing through grade twelve. These standards serve as the foundation to our curriculum in Noblesville Schools but are not a curriculum on their own. The Indiana Academic Standards are supported through grade-level curriculum maps and a selection of curriculum materials to support these maps. These curriculum maps and materials are aligned to the Indiana Academic standards while also meeting the needs of all learners. Therefore, the Noblesville Schools' curriculum is constantly undergoing periodic and systematic analysis and revision.

- PS.1: Make sense of problems and persevere in solving them.
- PS.2: Reason abstractly and quantitatively.
- PS.3: Construct viable arguments and critique the reasoning of others.
- PS.4: Model with mathematics.
- PS.5: Use appropriate tools strategically.
- PS.6: Attend to precision.
- PS.7: Look for and make use of structure.
- PS.8: Look for and express regularity in repeated reasoning.

In fifth grade, instructional time is focused on the key components of the process standards for mathematics, which are embedded throughout core instruction in a balanced math structure. The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills. The fifth grade and *sixth grade (*grade 5 high ability) Indiana Academic Standards for Mathematics serve as the foundation of our curriculum and encompass key instructional areas of number sense, computation and algebraic thinking, geometry, measurement, and data analysis. These kindergarten standards are supported in Noblesville Schools through curriculum materials for mathematics instruction, including *Indiana Reveal Math by McGraw Hill*.



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Indiana Reveal Math

Indiana Reveal Math by McGraw Hill serves as the primary core curriculum material for all fifth grade learners, including high ability, and provides alignment with the Indiana Academic Standards for Mathematics.

Table 1: Fifth Grade Indiana Reveal Math

Mathematics Unit Pacing Varies By Unit	Mathematics Unit Learning Outcomes Learners will...	Mathematics Unit Focus Question
Unit 1: Math Is...	Understand that math is everywhere as part of our daily lives. Building proficiency with habits of mind that support mathematical thinking, including the practice and process standards. Build an understanding of the norms that foster a productive math environment.	What does it mean to do math?
Unit 2: Volume	Explore measurable attributes of different figures and unpack 3-dimensional shapes through the measurable attribute of volume. Generalize methods for calculating volume of rectangular prisms. Understand that volume is additive and apply volume formulas to solve real-world problems.	How can I find the volume of rectangular prisms?
Unit 3: Place Value and Number Relationships	Connect current learning to established understanding. Understand that the value of a digit in a decimal depends on its place in the number.	How can I extend my knowledge of place value to decimals?



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Mathematics Unit Pacing Varies By Unit	Mathematics Unit Learning Outcomes Learners will...	Mathematics Unit Focus Question
Unit 4: Add and Subtract Decimals	Explore multiple representations to have opportunity to visualize and internalize how decimals behave during addition and subtraction. Estimate sums and differences by using rounded numbers and compatible numbers. Find exact sums and differences using multiple representations.	How do I add and subtract decimals?
Unit 5: Multiply Multi-Digit Whole Numbers	Build upon previous understandings of place-value relationships to concrete understandings of multi-digit multiplication.	How can I multiply multi-digit numbers?
Unit 6: Multiply Decimals	Extend on understanding of multiplying whole numbers and fractions to multiplying decimals.	What strategies can I use to multiply decimals?
Unit 7: Divide Whole Numbers	Apply understanding of dividing multi-digit whole numbers to solve problems in real-world contexts. Discover that place value and division strategies work the same way with multi-digit whole number divisors as they do with division by one-digit divisors.	How can I divide multi-digit numbers?
Unit 8: Divide Decimals	Understand that dividing by a positive decimal less than 1 is not always intuitive through various operations. Apply various strategies for division of decimals	What strategies can I use to divide decimals?



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Mathematics Unit Pacing Varies By Unit	Mathematics Unit Learning Outcomes Learners will...	Mathematics Unit Focus Question
Unit 9: Add and Subtract Fractions	Estimating sums and differences of fractions. Extend work done in previous grade levels with fractions with a variety of strategies and topics.	How do I add and subtract fractions?
Unit 10: Multiply Fractions	Gain a generalized understanding of multiplication with whole numbers, fractions, and mixed numbers in any combination. Practice estimating to check the reasonableness of answers using a variety of tools. Understand the concept of rescaling.	How can I multiply fractions?
Unit 11: Divide Fractions	Explore situations involving equal sharing division and equal grouping division. Use models to help determine quotients. Use different representations when finding the quotient of a unit fraction divided by whole number equal-sharing situations.	How can I divide fractions?
Unit 12: Measurement and Data	Create line plots for a variety of data sets and solve problems based on the data using operations appropriate for the grade.	How can I convert measurement units and represent measurement data?
Unit 13: Geometry	Look for structure as they classify two-dimensional figures based on hierarchy.	How can I use the coordinate plane to identify and classify 2-dimensional figures?
Unit 14: Algebraic Thinking	Generate and extend numerical patterns; identify relationships between sets of corresponding terms.	How can I begin to think about algebra?



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Table 2: Sixth Grade (Fifth Grade High Ability) Indiana Reveal, Course I Math

Mathematics Unit/Module Pacing Varies By Unit	Mathematics Unit Learning Outcomes Learners will...	Mathematics Unit Focus Question
Module 1: Ratios and Rates	Use ratio and rate reasoning to solve real-world and mathematical problems.	How can you describe how two quantities are related?
Module 2: Fractions, Decimals, and Percents	Understand the relationship between fractions, decimals, and percents, and apply that relationship to finding the percent of a number.	How can you use fractions, decimals, and percents to solve everyday problems?
Module 3: Compute with Multi-Digit Numbers and Fractions	Compute with multi-digit numbers and fractions.	How are operations with fractions and decimals related to operations with whole numbers?
Module 4: Integers, Rational Numbers, and the Coordinate Plane	Graph integers and rational numbers on number lines and on the coordinate plane.	How are integers and rational numbers related to the coordinate plane?
Module 5: Numerical and Algebraic Expressions	Write and evaluate numerical and algebraic expressions.	How can we communicate algebraic relationships with mathematical symbols?
Module 6: Equations and Inequalities	Write and solve one-step equations and inequalities.	How are the solutions of equations and inequalities different?



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Mathematics Unit/Module Pacing Varies By Unit	Mathematics Unit Learning Outcomes Learners will...	Mathematics Unit Focus Question
Module 7: Relationships Between Two Variables	Express relationships between two variables using tables, equations, and graphs.	What are the ways in which a relationship between two variables can be displayed?
Module 8: Area	Find areas of parallelograms, triangles, trapezoids, regular polygons, and polygons on the coordinate plane.	How are the areas of triangles and rectangles used to find the areas of other polygons?
Module 9: Volume and Surface Area	Find volume of rectangular prisms and surface area of triangular and rectangular prisms.	How can you describe the size of a three-dimensional shape?
Module 10: Statistical Measures and Displays	Find and use statistical measures.	Why is data collected and analyzed and how can it be displayed?