

Mathematics

Fourth Grade



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 fourth 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 fourth grade 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 fourth grade learners and provides alignment with the Indiana Academic Standards for Mathematics.

Table 1: Fourth 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: Generalize Place-Value Structure | Read and write up to 6-digit numbers in standard, expanded, and word forms. Compare up to two 6-digit numbers. Round multi-digit to an appropriate place based on the purpose of the estimated value. | How can I use place value to work with multi-digit numbers? |
| Unit 3: Addition and Subtraction Strategies and Algorithms | Become fluent in adding and subtracting using strategies such as partial sums, adjusting, standard algorithm, and decomposition. | How can I add and subtract with strategies and algorithms? |



Mathematics

Fourth Grade

| Mathematics Unit Pacing Varies By Unit | Mathematics Unit Learning Outcomes Learners will... | Mathematics Unit Focus Question |
|---|--|--|
| Unit 4: Multiplication as Comparison | Develop understanding of multiplicative comparisons. Further understand various representations of multiplicative comparison can be used for division due to the relationships between multiplication and division. | How can I compare using multiplication? |
| Unit 5: Numbers and Number Patterns | Find factor pairs and multiples and understand the relationship between factors and multiples. Use understanding of factor pairs to identify prime and composite numbers. Use a pattern rule to describe and extend a number or shape pattern. Identify features of the pattern not explicitly stated in the rule. | How can I use patterns to describe the relationship between numbers? |
| Unit 6: Multiplication Strategies with Multi-Digit Numbers | Apply decomposition and the Distributive Property of Multiplication to create area models and find partial products used to calculate a product. Use an understanding of place value, properties of operations, and decomposition factors to multiply factors of 10. Solve multi-step word problems involving multiplication of multi-digit factors. | How can I multiply multi-digit numbers? |
| Unit 7: Division Strategies with Multi-Digit Dividends and 1-Digit Divisors | Divide multiples of 10 by 1-digit divisors. Estimate quotients to divide multi-digit dividends by 1-digit divisors. Interpret remainders in the context of a problem. Solve multi-step word problems involving division. | How can I divide multi-digit numbers? |



Mathematics

Fourth Grade

| Mathematics Unit Pacing Varies By Unit | Mathematics Unit Learning Outcomes Learners will... | Mathematics Unit Focus Question |
|---|---|--|
| Unit 8: Fraction Equivalence | Extend understanding of fraction equivalence and comparison strategies to include topics such as recognizing and generating equivalent fractions and comparing fractions. | How can I use equivalent fractions to help me compare fractions? |
| Unit 9: Addition and Subtraction Meanings and Strategies with Fractions | Extend understanding of representing fractions, composing, and decomposing numbers to adding and subtracting fractions. | How can I add and subtract fractions with like denominators? |
| Unit 10: Addition and Subtraction Strategies with Mixed Numbers | Become familiar with mixed numbers. Add and subtract mixed numbers with like denominators. | How can I add and subtract mixed numbers with like denominators? |
| Unit 11: Multiply Fractions by Whole Numbers | Extend opportunities to add and subtract fractions and compare fractions through topics such as multiplying a unit fraction by a whole number, multiplying a fraction by a whole number, understand multiplication of a fraction by a whole number, multiplying a mixed number by a whole number, and solving problems involving fractions and mixed numbers. | How can I multiply a fraction by a whole number? |



Mathematics

Fourth Grade

| Mathematics Unit Pacing Varies By Unit | Mathematics Unit Learning Outcomes Learners will... | Mathematics Unit Focus Question |
|---|--|---|
| Unit 12: Decimal Fractions | Use fraction models to represent fractions with denominators of 10 and 100. Use place-value reasoning to understand decimal notation. Use representations to compare two decimals. Use equivalent fractions to add decimals with denominators of 10 and 100. Solve word problems involving decimal fractions using dollars, dimes, and pennies. | How can I represent and compare decimal fractions? |
| Unit 13: Units of Measurement and Data | Work with relative sizes of units and perform conversions within the metric system. Learn about customary units by converting units of time. Extend knowledge of area, perimeter, and line plots that show fractional measurements. | How can I use and compare units of measurement? |
| Unit 14: Geometric Figures | Identify and draw points, lines, line segments, and rays. Classify angles as right, acute, or obtuse. Use a protractor to measure angles and draw angles of a specified measure. Apply angle concepts to recognize parallel and perpendicular lines. Use equations to find and solve problems with unknown angle measures. Use properties of shapes to classify polygons. Apply lines of symmetry to 2-dimensional shapes. | How can I solve problems involving geometric figures? |