Math 7 (Accelerated)

Last updated August 1, 2025

Overview: Grade 7 Accelerated Mathematics is designed for students who have demonstrated readiness for more rigorous and accelerated learning. This course includes all Grade 7 standards, with additional Grade 8 content thoughtfully integrated to ensure students are well-prepared for Algebra I in Grade 8. Emphasis is placed on deepening understanding of proportional reasoning, rational number operations, and problem-solving with linear equations, expressions, and inequalities.

Students develop fluency with integer and rational number operations and are introduced to concepts such as irrational numbers, functions, systems of equations, and transformations. Geometry, statistics, and probability concepts are extended to incorporate advanced reasoning and application. This course supports students in building a solid foundation in algebraic thinking and abstract reasoning, equipping them to succeed in high school mathematics and beyond. The study of mathematics is grounded in Catholic values such as truth, integrity, and the responsible stewardship of knowledge.

The clusters below are benchmarked against the Maryland College & Career Ready Standards & Frameworks and include select Grade 8 standards. Clusters marked (*) below are the most critical areas for this course, which are the foundational content domains students must master to ensure readiness for Algebra I.

Ratios and Proportional Relationships
- Analyze proportional relationships and use them to solve real-world and mathematical problems.*
- Understand and apply concepts of slope and unit rate in context of linear relationships.*

The Number System
- Apply and extend operations to all rational numbers.*
- Explore irrational numbers and their placement on the number line.*

Expressions and Equations
- Use properties of operations to generate equivalent expressions.
- Solve multi-step real-life and mathematical problems using expressions, equations, and inequalities.*
- Understand the connections between proportional relationships, lines, and linear equations.*

Functions
- Define, evaluate, and compare functions.*
- Use functions to model relationships between quantities.*

Geometry
- Solve problems involving angle relationships, area, surface area, and volume.*
- Understand congruence and similarity through transformations.
- Apply the Pythagorean Theorem in problem-solving contexts.

Statistics and Probability
- Use random sampling and draw inferences about populations.
- Compare two populations using measures of center and variability.
- Investigate chance processes and develop probability models.

Mathematical Practices: The nine mathematical practices, below, describe what mathematicians do. However, they also describe important skills outside the math classroom, both in other subject areas and the real world. Students at all levels will develop these skills gradually throughout their time in Archdiocesan schools in grade-appropriate ways. This work should be nearly done every day and for nearly every topic.

- Make sense of problems and persevere in solving them.
- Reason abstractly and quantitatively.
- Construct viable arguments and critique the reasoning of others.
- Model with mathematics.
- Use appropriate tools strategically.

- Attend to precision.
- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.
- Practice mathematics with a Catholic conscience.