

9th Grade Math Curriculum

Our 9th Grade Math curriculum is designed to build on the foundational skills learned in middle school and equip students with the tools they need for success in high school Algebra and Geometry. Students develop confidence as they explore new topics through hands-on practice, creative projects, and problem-solving strategies.

A ninth-grade math curriculum is usually a course that introduces students to the more rigorous approach of high school classes. The following information will explain the steps you should take to meet your child's 9th grade math goals.

What Math Should a 9th Grader Already Know?

This year's curriculum focuses on deepening students' understanding of key concepts in Algebra and Geometry while strengthening their mathematical reasoning. Students will learn to solve systems of linear equations, work with polynomials, and explore quadratic functions. In Geometry, topics include surface area, volume, trigonometry, and geometric proofs.

Before starting this course, students should be comfortable with:

- Solving single-variable linear equations and inequalities
- Performing operations with positive and negative rational numbers
- Plotting on a coordinate plane and interpreting graphs
- Working with ratios, proportions, and percentages
- Understanding basic probability and statistics
- Being comfortable with quadrilaterals, polygons, triangles, and angles
- Applying order of operations and evaluating expressions

What Do 9th Graders Learn in Math?

The major math concepts covered for a ninth-grade curriculum are:

Algebra:

- Systems of Linear Equations
- Polynomials
- Quadratics
- Radical Expressions

Geometry:

- Surface Area & Volume
- Right Angle Geometry
- Number Sequences
- Geometric Proofs

A YEAR AT A GLANCE Be sure to include a bit of wiggle room in case your student needs extra time with a math topic. The sequence below is our recommendation for a full year course:

Grade 9: Algebra #5-7, Geometry #7-10, Review

September Algebra #5 <i>Systems of Linear Equations</i>	October Algebra #6 <i>Polynomials</i>	November Algebra #7: <i>Quadratics</i>	December Two weeks of extra practice if needed.
January Geometry #7 <i>Surface Area</i>	February Geometry #8 <i>Volume</i>	March Geometry #9 <i>Right Angle Geometry</i>	April Geometry #10: <i>Number Sequences & Geometric Proofs</i>
May Algebra Labs #4-7 Geometry Labs #5-8 Full Review (Algebra 1 & Geometry)	June <i>Math Camp</i>	July	August Algebra & Geometry Review <i>10-Session Workshop</i>

Special Note Regarding *Soft Approach* Middle School Math

The *Soft Approach* Math program allows students to take three years instead of two to cover their math concepts in pre-Algebra, Algebra 1, Geometry, Probability, & Statistics. Students will study the first half of both Algebra 1 and Geometry during their two years of middle school, which will provide a solid foundation and help the student be more prepared for the full challenges of these subjects in high school.

For 9th Grade, students will cover the second half of both Algebra 1 and Geometry in a single year. After this three-year cycle, students are ready for Algebra 2.

9th Grade Math Lesson Plan – 35 Weeks

Fall Term (Sept – Dec)

- Week 1: [Graphing & Elimination](#)
- Week 2: [Substitution Method](#)
- Week 3: [Solving Systems of Inequalities, Slope-Intercept Review, & Word Problems](#)
- Week 4: [Proportional & Non-Proportional Relationships, Direct Variation](#)
- Week 5: [Introducing Polynomials](#)
- Week 6: [Factoring Polynomials](#)
- Week 7: [Difference of Squares, Sum of Cubes, Trinomials, Four Terms, & Mixed Factoring](#)
- Week 8: [Adding & Subtracting Polynomials; Common Denominators](#)
- Week 9: [Least Common Denominators; Square Roots & Radicals](#)
- Week 10: [Quadratics Formula](#)
- Week 11: [Graphing Quadratic Equations & Word Problems](#)
- Week 12: [Algebra 1 Review](#)

Winter/Spring Term (Jan – May)

- Week 13: [Surface Area of Prisms*](#)
- Week 14: [Surface Area of Pyramids](#)
- Week 15: [Surface Area Applications & Review](#)
- Week 16: [Volume of Rectangular Prisms & Cross Sections*](#)
- Week 17: [Volume of Triangular Prisms](#)
- Week 18: [Volume of Cylinders & Cones; Composite Figures](#)
- Week 19: [Volume Applications & Review](#)
- Week 20: [Angles, Right Triangles & the Pythagorean Theorem](#)
- Week 21: [Trigonometric Functions: Sine, Cosine](#)
- Week 22: [Trigonometric Functions: Sine, Cosine, Tangent](#)
- Week 23: [Trigonometry Applications](#)
- Week 24: [Arithmetic Number Sequences](#)
- Week 25: [Geometric Number Sequences](#)
- Week 26: [Geometric Proofs](#)
- Week 27: [Algebra Lab #4](#)
- Week 28: [Algebra Lab #5](#)
- Week 29: [Algebra Lab #6](#)
- Week 30: [Algebra Lab #7](#)
- Week 31: [Geometry Lab #5](#)
- Week 32: [Geometry Lab #6](#)
- Week 33: [Geometry Labs #7 & 8](#)
- Weeks 34-35: [Full Algebra 1 & Geometry Review](#)

Please bring these materials with you to every Geometry Lesson with a teacher:

- Math journal / notebook
- Pencils and eraser
- Protractor
- Compass ([one with a set screw adjustment](#))
- Ruler (inches and cm)
- Calculator

***Geometry Build Challenges!**

In addition to math lessons with teachers and working on homework assignments, students also explore how geometry is used in the science and engineering fields by designing and building several Geometry Challenge Projects!

Your child will need materials to participate in all the hands-on fun! [Click for materials list.](#)