

# Math

## Math Courses

### Advanced Algebra 1

This course is designed for those students who have completed the Middle School Extended Mathematics curriculum prior to 8th grade or completed 8th grade Pre-Algebra with a "B" or better. Advanced Algebra 1 students are expected to master all the Algebra 1 objectives as well as some of the Algebra 2 objectives. Students taking this course are expected to continue their studies with an Advanced Geometry course followed by Advanced Algebra 2. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

**Credits** 1

**Grades**

7, 8, 9

**Course Designation**

Weighted (0.5W)

**Schools**

Colgan High School

Freedom High School

Hylton High School

Potomac High School

Woodbridge High School

**Prerequisites**

Math 7 Extended **or** Math 8 (Pre-Algebra)

### Advanced Algebra 2

Advanced Algebra 2 is an accelerated course that integrates select Pre-Calculus concepts to prepare students for Pre-Calculus for BC. Students are expected to master Algebraic mechanics and understand the underlying theory and apply the concepts to real-world situations. Examples of extended topics include graphing, solving equations, and solving practical problems with exponential, logarithmic, rational, composite, and inverse functions, conic sections, and sum of finite convergent series. The study of the trigonometric circular functions will continue from Advanced Geometry and prepare students for further study of this topic in the Pre-Calculus courses for both AP Calculus AB and AP Calculus BC. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements. Algebra 2 is required for the Advanced Studies Diploma.

**Credits** 1

**Grades**

9, 10, 11

**Course Designation**

Weighted (0.5W)

**Schools**

Battlefield High School

Colgan High School

Forest Park High School

Gainesville High School

Hylton High School

Patriot High School

Woodbridge High School

**Requirements**

Teacher recommendation and completion of bridge coursework

**Prerequisites**

[Advanced Algebra 1](#) **or** [Algebra 1](#) (with teacher recommendation and completion of bridge coursework)

## Advanced Geometry

This course includes emphasis on two- and three-dimensional reasoning skills, coordinate and transformational geometry, and the use of geometric models to solve problems. In addition, students begin the study of the Unit Circle. Students will use a variety of applications and problem-solving techniques including Algebraic skills. The intent of this course is to provide students with many opportunities to explore, conjecture, reason logically, formulate and solve problems, and communicate mathematically. Graphing utilities, computers, dynamic geometry software, and other appropriate technology tools will be used to assist in teaching and learning. Students taking this course are expected to continue their studies with an Advanced Algebra II course. This course has an associated Standards of Learning (SOL) test. Students will participate in these tests only when they have not yet earned sufficient credit for graduation and/or satisfied federal testing requirements.

**Credits** 1

**Grades**

8, 9, 10

**Course Designation**

Weighted (0.5W)

**Schools**

Battlefield High School

Colgan High School

Forest Park High School

Freedom High School

Gainesville High School

Hylton High School

Osborn Park High School

Patriot High School

Woodbridge High School

**Prerequisites**

[Advanced Algebra 1](#) or [Algebra 1](#) (with teacher recommendation)

## Pre-Calculus with Trigonometry for AB

Pre-Calculus with Trigonometry for AB is a one year preparatory course for AP Calculus AB. The course content is comprised of the Algebra of real numbers and complex numbers, polynomial, piecewise, step, exponential, and logarithmic functions, applications of composition and inverse functions, limits and continuity of functions, matrices, discrete mathematics, and trigonometry, including the unit circle.

**Credits** 1

**Grades**

10, 11, 12

**Course Designation**

Virtual Prince William (VPW),

Weighted (1.0W)

**Schools**

Battlefield High School

Brentsville District High School

Colgan High School

Forest Park High School

Freedom High School

Gainesville High School

Hylton High School

Osborn Park High School

Potomac High School

Woodbridge High School

**Requirements**

Teacher recommendation

**Prerequisites**

[Algebra 2](#)

## Pre-Calculus with Trigonometry for BC

Pre-Calculus with Trigonometry for BC is a one year preparatory course for AP Calculus BC. The course content is comprised of the algebra of real numbers and complex numbers, limits and the continuity of functions, analytic geometry including vectors, polar and parametric equations, matrices, and trigonometry

**Credits** 1

**Grades**

10, 11, 12

**Course Designation**

Weighted (1.0W)

**Schools**

Colgan High School

Forest Park High School

Freedom High School

Hylton High School

Osbourn Park High School

Woodbridge High School

**Requirements**

Teacher recommendation

**Prerequisites**

[Advanced Algebra 2](#)