



## AP Precalculus Year at a Glance

### Scope and Sequence 2024-2025

**Please Note:** All standards in the state course description are designed to be learned by the end of the course. This guide represents a recommended timeline and sequence to be used voluntarily by teachers for planning purposes. Specific question regarding when content will be addressed in a specific course are best answered by the individual teacher.

### Course Resources

**Publisher Resource:**

Precalculus with Limits: A Graphing Approach, National Geographic Learning Cengage (Clever – use your active directory; does not support Internet Explorer)

**Supplemental Resources:**

[Khan Academy](#) (does not support Internet Explorer)

[AP Classroom](#)

**In AP Precalculus, instructional time will emphasize four areas:**

(1) Polynomial and Rational Functions; (2) Exponential and Logarithmic Functions; (3) Trigonometric and Polar Functions; and (4) Functions Involving Parameters, Vectors, and Matrices.

### Quarter 1 (August 12 – October 11)

#### Unit 1: Polynomial and Rational Functions

Students will develop an understanding of two key concepts through the exploration of polynomial and rational functions. The first concept is covariation (how output values change in tandem with changing input values) and the second concept that students will focus on is rate of change. The focus on rate of change includes average rate of change, rate of change at a point, and well as changing rates of change.



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### Quarter 2 (October 15 – December 20)

#### **Unit 2: Exponential and Logarithmic Functions**

Students will build an understanding of exponential and logarithmic functions. Students will communicate differences and similarities among arithmetic sequences, linear functions, geometric sequences, and exponential functions. They will explore how each of the four functions above would be represented in a graph, table, analytically, and through verbal representations. Students will use these multiple representations to develop an understanding of the composition of functions and the relationships between functions and their inverses.

### Quarter 3 (January 6 – March 13)

#### **Unit 3: Trigonometric and Polar Functions**

Students will explore trigonometric functions and their relation to the angles and arcs of a circle. Students will solve trigonometric equations and find equivalent trigonometric expressions. Students will build sinusoidal models with and without technology. Students will also learn about Polar functions and graphs.

### Quarter 4 (March 24 – May 30)

#### **Unit 3: Trigonometric and Polar Functions**

Students will explore trigonometric functions and their relation to the angles and arcs of a circle. Students will solve trigonometric equations and find equivalent trigonometric expressions. Students will build sinusoidal models with and without technology. Students will also learn about Polar functions and graphs.

#### **AP Exam Review**

Students will review all material covered in this AP course in preparation for the upcoming AP Exam.