

Grades 9, 10, 11, 12 - Learning Progressions

Adopted 2021

5-12 Learning Progressions

Numerical Reasoning

Numbers (rational numbers and irrational numbers)

1. All rational numbers [HS.LP5.1.1](#)
2. Operations with radicals [HS.LP5.1.2](#)
3. All numbers in The Real Number System [HS.LP5.1.3](#)

Computational Fluency

1. Operations with real numbers (rational and irrational) [HS.LP5.2.1](#)
2. Multiplication of irrational numbers [HS.LP5.2.2](#)

Comparisons

1. Rate of change (slope) [HS.LP5.3.1](#)
2. Intercept [HS.LP5.3.2](#)
3. Distributions of two or more data sets [HS.LP5.3.3](#)

Patterning & Algebraic Reasoning

Patterns

1. Arithmetic sequences [HS.LP6.1.1](#)
2. Geometric sequences [HS.LP6.1.2](#)

Expressions

1. Exponential expressions [HS.LP6.2.1](#)
2. Quadratic expressions [HS.LP6.2.2](#)
3. Expressions of varying degrees [HS.LP6.2.3](#)
4. Add, subtract, multiply single variable polynomials [HS.LP6.2.4](#)
5. Adding, Subtracting and Multiplying Polynomials [HS.LP6.2.5](#)
6. Factoring and expanding polynomials [HS.LP6.2.6](#)

Variable Equations & Inequalities

1. Exponential equations [HS.LP6.3.1](#)
2. Quadratic equations [HS.LP6.3.2](#)
3. Equations of parallel and perpendicular lines [HS.LP6.3.3](#)
4. Analyze and solve linear inequalities [HS.LP6.3.4](#)
5. Equations involving geometric measurement [HS.LP6.3.5](#)

Ratios & Rates

1. Convert units and rates given a conversion factor [HS.LP6.4.1](#)
2. Side ratios of similar triangles [HS.LP6.4.2](#)
3. Trigonometric ratios [HS.LP6.4.3](#)

Graphing

1. Linear functions with function notation [HS.LP6.6.1](#)
2. Exponential functions [HS.LP6.6.2](#)
3. Quadratic functions [HS.LP6.6.3](#)
4. Systems of linear inequalities [HS.LP6.6.4](#)
5. Equations of circles in standard form [HS.LP6.6.5](#)

Functional & Graphical Reasoning

Function Families

1. Linear functions with function notation [HS.LP7.1.1](#)
2. Parent graphs of function families [HS.LP7.1.2](#)
3. Exponential functions [HS.LP7.1.3](#)
4. Quadratic functions [HS.LP7.1.4](#)
5. Function notation to represent transformations [HS.LP7.1.5](#)

Geometric & Spatial Reasoning

Shapes & Properties

1. Develop and use precise definitions to prove theorems and solve geometric problems [HS.LP8.1.1](#)
2. Prove slope criteria for parallel and perpendicular lines [HS.LP8.1.2](#)
3. Transform polygons using rotations, reflections, dilations, and translations. [HS.LP8.1.3](#)
4. Congruence and transformations [HS.LP8.1.4](#)
5. Triangle congruence [HS.LP8.1.5](#)
6. Use congruence to prove relationships in geometric figures [HS.LP8.1.6](#)
7. Similarity and dilations [HS.LP8.1.7](#)
8. Similar triangles [HS.LP8.1.8](#)
9. Use similarity to prove relationships in geometric figures [HS.LP8.1.9](#)
10. Formal proofs & theorems about triangles [HS.LP8.1.10](#)
11. Trigonometric ratios (Sin, Cos, & Tan) [HS.LP8.1.11](#)

Geometric Measurement

1. Use distance formula, midpoint formula, and slope to calculate perimeter and area of triangles and quadrilaterals [HS.LP8.2.1](#)
2. Volumes of prisms, cones, cylinders, pyramids, and spheres [HS.LP8.2.2](#)
3. Approximate volumes of irregular objects [HS.LP8.2.3](#)
4. Approximate density of irregular objects [HS.LP8.2.4](#)

Probability Reasoning

Probability

1. Categorical data & two-way frequency tables [HS.LP9.1.1](#)
2. Interpret probabilities in context [HS.LP9.1.2](#)