Georgia Mathematics

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

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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

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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 trans-formations 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