



AAC K-12 Math Scope and Sequence

AAC's Math Curriculum uses the Common Core Math Standards as its base. Emphasis is placed on critical thinking and problem-solving skills, applying math to everyday life whenever possible. These 8 practices outline core processes and proficiencies that students of mathematics are taught to develop at all grade levels at AAC:

1. **Make Sense of Problems and Persevere in Solving Them.**
2. **Reason Abstractly and Quantitatively.**
3. **Construct Viable Arguments and Critique the Reasoning of Others.**
4. **Model with Mathematics.**
5. **Use Appropriate Tools Strategically.**
6. **Attend Precision.**
7. **Look for and Make use of Structure.**
8. **Look for and Express Regularity in Repeated Reasoning.**

G12 AP Pre- Calculus

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Polynomials and Rational Functions	Unit 2: Exponential and Logarithmic Functions	Unit 3: Trigonometric and Polar Functions	Unit 4: Parametrics, Vectors and Matrices
Learning Targets	1a. Analyze rates of change and relationships between quantities 1b. Analyze the structure and behavior of polynomial functions 1c. Analyze and interpret rational functions 1d. Connect equivalent representations and transformations of functions 1e. Build and apply polynomial and rational function models	2a. Compare patterns of change in sequences and functions 2b. Analyze and model exponential functions 2c. Understand composition and inverse relationships 2d. Develop and analyze logarithmic functions 2e. Solve and model with exponential and logarithmic relationships	3a. Represent and analyze periodic phenomena 3b. Graph, transform, and model trigonometric functions 3c. Solve and manipulate trigonometric relationships. 3d. Connect trigonometric and polar representations. 3e. Analyze change in polar functions	4a. Represent and analyze relationships using parametric functions 4b. Connect implicit, parametric, and conic representations 4c. Perform and interpret matrix operations and transformations 4d. Use matrices as functions and mathematical models

G12 Math - College Math, Applications & Mathematical Investigation

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Functions & Transformations Unit 2: Polynomial, Power & Rational Functions	Unit 3: Exponential, Logistic & Logarithmic Functions Unit 4: Systems of Equations	Unit 5: Trigonometric Functions & Modeling Unit 6: Sequences, Series & Discrete Mathematics.	Unit 7: Statistics, Financial Mathematics Investigation
Learning Targets	1a. Function Notation, Domain & Range 1b. Graphs & Transformations of Functions 1c. Composition of Functions 1d. Inverse Functions 2a. Polynomial & Power Functions 2b. Polynomial Zeros, Factors & Graphs 2c. Rational Functions & Asymptotes 2d. Radical Functions & Applications	3a. Exponential Functions & Growth/Decay 3b. Logarithmic Functions & Properties 3c. Exponential & Logarithmic Equations 3d. Applications & Mathematical Modelling 4a. Systems of Linear Equations 4b. Matrix Operations & Representations 4c. Solving Systems Using Matrices 4d. Applications of Systems	5a. Angles, Radians & the Unit Circle 5b. Trigonometric Functions & Graphs 5c. Inverse Trigonometric Functions & Equations 5d. Sinusoidal Functions & Real-World Modeling 6a. Arithmetic & Geometric Sequences 6b. Arithmetic & Geometric Series 6c. Counting Principles & Combinatorics 6d. Introductory Probability	7a. Data Collection, Sampling & Bias 7b. Descriptive Statistics & Data Analysis 7c. Correlation & Linear Regression 7d. Simple & Compound Interest 7e. Savings, Investments & Compound Growth 7f. Annuities & Loans 7g. Mortgages, Credit & Financial Decision-Making

G11 Math – Algebra II

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Algebra Basics and Functions Unit 2: Linear, Absolute Value and Piecewise Functions	Unit 3: Quadratic and Polynomial Functions Unit 4: Power, Radical and Rational Functions	Unit 5: Exponential, Logarithmic and Logistic Functions Unit 6: Systems of Equations and Introduction to Matrices	Unit 7: Sequences, Series and Discrete Mathematics Unit 8: Conic Sections and Analytic Geometry
Learning Targets	1a. Simplifying expressions 1b. Simplifying expressions 1c. Solving equations and inequalities 1d. Exponent rules 1e. Function notation 1f. Evaluating functions 1g. Domain and range 1h. Introduction to graphs 2a. Linear functions 2b. Slope and rate of change 2c. Graphing linear functions 2d. Transformations 2e. Absolute value functions 2f. Absolute value equations and inequalities 2g. Piecewise functions 2h. Interpreting graphs	3a. Quadratic graphs 3b. Vertex, standard and factored form 3c. Solving by factoring 3d. Completing the square 3e. Quadratic formula and Discriminant 3f. Non-real solutions 3g. Polynomial operations 3h. Factoring polynomials 3i. Zeros and roots 3j. Graphing polynomial functions 3k. End behaviour 4a. Power functions 4b. Rational exponents 4c. Radical expressions 4d. Simplifying radicals 4e. Solving basic radical equations 4f. Rational expressions 4g. Domain restrictions 4h. Rational functions 4i. Vertical and horizontal asymptotes 4j. Holes and basic graphing	5a. Exponential functions 5b. Growth and decay 5c. Exponential modelling 5d. Compound interest 5e. Logarithmic functions 5f. Converting exponential and logarithmic forms 5g. Basic logarithm laws 5h. Solving equations 5i. Logistic functions and modelling 6a. Graphical systems 6b. Substitution 6c. Elimination 6d. Number of solutions 6e. Applications and modelling 6f. Introduction to matrices 6g. Matrix notation 6h. Basic operations 6i. Simple applications	7a. Arithmetic sequences 7b. Geometric sequences 7c. Recursive sequences 7d. Arithmetic series 7e. Geometric series 7f. Selected discrete mathematics Applications 8a. Coordinate geometry review 8b. Circles and Parabolas 8c. Connecting quadratics to conics 8d. Applications and graph interpretation

G10 Math – Geometry

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Reasoning in Geometry Unit 2: Building Blocks of Geometry	Unit 3: Congruence Transformations Unit 4: Triangles and Proof	Unit 5: Quadrilaterals and Other Polygons Unit 6: Similarity	Unit 7: Special Right Triangles & Trigonometry Unit 8: Circles, Surface Area and Volume
Learning Targets	1a. Definitions and Inductive Reasoning 1b. Conditional Statements 1c. Deductive Reasoning 1d. Using Deductive & Visual Reasoning 1e. Mathematical Arguments and Justification 2a. Points, Lines, Segments, and Rays 2b. Midpoint and Segment Relationships 2c. Angle Classification and Relationships 2d. Vertical Angles and Linear Pairs 2e. Parallel Lines and Angle Relationships 2f. Parallel and Perpendicular Lines on the Coordinate Plane	3a. Introduction to Transformations 3b. Translations 3c. Reflections 3d. Rotations 3e. Compositions and Congruence 3f. Transformations on the Coordinate Plane 4a. Triangle Properties and Classification 4b. Exterior Angles and Angle-Side Relationships 4c. Right Triangles and the Pythagorean Theorem 4d. Distance on the Coordinate Plane 4e. Triangle Congruence Shortcuts 4f. Triangle Congruence Proofs	5a. Quadrilateral Classification and Hierarchy 5b. Properties of Parallelograms 5c. Special Parallelograms 5d. Quadrilaterals on the Coordinate Plane 5e. Areas of Quadrilaterals and Polygons 5f. Interior and Exterior Angles of Polygons 6a. Dilations and Scale Factor 6b. Dilations on the Coordinate Plane 6c. Similar Figures and Proportionality 6d. Triangle Similarity Shortcuts 6e. Proportional Segments 6f. Perimeter and Area of Similar Figures	7a. 45° – 45° – 90° Triangles 7b. 30° – 60° – 90° Triangles 7c. Trigonometric Ratios 7d. Solving for Missing Sides 7e. Inverse Trigonometric Ratios 7f. Applications of Trigonometry 8a. Circle Vocabulary and Properties 8b. Equations of Circles 8c. Tangents, Chords, and Arcs 8d. Inscribed Angles and Quadrilaterals 8e. Circumference, Area, Sector and Arc Length 8f. Volume and Surface Area of Prisms, Cylinders, Pyramids and Cones 8g. Problem Solving with Volume

G09 Math - Algebra I

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Equations and Inequalities Unit 2: Properties of Functions/slope	Unit 3: Linear Functions & Systems Unit 4: Exponents and Polynomials	Unit 5: Factoring Polynomials Unit 6: Quadratic Functions	Unit 7: Exponential Functions Unit 8: Sequences Unit 9: Data and Statistics
Learning Targets	1a. Simplify expressions using properties like the distributive property. 1b. Solve equations and inequalities, including those with no or infinite solutions. 1c. Solve literal equations for a given variable. 2a. Identify functions and find domain and range using graphs, tables, or equations. 2b. Graph and describe functions and their inverses. 2c. Find slope, write linear equations/inequalities, and graph them. 2d. Solve direct variation and write equations of parallel/perpendicular lines. 2e. Describe linear transformations using shifts and scaling.	3a. Find slope and write linear equations and inequalities in different forms, then graph and interpret them in real-world situations. 3b. Solve direct variation problems and write equations of lines, including parallel and perpendicular ones. 3c. Describe transformations of linear functions, including shifts and changes from multiplying or scaling. 3d. Use data to write linear models, make predictions, and understand correlation, causation, and association. 3e. Graph and solve systems of equations and inequalities using different methods, and choose the most efficient strategy. 4a. Add, subtract, multiply, and divide polynomials, and apply patterns like special products and factoring techniques.	5a. Factor expressions using GCF, trinomials, difference of squares, and perfect square trinomials. 5b. Graph quadratic functions and identify features like vertex and symmetry. 5c. Analyze and compare domain, range, and key features of quadratic forms. 5d. Describe transformations of quadratic functions through shifts and scaling. 6a. Solve quadratics by factoring, square roots, completing the square, and the quadratic formula. 6b. Simplify radicals and use the discriminant to determine solution types.	7a. Compare linear and exponential functions, and identify horizontal asymptotes and suitable models. 7b. Graph exponential functions, identify domain, range, and initial value, and write equations from tables or graphs. 7c. Determine growth or decay and interpret exponential model parameters using technology. 8a. Write and apply recursive and explicit formulas for arithmetic and geometric sequences. 9a. Analyze and compare measures of center and spread, including mean, MAD, and standard deviation. 9b. Interpret and compare data using dot plots, histograms, box plots, and two-way tables.

G08 Math – Pre Algebra

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Real Number System Unit 2: Exponents & Scientific Notation	Unit 3: Linear Equations & Relationships Unit 4: Functions	Unit 5: System of Equations Unit 6: Transformations	Unit 7: Angle Relationships & Pythagorean Theorem Unit 8: Volume, Scatter plots and Data
Learning Targets	1a. Fractions and Decimals 1b. Squares and Square Roots 1c. Estimating Square Roots 1d. Rational vs. Irrational Numbers 1e. Classifying Real Numbers 1f. Comparing and Ordering Real Numbers 2a. Square roots and Cube Roots 2b. Properties of Exponents 2c. Properties of Negative and Zero Exponents 2d. Scientific Notation 2e. Adding and Subtracting with Scientific Notation 2f. Multiplying and Dividing with Scientific Notation 2g. Estimating Quantities	3a. Simplifying Expressions 3b. Simplifying Expressions with Distributive Property 3c. One and two step Equations 3d. Multi-step Equations 3f. Multi Step Equations with Distributive Property 3g. Equations with variables on both sides 3h. Writing equations with Variables on both sides 3i. Equations with Special Cases 3j. Slope and Rate of Change 3k. Slope -Intercept Form 3l. Graphing Linear Equations 3m. Multiple Representations 3n. Proportional and Non-Proportional Relationships 4a. Identifying Functions 4b. Linear vs Nonlinear Functions 4c. Writing Equations of Linear Functions 4d. Applying Linear Functions 4e. Analysing Functions and Graphs	5a. Intro to system of Equations 5b. Solving Systems by Graphing 5c. Solving Systems by Substitution 5d. Solving Systems by Elimination 5e. Solving Systems by Inspection 5f. Applying Systems of Equations 6a. Basics of Transformations 6b. Translations on the Coordinate Plane 6c. Reflections on the Coordinate Plane 6d. Rotation on the Coordinate Plane 6e. Identifying Transformations 6f. Scale Factor and Dilations 6g. Dilations on the Coordinate Plane 6h. Properties of Transformations	7a. Parallel Lines and Transversals 7b. Applying Angle Relationships 7c. Interior Angles of Triangles 7d. Exterior Angles of Triangles 7e. Angles in Similar Triangles 7f. The Pythagorean Theorem 7g. Pythagorean Theorem Converse 7h. Applying the Pythagorean Theorem 7i. Distance on a Coordinate Plane 7j. 3D Applications of Pythagorean Theorem 8a. Volume of Cylinder 8b. Volume of Cones 8c. Applying Volume of Cylinder and Cones 8d. Volume of Spheres 8e. Applying Volume of Spheres 8f. Scatter Plots and Association 8g. Constructing Scatter Plots 8h. Scatter Plots and Predictions 8i. Trend Line Equations 8j. Two-Way-Tables 8k. Relative Frequency

G07 Math

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Rational Numbers Unit 2: Expressions, Equations and Inequalities	Unit 3: Proportional Relationships Unit 4: Percents Unit 5: Angles and Triangles	Unit 6: Plane Geometry Unit 7: Surface Area and Volume	Unit 8: Data and Statistics Unit 9: Probability
Learning Targets	1a. Represent and compare integers and rational numbers on a number line. 1b. Add, subtract, multiply, and divide rational numbers, including decimals and fractions. 1c. Simplify expressions involving rational numbers using properties of operations. 2a. Solve one-step, two-step, and multi-step equations with rational numbers. 2b. Write, solve, and graph one- and two-step inequalities. 2c. Solve real-world problems involving inequalities and rational numbers.	3a. Understand and apply proportional relationships to solve real-world problems. 3b. Solve problems involving ratios, rates, and proportions, including real-world applications. 3c. Analyze and represent proportional relationships using tables, graphs, and equations. 3d. Interpret and compare proportional relationships to make predictions and decisions. 4a. Solve problems involving percentages, including finding percent of a number and solving for unknowns. 5a. Solve problems using angle relationships (supplementary, complementary, vertical, adjacent). 5b. Use triangle properties to find unknown side lengths or angles.	6a. Understand and apply the properties of geometric figures, including angles, lines, and shapes. 6b. Solve problems involving scale drawings and geometric transformations, such as rotations and reflections. 6c. Classify two- and three-dimensional figures based on their properties. 7a. Calculate the area and surface area of geometric figures. 7b. Calculate the volume of geometric figures. 7c. Apply proportionality in geometry, such as similarity and dilations.	8a. Understand and interpret data displays, such as dot plots, histograms, and box plots. 8b. Summarize and describe data using mean, median, mode, range, and interquartile range. 9a. Understand and calculate probabilities, and use them to predict outcomes. 9b. Use data to make inferences and justify conclusions. 9c. Evaluate and interpret the effects of outliers and variability on data analysis.

G06 Math

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Decimal and Fractions Unit 2: The Number System	Unit 3: Rates and Percents Unit 4: Coordinate Plane	Unit 5: Expressions Unit 6: Equations and Inequalities Unit 7: Area and Surface Area	Unit 8: Data and Statistics Unit 9: Review and Mixed Practice
Learning Targets	1a. Add, subtract, multiply, and divide fractions, decimals, and integers. 1b. Solve problems involving ratios and rates, and use ratios to solve real-world problems. 1c. Understand and apply the concepts of equivalent fractions and the distributive property. 2a. Write and solve equations involving variables and unknowns. 2b. Use proportional relationships to solve real-Understand and represent rational numbers on a number line. 2c. World problems involving percentages. 2d. Work with fractions, decimals, and percentages to solve complex problems.	3a. Apply ratios and proportions to solve real-world problems involving rates and percentages. 3b. Understand and use variables to represent numbers and write algebraic expressions. 3c. Solve one-step and two-step equations and inequalities. 3d. Understand and apply the distributive property and other algebraic principles. 3e. Use expressions and equations to model and solve real-world problems. 4a. Graph points in all four quadrants of the coordinate plane and interpret the meaning of coordinates in context. 4b. Solve real-world problems by plotting points on the coordinate plane.	5a. Understand and apply properties of operations to simplify and evaluate algebraic expressions. 6a. Use the distributive property and other algebraic rules to solve expressions and equations. 6b. Solve real-world problems by writing and interpreting algebraic expressions and equations. 7a. Understand and calculate the area, perimeter, and volume of geometric figures. 7b. Classify and analyze two-dimensional shapes based on their properties. 7c. Understand and apply concepts of coordinate geometry to solve problems.	8a. Understand and interpret data displays, such as histograms, dot plots, and box plots. 8b. Summarize and analyze data using mean, median, mode, range, and interquartile range. 8c. Understand and calculate probabilities using outcomes to determine likelihood. 8d. Apply probability to solve real-world problems and make predictions. 9a Apply concepts and skills from previous units to solve mixed problems and real-world applications.

G05 Math

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Operations and Algebraic Thinking	Unit 2: Fluency with Whole Numbers and Decimals	Unit 3: Operations with Fractions	Unit 4: Geometry, Measurement, and Data
Learning Targets	1. Write and interpret numerical expressions 2. Analyze patterns and relationships 3. Graph points on the coordinate plane to solve real-world and mathematical problems 4. Analyze patterns and relationships	1. Understand the place value system 2. Perform all four operations with multi-digit whole numbers with decimals to hundredths. 3. Understand volume and relate volume to multiplication and division.	1. Use equivalent fractions as strategy to add and subtract fractions 2. Apply and extend multiplication and division to multiply and divide fractions.	1. Represent and interpret data 2. Classify two and three-dimensional figures into categories based on their properties 3. Convert like measurement units in the same system

G04 Math

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Place Value and Operations with Whole Numbers-Multiplication	Unit 2: Place Value and Operations with Whole Numbers - Division	Unit 3: Fractions and Decimals	Unit 4: Geometry, Measurement, and Data
Learning Targets	1. Demonstrate understanding of multi-digit place value 2. Perform operations with multi-digit numbers. 3. Use the four operations with whole numbers to solve problems (+,-,x,÷) 4. Performs operations with multi-digit numbers	1. Demonstrate understanding of multi-digit place value 2. Perform operations with multi-digit numbers. 3. Use the four operations with whole numbers to solve problems (+,-,x,÷) 4. Performs operations with multi-digit numbers. 5. Efficiently apply strategies to solve problems. 6. Clearly communicate mathematical thinking	1. Add and subtract fractions 2. Demonstrate understanding of fraction equivalence and ordering 3. Demonstrate an understanding of the relationship between fractions and decimals 4. Efficiently apply strategies to solve problems 5. Clearly communicate mathematical thinking	1. Solve problems involving measurement, perimeter, area, and volume 2. Represent and interpret data 3. Draw and identify lines and angles 4. Classify shapes by properties of lines and angles 5. Efficiently apply strategies to solve problems 6. Clearly communicate mathematical thinking

G03 Math

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Place Value and Operations with Whole Numbers-Multiplication	Unit 2: Place Value Operations and Understanding Whole Number Operations-Multiplication and Division	Unit 3: Fractions and Data	Unit 4: Measurement and Geometry
Learning Targets	1. Add and subtract whole numbers fluently 2. Represent and solve problems involving multiplication 3. Multiply whole numbers fluently 4. Multiply within 100	1. Use place value understanding to perform multi-digit arithmetic 2. Divide whole numbers fluently 3. Understand properties of multiplication and the relationship between multiplication and division 4. Divide within 100 5. Represent and solve problems involving multiplication and division 6. Solve problems involving the four operations, and identify and explain patterns in arithmetic.	1. Demonstrate an understanding of fractions 2. Represent and interpret data	1. Tell and write time 2. Solve problems involving measurement 3. Represent and interpret data 4. Demonstrate an understanding of area and perimeter 5. Categorize and partition shapes

G02 Math

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Number Sense and Place Value	Unit 2: Addition and Subtraction	Unit 3: Money, Time, and Measurement	Unit 4: Geometry, Fraction, and Data
Learning Targets	1. Represent and solve problems involving addition and subtraction. 2. Fluently add and subtract within 20. 3. Work with equal groups of objects to gain foundations for multiplication.	1. Understand two-digit and three-digit numbers represent hundreds, tens, and ones. 2. Count within 1000; skip-count by 5s, 10s, and 100s. 3. Read, write, and compare numbers to 1000. 4. Use place value understanding to regroup when adding and subtracting within 1000.	1. Measure and estimate lengths in standard units. 2. Tell time to the nearest five minutes, using a.m. and p.m. 3. Solve problems involving dollar bills and coins.	1. Reason with shapes and their attributes. 2. Describe equal parts of the whole. 3. Represent and interpret data by using picture graphs or bar graphs.

G01 Math

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Number Sense and Place Value	Unit 2: Operations and Algebraic Thinking	Unit 3: Measurement and Data	Unit 4: Geometry
Learning Targets	- Count to 120 - Understand that a 2 digit number represents tens and ones - Compare two digits - Use place value understanding and properties of operations to add and subtract - Count within 120; Skip-count by 2s, 5s, 10s	- Add and subtract within 20, with fluency to 10 - Represent and solve problems involving addition and subtraction within 100	- Express the length of an object as a whole number of length units - Tell time to the hour and half-hours - Organize, represent, and interpret data	Compare, compose, and partition shapes

KG2 Math

	Quarter I	Quarter II	Quarter III	Quarter IV
Units	Unit 1: Counting, Cardinality, Number Sense and operations in Base Ten	Unit 2: Operations and Algebraic Thinking	Unit 3: Measurement and Data	Unit 4: Geometry
Learning Targets	- Orally count to 100 by 1's and 10's. - Know number names and the counting sequence to 20. - Count to tell the number of objects to 20. - Work with numbers 11-19 to demonstrate place value. - Compare sets of objects to tell more, less, or equal quantities.	- Demonstrate addition as putting together/adding to and subtraction as taking apart/taking from. - Fluently add and subtract within 5. - Add and subtract within 10 using objects.	- Describe and compare measurable attributes such as length or weight. - Classify objects and count the number of objects in each category.	- Identify, describe, and compare shapes - Square, circle, triangle, rectangle, hexagon. - Identify, describe, and compare 3-D shapes - cube, cone, cylinder, sphere.