California Reveal MATH®

Scope and Sequence

Algebra I • Geometry • Algebra 2

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California Reveal MATH®

Unit 1 – Using Expressions and Equations

Big Ideas: Growth and Decay; Systems of Equations

Essential Question: How can writing and solving equations help you solve problems in the real world?

Lesson 1-1	Properties of Real Numbers
1-2	Descriptive Modeling with Expressions
1-3	Solving Equations in One Variable
Math Probe	Solving for a Variable
1-4	Absolute Value Expressions and Equations
1-5	Using Formulas

Unit 2 – Relations and Functions

Big Idea: Features of Functions

Essential Question: Why are representations of relations and functions useful?

Lesson 2-1	Representing Relations
Math Probe	Graphical Representations
2-2	Functions
2-3	Linearity and Continuity of Graphs
2-4	Intercepts of Graphs
2-5	Shapes of Graphs
2-6	Sketching Graphs and Comparing Functions

Unit 3 – Linear and Nonlinear Functions

Big Ideas: Growth and Decay; Function Investigations

Essential Question: What can a function tell you about the relationship that it represents?

Lesson 3-1	Graphing Linear Functions
3-2	Rate of Change and Slope
3-3	Slope-Intercept Form
3-4	Transformations of Linear Functions
3-5	Arithmetic Sequences
3-6	Piecewise and Step Functions
3-7	Absolute Value Functions
Math Probe	Absolute Value Functions

Unit 4 – Creating Linear Equations

Big Ideas: Model with Functions; Investigate Data

Essential Question: How can creating a linear function to model real-world situations be useful?

Lesson 4-1	Writing Equations in Slope-Intercept Form
4-2	Writing Equations in Standard and Point-Slope Forms
4-3	Scatter Plots and Lines of Fit
4-4	Linear Regression
Math Probe	Modeling with Linear Equations
4-5	Inverses of Linear Functions

Unit 5 – Linear Inequalities

Big Idea: Systems of Equations

Essential Question: How can writing and solving inequalities help you solve problems in the real world?

Lesson 5-1	Solving One-Step Inequalities
5-2	Solving Multi-Step Inequalities
5-3	Solving Compound Inequalities
5-4	Solving Absolute Value Inequalities
5-5	Graphing Inequalities in Two Variables
Math Probe	Graphs of Linear Inequalities

Unit 6 – Systems of Linear Equations and Inequalities

Big Idea: Systems of Equations

Essential Question: How are systems of equations useful in the real world?

Lesson 6-1	Graphing Systems of Equations
6-2	Substitution
6-3	Elimination Using Addition and Subtraction
6-4	Elimination Using Multiplication
Math Probe	Systems of Linear Equations
6-5	Systems of Inequalities

Unit 7 – Exponents and Roots

Big Ideas: Growth and Decay; Systems of Equations

Essential Question: How do you perform operations and represent real-world situations with exponents?

Lesson 7-1	Properties of Exponents
7-2	Operations with Negative Exponents
7-3	Rational Exponents
Math Probe	Rational Exponents
7-4	Simplifying Radical Expressions
7-5	Operations with Radical Expressions
7-6	Solving Equations Involving Exponents

Unit 8 – Exponential Functions

Big Ideas: Features of Functions; Growth and Decay

Essential Question: When and how can exponential functions represent real-world situations?

Lesson 8-1	Exponential Functions
8-2	Transformations of Exponential Functions
8-3	Writing Equations for Exponential Functions
Math Probe	Exponential Growth and Decay
8-4	Transforming Exponential Expressions
8-5	Geometric Sequences
8-6	Recursive Formulas

Unit 9 – Polynomials

Big Idea: Growth and Decay

Essential Question: How can you perform operations on polynomials and use them to represent real-world situations?

Lesson 9-1	Adding and Subtracting Polynomials
9-2	Multiplying Polynomials by Monomials
9-3	Multiplying Polynomials
9-4	Special Products
Math Probe	Multiplying Binomials
9-5	Factoring Polynomials
9-6	Factoring Quadratic Trinomials
9-7	Factoring Special Products

Unit 10 – Quadratic Functions

Big Ideas: Features of Functions; Systems of Equations; Investigate Data

Essential Question: Why is it helpful to have different methods to analyze quadratic functions and solve quadratic equations?

Lesson 10-1	Graphing Quadratic Functions
10-2	Transformations of Quadratic Functions
Math Probe	Transforming Quadratic Graphs
10-3	Solving Quadratic Equations by Graphing
10-4	Solving Quadratic Equations by Factoring
10-5	Solving Quadratic Equations by Completing the Square
10-6	Solving Quadratic Equations by Using the Quadratic Formula
10-7	Solving Systems of Linear and Quadratic Equations
10-8	Modeling and Curve Fitting
10-9	Combining Functions

Unit 11 – Statistics

Big Idea: Reasoning with Data

Essential Question: How do you summarize and interpret data?

Lesson 11-1	Representing Data
11-2	Measures of Center and Spread
Math Probe	Comparing Data in Box Plots
11-3	Distributions of Data
11-4	Comparing Sets of Data
11-5	Summarizing Categorical Data

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ALGEBRA 1

Unit 1 – Tools of Geometry

Big Ideas: Points and Shapes; Geospatial Data; Geometric Models

Essential Question: How are points, lines, line segments, and two- and three-dimensional figures used to model the real world?

Lesson 1-1	Points, Lines, and Planes
1-2	Line Segments
1-3	Locating Points
1-4	Midpoints and Bisectors
1-5	Angle Relationships
1-6	Two-Dimensional Figures
1-7	Three-Dimensional Figures
Math Probe	Name the Shape
1-8	Precision and Accuracy

Unit 2 – Logical Arguments

Big Ideas: Points and Shapes

Essential Question: What makes a logical argument, and how are logical arguments used to solve problems in the real world?

Lesson 2-1	Conjectures and Counterexamples
Math Probe	Conjectures
2-2	Statements, Conditionals, and Biconditionals
2-3	Deductive Reasoning
2-4	Writing Proofs
2-5	Proving Segment Relationships
2-6	Proving Angle Relationships

Unit 3 – Parallel and Perpendicular Lines

Big Ideas: Points and Shapes; Geometric Models

Essential Question: How can real-world situations be modeled using parallel or perpendicular lines?

Lesson 3-1	Parallel Lines and Transversals
3-2	Slope and Equations of Lines
3-3	Proving Lines Parallel
Math Probe	Proving Lines Parallel
3-4	Perpendiculars and Distance

Unit 4 – Transformations and Symmetry

Big Ideas: Transformations

Essential Question: How are rigid motions used to investigate and prove geometric relationships?

Lesson 4-1	Reflections
4-2	Translations
4-3	Rotations
4-4	Compositions of Transformations
Math Probe	Transformations
4-5	Symmetry

Unit 5 – Triangles and Congruence

Big Ideas: Triangle Congruence; Geospatial Data

Essential Question: How can proving triangle congruence help solve problems in the real world?

Lesson 5-1	Angles of Triangles
5-2	Congruent Triangles
5-3	Proving Triangles Congruent: SSS, SAS
5-4	Proving Triangles Congruent: ASA, AAS
5-5	Proving Right Triangles Congruent
5-6	Isosceles and Equilateral Triangles
Math Probe	Congruent Triangles
5-7	Triangles and Coordinate Proof

Unit 6 – Relationships in Triangles

Big Ideas: Triangle Problems

Essential Question: How can relationships in triangles be used in real-world situations?

Lesson 6-1	Perpendicular Bisectors of Segments
6-2	Angle Bisectors
6-3	Medians and Altitudes of Triangles
6-4	Indirect Proof
6-5	Inequalities in One Triangle
6-6	The Triangle Inequality
6-7	Inequalities in Two Triangles
Math Probe	Relationships in Triangles

Unit 7 – Quadrilaterals

Big Ideas: Geospatial Data; Points and Shapes

Essential Question: How can the characteristics of the different types of quadrilaterals be used to represent real-world objects and situations?

Lesson 7-1	Angles of Polygons
7-2	Parallelograms
7-3	Tests for Parallelograms
Math Probe	Is It a Parallelogram?
7-4	Rectangles
7-5	Rhombi and Squares
7-6	Trapezoids and Kites

Unit 8 – Similarity

Big Ideas: Points and Shapes; Triangle Problems

Essential Question: What does it mean for objects to be similar, and how is similarity useful for modeling in the real world?

Lesson 8-1	Dilations
8-2	Similar Polygons
8-3	Similar Triangles: AA Similarity
8-4	Similar Triangles: SSS and SAS Similarity
8-5	Triangle Proportionality
Math Probe	Similar Triangles
8-6	Special Segments in Similar Triangles

Unit 9 – Right Triangles and Trigonometry

Big Ideas: Triangle Problems; Trig Explorations

Essential Question: How are right triangle relationships useful in solving real-world problems?

Lesson 9-1	Geometric Mean
9-2	Pythagorean Theorem and Its Converse
9-3	Special Right Triangles
9-4	Trigonometry
Math Probe	Solving Trigonometric Equations
9-5	Applying Trigonometry
9-6	Trigonometry and Area
9-7	The Law of Sines
9-8	The Law of Cosines

Unit 10 – Circles and Parabolas

Big Ideas: Circle Relationships; Geospatial Data; Points and Shapes

Essential Question: How can circles and parts of circles be used to model situations in the real world?

Lesson 10-1	Circles and Circumference
10-2	Measuring Angles and Arcs
10-3	Arcs and Chords
10-4	Inscribed Angles and Inscribed Polygons
Math Probe	Circles and Angles
10-5	Tangents and Circumscribed Polygons
10-6	Tangents, Secants, and Angle Measures
10-7	Equations of Circles
10-8	Equations of Parabolas

Unit 11 – Measurement

Big Ideas: Geospatial Data; Geometric Models

Essential Question: How are measurements of two- and three-dimensional figures useful for modeling situations in the real world?

Lesson 11-1	Areas of Quadrilaterals
11-2	Areas of Regular Polygons
11-3	Areas of Circles and Sectors
11-4	Surface Area
11-5	Cross Sections and Solids of Revolution
11-6	Volumes of Prisms and Pyramids
Math Probe	Heights in Solids
11-7	Volumes of Cylinders, Cones, and Spheres
11-8	Applying Similarity to Solid Figures
11-9	Density

Unit 12 – Probability

Big Ideas: Probability Modeling; Fairness in Data

Essential Question: How can you use data and probability to make decisions?

Lesson 12-1	Sample Spaces
12-2	Probability and Counting
12-3	Geometric Probability
12-4	Probability with Permutations and Combinations
12-5	Probability and the Multiplication Rule
12-6	Probability and the Addition Rule
Math Probe	Probability
12-7	Conditional Probability
12-8	Two-Way Frequency Tables

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GEOMETRY

Unit 1 – Relations and Functions

Big Idea: Investigate and Model with Functions

Essential Question: How can analyzing a function help you understand the situation it models?

Lesson 1-1	Functions and Continuity
1-2	Linearity, Intercepts, and Symmetry
1-3	Extrema and End Behavior
1-4	Sketching Graphs and Comparing Functions
Math Probe	Interpreting Functions
1-5	Graphing Linear Functions and Inequalities
1-6	Piecewise and Absolute Value Functions
1-7	Transformations of Functions

Unit 2 – Linear Equations, Inequalities, and Systems

Big Ideas: Equations and Algebra; Investigate and Model with Functions

Essential Question: How are equations, inequalities, and systems of equations or inequalities best used to model to real-world situations?

Lesson 2-1	Solving Linear Equations and Inequalities
2-2	Solving Absolute Value Equations and Inequalities
2-3	Forms of Linear Equations
2-4	Solving Systems of Equations
2-5	Systems of Inequalities and Linear Programming
Math Probe	Systems of Linear Inequalities
2-6	Systems of Equations in Three Variables

Unit 3 – Quadratic Functions

Big Ideas: Investigate and Model with Functions; Equations and Algebra

Essential Question: What are the limitations of the different methods for solving quadratic equations?

Lesson 3-1	Graphing and Interpreting Quadratic Functions
3-2	Solving Quadratic Equations by Graphing
3-3	Complex Numbers
3-4	Solving Quadratic Equations by Factoring

Unit 3 – Quadratic Functions

Math Probe	Factoring
3-5	Completing the Square
3-6	Using the Quadratic Formula and the Discriminant
3-7	Quadratic Inequalities
3-8	Solving Linear-Nonlinear Systems

Unit 4 – Polynomials and Polynomial Functions

Big Ideas: Equations and Algebra; Investigate and Model with Functions

Essential Question: How does an understanding of polynomials and polynomial functions help us understand and interpret real-world events?

Lesson 4-1	Operations with Polynomials
Math Probe	Subtracting Polynomials
4-2	Dividing Polynomials
4-3	Powers of Binomials
4-4	Polynomial Functions
4-5	Analyzing Graphs of Polynomial Functions

Unit 5 – Polynomial Equations

Big Ideas: Equations and Algebra

Essential Question: What methods are useful for solving polynomial equations and finding zeros of polynomial functions?

Lesson 5-1	Solving Polynomial Equations by Graphing
Math Probe	Polynomial Factors
5-2	Solving Polynomial Equations Algebraically
5-3	Proving Polynomial Identities
5-4	The Remainder and Factor Theorems
5-5	Roots and Zeros

Unit 6 – Inverse and Radical Functions

Big Ideas: Growth and Decay; Investigate and Model with Functions; Equations and Algebra

Essential Question: How can inverse operations and the inverse of a function be used to help interpret a real-world event or solve a problem?

Lesson 6-1	*n*th Roots and Rational Exponents
6-2	Operations with Radical Expressions
6-3	Graphing Radical Functions

Unit 6 – Inverse and Radical Functions

6-4	Solving Radical Equations and Inequalities
6-5	Operations on Functions
6-6	Inverse Relations and Functions
Math Probe	Combining Functions

Unit 7 – Exponential Functions

Big Ideas: Investigate and Model with Functions; Equations and Algebra; Growth and Decay

Essential Question: How are real-world situations involving quantities that grow or decline rapidly modeled mathematically?

Lesson 7-1	Graphing Exponential Functions
7-2	Solving Exponential Equations and Inequalities
Math Probe	Solving Exponential Equations
7-3	Special Exponential Functions
7-4	Geometric Sequences and Series
7-5	Modeling Data

Unit 8 – Logarithmic Functions

Big Ideas: Investigate and Model with Functions; Growth and Decay; Equations and Algebra

Essential Question: How are logarithms defined and used to model situations in the real world?

Lesson 8-1	Logarithms and Logarithmic Functions
8-2	Properties of Logarithms
Math Probe	Properties of Logarithms
8-3	Common Logarithms
8-4	Natural Logarithms
8-5	Using Exponential and Logarithmic Functions

Unit 9 – Rational Functions

Big Ideas: Growth and Decay; Investigate and Model with Functions; Equations and Algebra

Essential Question: How are the rules for operations with rational numbers applied to operations with rational expressions and equations?

Lesson 9-1	Multiplying and Dividing Rational Expressions
9-2	Adding and Subtracting Rational Expressions
9-3	Graphing Reciprocal Functions
9-4	Graphing Rational Functions

Unit 9 – Rational Functions

Math Probe	Graphs of Rational Functions
9-5	Solving Rational Equations and Inequalities

Unit 10 – Inferential Statistics

Big Ideas: Inferences and Conclusions from Data; Probability Modeling

Essential Question: How can data be collected and interpreted so that it is useful to a specific audience?

Lesson 10-1	Random Sampling and Studies
Math Probe	Populations and Samples
10-2	Using Statistics to Make Decisions
10-3	Analyzing Population Data
10-4	Probability Distributions
10-5	Normal Distributions
10-6	Estimating Population Parameters

Unit 11 – Trigonometric Functions

Big Ideas: Trigonometric Functions

Essential Question: What are the key features of the graph of a trigonometric function and how do they represent real-world situations?

Lesson 11-1	Angles and Angle Measure
Math Probe	Angle Measures
11-2	Trigonometric Functions of General Angles
11-3	Circular and Periodic Functions
11-4	Graphing Sine and Cosine Functions
11-5	Graphing Other Trigonometric Functions
11-6	Translations of Trigonometric Graphs

Unit 12 – Trigonometric Identities

Big Ideas: Trigonometric Functions

Essential Question: How are trigonometric identities similar to and different from other equations?

Lesson 12-1	Trigonometric Identities
Math Probe	Equivalent Trigonometric Expressions
12-2	Verifying Trigonometric Identities
12-3	Sum and Difference Identities
12-4	Double-Angle and Half-Angle Identities

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