

Algebra 2: Principles of Secondary Mathematics Concepts

Unit 1: Extending Algebra 1

Lesson 1	Linear Programming
Lesson 2	Linear Systems with Three Variables
Lesson 3	Operations with Polynomials
Lesson 4	Polynomial Identities
Lesson 5	Polynomial Long Division
Lesson 6	Synthetic Division
Lesson 7	Multiplying and Dividing Rational Expressions
Lesson 8	Adding and Subtracting Rational Expressions
Lesson 9	Solving Rational Equations
Lesson 10	Graphing Reciprocal Functions

Unit 2: Radicals, Complex Numbers, and Families of Functions

Lesson 11	d^{th} -Degree Radical Expressions under the Set of Reals
Lesson 12	Radical Expressions with More than One Operation
Lesson 13	Solving Radical Equations
Lesson 14	Solving and Graphing Radical Inequalities
Lesson 15	Complex Numbers and the Imaginary Unit
Lesson 16	Working with Complex Numbers
Lesson 17	Parent Functions
Lesson 18	Transforming Parent Functions
Lesson 19	Finding Inverses Algebraically
Lesson 20	Graphing Functions and Their Inverses
Lesson 21	Piecewise Functions
Lesson 22	Inequality Graphs

Unit 3: Introduction to Conics

Lesson 23	Solving Polynomials with Factoring
Lesson 24	Completing the Square
Lesson 25	The Quadratic Formula
Lesson 26	Distance and Midpoint Formulas
Lesson 27	Parabolas
Lesson 28	Circles
Lesson 29	Ellipses
Lesson 30	Hyperbolas
Extension Lesson	Conics and Foci

Unit 4: Polynomial Functions

Lesson 31	Operations with Functions
Lesson 32	Composite Functions
Lesson 33	Polynomial Functions and the Leading Coefficient Test
Lesson 34	Zeros and Multiplicity (of Polynomial Functions)
Lesson 35	The FUNDamental Theorem of Algebra
Lesson 36	Variation

Unit 5: Exponents and Logarithms

Lesson 37	Exponential Functions
Lesson 38	Exponential Equations and Inequalities
Lesson 39	Introduction to Logarithms
Lesson 40	Logarithmic Properties (Properties of Logs)
Lesson 41	Common Logs
Lesson 42	Natural Logs
Lesson 43	Logarithmic Functions
Lesson 44	Applications of Exponents and Logarithms
Extension Lesson	Geometric Sequences and Series
Extension Lesson	Degrees, Radians, and Arc Length
Extension Lesson	The 6 Trigonometric Functions

Unit 6: Statistics and Probability

Lesson 45	Data Distributions
Lesson 46	Standard Normal Distributions
Lesson 47	Introduction to Statistics
Lesson 48	Sampling Methods and Bias
Lesson 49	Error and Confidence
Lesson 50	Experiments and Probability
Lesson 51	Permutations and Combinations
Lesson 52	Binomial Counting Principles
Lesson 53	Theoretical and Experimental Probability
Lesson 54	Compound Probability
Lesson 55	Probability of Independent Events
Lesson 56	Probability of Dependent Events