

Pre-Algebra Curriculum Map

PRE-ALGEBRA UNITS

Overview: Suggested Pacing

Unit 1: Foundations	10 Days
Unit 2: Integers	11 Days
Unit 3: Basic Equations	15 Days
Unit 4: Factors and Exponents	12 Days
Unit 5: Fractions	12 Days
Unit 6: Percent	15 Days
Unit 7: Applying Equations & Inequalities	13 Days
Unit 8: Roots & Radicals	14 Days
Unit 9: Relations & Functions	15 Days
Unit 10: Relationships in Geometry . . .	12 Days
Unit 11: Area & Volume	12 Days
Unit 12: Probability & Statistics	15 Days
Unit 13: Polynomials	12 Days
Bonus Unit: Sequences and Changing Bases	3 Days
Total:	171 Days

- 2.4 Adding Integers Efficiently
- 2.5 Subtracting Integers
- 2.6 Multiplying Integers
- 2.7 Dividing Integers
- 2.8 Adding Like Terms
- 2.9 The Distributive Property
- Review
- Assessment

Unit 3 - Basic Equations (15 Days)

- 3.1 Introduction to Equations
- 3.2 Solving Equations by Addition
- 3.3 Solving Equations by Multiplication
- 3.4 Equation Time Savers
- 3.5 Two-step Equations (2 Days)
- 3.6 Simplifying & Solving Equations (1.5 Days)
- 3.7 Introduction to Inequalities (1.5 Days)
- 3.8 Solving Inequalities (2 Days)
- 3.9 Writing Equations
- 3.10 Writing Inequalities
- Review
- Assessment

Unit 4 - Factors and Exponents (12 Days)

- 4.1 Prime Numbers
- 4.2 Greatest Common Factor (1.5 Days)
- 4.3 Least Common Multiple (1.5 Days)
- 4.4 Fractions & Mixed Numbers
- 4.5 Exponent Properties (1.5 Days)
- 4.6 Zero & Negative Exponents (1.5 Days)
- 4.7 Scientific Notation
- 4.8 Operations in Scientific Notation
- Review
- Assessment

Unit 5 - Fractions (12 Days)

- 5.1 Reducing Fractions
- 5.2 Multiplying Fractions
- 5.3 Adding Fractions with Equivalent Denominator
- 5.4 Adding Fractions with Different Denominators (2 Days)
- 5.5 Dividing Fractions
- 5.6 Operations with Rational Numbers
- 5.7 Operations with Mixed Numbers
- 5.8 Decimal Operations (2 Days)
- Review
- Assessment

Unit Breakdowns with Suggested Pacing

Unit 1 - Foundations (10 days)

- 1.1 Classifying Real Numbers
- 1.2 Algebraic Expressions
- 1.3 Order of Operations (1.5 Days)
- 1.4 Exponents (1.5 Days)
- 1.5 Fractions & Decimals
- 1.6 Writing Algebraic Expressions
- 1.7 Properties of Numbers
- Review
- Assessment

Unit 2 - Integers (11 days)

- 2.1 Opposite Numbers
- 2.2 Adding Same-Signed Integers
- 2.3 Adding Opposite-Signed Integers

Unit 6 - Percent (15 Days)

- 6.1 Ratios & Rates
- 6.2 Proportions Part 1 & 2 (2 Days)
- 6.3 Fractions, Decimals, & Percent
- 6.4 Solving Percent problems (2 Days)
- 6.5 Applying Percent (2 Days)
- 6.6 Percent Increase
- 6.7 Percent Decrease
- 6.8 Sales tax & tips
- 6.9 Interest
- 6.10 Percent Change
- Review
- Assessment

Unit 7 - Applying Equations & Inequalities (13 Days)

- 7.1 Simplifying & Solving Equations
- 7.2 Equations with Variables on Both Sides (2 Days)
- 7.3 Equations with Fractions (2 Days)
- 7.4 Applying Equations (2 Days)
- 7.5 Equations with Circles
- 7.6 Multi-Step Inequalities (1.5 Days)
- 7.7 Applying Inequalities (1.5 Days)
- Review
- Assessment

Unit 8 - Roots & Radicals (14 Days)

- 8.1 Understanding Roots
- 8.2 Multiplying Radicals
- 8.3 Simplifying Square Roots (2 Days)
- 8.4 Solving Rational Equations
- 8.5 The Pythagorean Theorem (2 Days)
- 8.6 45-45-90 and 30-60-90 triangles (2 Days)
- 8.7 Sine, Cosine & Tangent Ratios (2 Days)
- 8.8 Find the Side of a Right Triangle
- Review
- Assessment

Unit 9 - Relations & Functions (15 Days)

- 9.1 The Coordinate Plane
- 9.2 Functions
- 9.3 Interpreting Solutions of Functions
- 9.4 Graphing Functions With an x/y Chart (2 Days)
- 9.5 Finding x & y Intercepts (Optional Lesson)
- 9.6 Finding the Slope of Two Points of a Line (2 Days)
- 9.7 Graphing Functions Using Slope-Intercept Form (2 Days)
- 9.8 Scatter Plots
- 9.9 Graphing Linear Inequalities (2 Days)
- Review
- Assessment

Unit 10 - Relationships in Geometry (12 Days)

- 10.1 Angle Types and Relationships
- 10.2 Perpendicular & Parallel Lines (1.5 Days)
- 10.3 Identifying Polygons (1.5 Days)
- 10.4 Quadrilaterals & Perimeter
- 10.5 Congruent Polygons (2 Days)
- 10.6 Transformations
- 10.7 Similar Polygons (2 Days)
- Review
- Assessment

Unit 11 - Area & Volume (12 Days)

- 11.1 Area of Parallelograms
- 11.2 Area of Triangles and Trapezoids
- 11.3 Area of Circles
- 11.4 Surface Area of Prisms (2 Days)
- 11.5 Surface Area of Cylinders & Spheres (2 Days)
- 11.6 Volume of Prisms & Cylinders (1.5 Days)
- 11.7 Volume of Pyramids, Cones & Spheres (1.5 Days)
- Review
- Assessment

Unit 12 - Probability & Statistics (15 Days)

- 12.1 Mean, Median, Mode and Range
- 12.2 Box and Whisker Plots (2 Days)
- 12.3 Stem and Leaf Plots
- 12.4 Interpreting Graphs
- 12.5 Fundamental Principle of Counting & Factorial
- 12.6 Permutations (2 Days)
- 12.7 Combinations (2 Days)
- 12.8 Probability
- 12.9 Independent & Dependent Events (2 Days)
- Review
- Assessment

Unit 13: Polynomials (12 Days)

- 13.1 Classifying Polynomials
- 13.2 Adding & Subtracting Polynomials (2 Days)
- 13.3 Multiplying Monomials (1.5 Days)
- 13.4 Monomials & Powers (1.5 Days)
- 13.5 Multiplying Binomials (2 Days)
- 13.6 Non-linear Functions (2 Days)
- Review
- Assessment

Bonus Unit

- 14.1 Arithmetic Sequences
- 14.2 Arithmetic Sequence Sums
- 14.3 Base 10 & Base 2

	Pacing Guide	CCSS Addressed	Core Skills	Key Vocabulary
Unit 1: Foundations	10 Days		Classifying numbers; Algebraic Expressions; Order of Operations; Exponents; Fractions and Decimals; Properties of numbers	Real, Rational and Irrational Numbers; Identity element of Addition; Order of Operations; Exponent; Base; Commutative Property; Associative Property; Identity Property; Inverse Property
Unit 2: Integers	11 Days	7.NS.A.2b; 7.NS.A.2a; 7.NS.A.2; 7.NS.A.1d; 7.NS.A.1c; 7.NS.A.1b; 7.NS.A.1a; 7.NS.A.1; 6.NS.C.7; 6.NS.C.6a; 6.NS.C.6; 6.NS.C.5	Opposite Numbers; Adding same and Opposite-Signed Integers; Adding Integers Efficiently; Integer Operations: Add, Subtract, Multiply, Divide; Adding Like Terms; Distributive Property	Opposite Numbers; Absolute Value; Additive Inverse; Numerical Coefficient; Like Terms; Distributive Property
Unit 3: Basic Equations	15 Days	8.EE.C.7b; 8.EE.C.7; 7.EE.4b; 7.EE.B.4a; 7.EE.B.4; 7.EE.B.3; 6.EE.B.8; 6.EE.B.7; 6.EE.B.6; 6.EE.B.5	Solving Equations using Addition and Multiplication; Equation Time Savers; Two-step Equations; Simplifying & Solving Equations; Inequalities; Writing Equations and Inequalities	Reciprocal; Inequality; Inequality Symbols; NTV of Consecutive Numbers; Solving Inequalities Exception
Unit 4: Factors and Exponents	12 Days	8.EE.A.4; 8.EE.A.1; 6.NS.B.4	Prime Numbers; Greatest Common Factors; Least Common Multiple; Fractions and Mixed Numbers; Exponent Properties; Zero and Negative Exponents; Scientific Notation; Operations in Scientific Notation	Divisibility Rules; Prime and Composite Factors; Greatest Common Factor; Least Common Multiple; Scientific Notation; Exponent Properties; Power Property; Zero Exponent; Negative Exponent
Unit 5: Fractions & Decimals	12 Days	7.NS.A.3; 7.NS.A.2; 7.NS.A.1; 6.NS.A.1	Reducing Fractions; Multiplying Fractions; Adding Fractions with Equivalent or Different Denominators; Dividing Fractions; Operations with Rational and Mixed Numbers; Decimal Operations;	R BUM; Adding/Subtracting/Dividing Fractions Rules; LCD
Unit 6: Percent	15 Days	7.RP.A.3; 7.RP.A.2c; 7.RP.A.2; 7.RP.A.1; 6.RP.A.3d; 6.RP.A.3c; 6.RP.A.3a; 6.RP.A.3; 6.RP.A.2; 6.RP.A.1	Rates & Rates; Proportions; Converting Fractions/Decimals/Percents; Solving and Applying Percent Problems; Percent Increase/Decrease; Sales Tax and Tip; Interest; Percent Change	Ratio; Rate; Unit Price; Proportion; Extremes; Means; Percent; Retail Price; Discount; Cost; Markup; Tax; Tip; Simple Interest; Principal; Percent Change
Unit 7: Applying Equations & Inequalities	13 Days	8.EE.C.7b; 7.EE.B.4; 7.EE.A.2	Simplifying & Solving Equations; Equations with Fractions; Applying Equations; Equations with Circles; Multi-Step Inequalities; Applying Inequalities	Circle; Pi; Radius; Diameter; Circumference; Negation; Is at Least; Not Less Than; Is at Most; Not More Than

	Pacing Guide	CCSS Addressed	Core Skills	Key Vocabulary
Unit 8: Roots & Radicals	14 Days	8.EE.A.2; 8.G.B.7	Understanding Roots; Multiplying and Simplifying Square Roots; Solving Rational Equations; Pythagorean Theorem; Special Right Triangles; Basic Trigonometry Ratios; Finding Missing Side of Right Triangle	Radical Sign; Radicand; Index; Pythagorean Theorem; Hypotenuse; Sine/Cosine/Tangent Ratios
Unit 9: Relations & Functions	15 Days	8.F.B.5; 8.F.B.4; 8.F.A.3; 8.F.A.2; 8.F.A.1	Coordinate Plane; Functions; Interpreting Solutions of Functions; Graphing Functions; Finding X&Y Intercepts; Finding Slope; Graphing using Slope-Intercept Form; Scatter Plots; Graphing Linear Inequalities	Coordinate/Cartesian Plane; Quadrants; Origin; Abscissa; Ordinate; Domain; Range; Relation; Function; Slope; X & Y Intercepts; Line of Best Fit; Interpolation; Extrapolation
Unit 10: Relationships in Geometry	12 Days	8.G.A.4; 8.G.A.2; 7.G.B.5	Angle Types and Relationships; Perpendicular and Parallel Lines; Identifying Polygons; Quadrilaterals & Perimeter; Congruent Polygons; Transformations; Similar Polygons;	Angles: Right, Acute, Obtuse, Straight, Adjacent, Vertical, Complimentary, Supplementary, Alternate Exterior, Alternate Interior, Corresponding; Polygon; Quadrilateral; Pentagon; Hexagon; Heptagon; Octagon; Nonagon; Decagon; Dodecagon; Regular Polygon; Triangles: Equilateral, Isosceles, Scalene; Parallel and Perpendicular Lines; Congruent Polygons; SSS; SAS; ASA; Convex; Concave; Transformation; Translation; Reflection; Rotation; Dilation; Similar Triangles
Unit 11: Area & Volume	12 Days	8.G.C.9; 7.G.B.6; 7.G.B.4; 6.G.A.2; 6.G.A.1	Area of Parallelograms; Area of Triangles & Trapezoids; Area of Circles; Surface Area of Prisms, Cylinders & Spheres; Volume of Prisms, Cylinders, Cones, Pyramids & Spheres	Area; Height; Radius; Diameter; Circumference; Surface Area; Prism; Cylinder; Sphere; Volume; Pyramid; Cone
Unit 12: Probability & Statistics	15 Days	7.SP.C.8; 7.SP.C.7; 7.SP.C.5; 7.SP.B.4; 7.SP.A.1	Mean, Median, Mode & Range; Box & Whisker Plots; Stem and Leaf Plots; Interpreting Graphs; Fundamental Principle of Counting; Factorials; Permutations; Combinations; Probability; Independent & Dependent Events	Mean; Median; Mode; Range; Box & Whisker Plot; Outlier; Lower Extreme; Lower and Upper Quartile; Upper Extreme; Innerquartile Range; Stem & Leaf Plot; Frequency Distribution; Histogram; Graphs: Bar, Line, Circle; Factorial; Permutation; Combination; Probability
Unit 13: Polynomials	12 Days	HSF-IF.A.2; HSF-IF.A.1; 8.F.B.5; 8.EE.A.1	Classifying Polynomials; Adding & Subtracting Polynomials; Multiplying Monomials; Monomials & Powers; Multiplying Binomials; Non-linear Functions	Monomial; Binomial; Trinomial; Degree; Standard Form; F.O.I.L.; Function Form; Vertical Line Test; Parabola
Bonus Unit: Sequences and Changing Bases	3 Days		Arithmetic Sequences and Sums; Base 10; Base 2	