

Algebra

	Lessons	Indiana Standards
1ST 6 WEEKS		
Chapter 1 (15 instructional days)	<ul style="list-style-type: none"> - 1-1 Variables and Expressions - 1-2 Order of Operations and Evaluating Expressions - 1-3 Real Numbers and the Number Line - 1-4 Properties of Real Numbers - 1-5 Adding and Subtracting Real Numbers - 1-6 Multiplying and Dividing Real Numbers - 1-7 The Distributive Property - 1-8 An Introduction to Equations - 1-9 Patterns, Equations, and Graphs 	<p>A1.1.1 Compare real number expressions.</p> <p>A1.1.3 Understand and use the distributive, associative, and commutative properties.</p>

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Chapter 2 (15 instructional days)	<ul style="list-style-type: none"> - 2-1 Solving One-Step Equations - 2-2 Solving Two-Step Equations - 2-3 Solving Multi-Step Equations - 2-4 Solving Equations with Variables on Both Sides - 2-5 Literal Equations and Formulas - 2-6 Ratios, Rates, and Conversions - 2-7 Solving Proportions - 2-8 Proportions and Similar Figures 	<p>A1.1.5 Use dimensional (unit) analysis to organize conversions and computations.</p> <p><u>A1.2.1 Solve linear equations.</u></p> <p><u>A1.2.2 Solve equations and formulas for a specified variable.</u></p> <p><u>A1.2.6 Solve word problems that involve linear equations, formulas, and inequalities.</u></p>
2ND 6 WEEKS		
Chapter 3 (10 instructional days)	<ul style="list-style-type: none"> - 3-1 Inequalities and Their Graphs - 3-2 Solving Inequalities Using Addition or Subtraction - 3-3 Solving Inequalities Using Multiplication or Division - 3-4 Solving Multi-Step Inequalities - 3-6 Compound Inequalities 	<p>A1.2.3 Find solution sets of linear inequalities when possible numbers are given for the variable.</p> <p><u>A1.2.4 Solve linear inequalities using properties of order.</u></p> <p>A1.2.5 Solve combined linear inequalities.</p> <p><u>A1.2.6 Solve word problems that involve linear equations, formulas, and inequalities.</u></p>

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Chapter 4 (10 instructional days)	<ul style="list-style-type: none"> - 4-1 Using Graphs to Relate Two Quantities - 4-2 Patterns and Linear Functions - 4-3 Patterns and Nonlinear Functions - 4-4 Graphing a Function Rule - 4-5 Writing a Function Rule - 4-6 Formalizing Relations and Functions 	<p>A1.3.1 Sketch a reasonable graph for a given relationship.</p> <p>A1.3.2 Interpret a graph representing a given situation.</p> <p>A1.3.3 Understand the concept of a function, decide if a given relation is a function, and link equations to functions.</p> <p>A1.3.4 Find the domain and range of a relation.</p>
3RD 6 WEEKS		
Chapter 5 (15 instructional days)	<ul style="list-style-type: none"> - 5-1 Rate of Change and Slope - 5-3 Slope-Intercept Form - 5-4 Point-Slope Form - 5-5 Standard Form - 5-6 Parallel and Perpendicular Lines - 5-7 Scatter Plots and Trend Lines 	<p><u>A1.4.1 Graph a linear equation.</u></p> <p><u>A1.4.2 Find the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line.</u></p> <p><u>A1.4.3 Write the equation of a line in slope-intercept form. Understand how the slope and y-intercept of the graph are related to the equation.</u></p> <p><u>A1.4.4 Write the equation of a line given appropriate information.</u></p> <p>A1.4.5 Write the equation of a line that models a data set and use the equation (or the graph of the equation) to make predictions. Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change.</p>

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Chapter 6 (15 instructional days)	<ul style="list-style-type: none"> - 6-1 Solving Systems by Graphing - 6-2 Solving Systems Using Substitution - 6-3 Solving Systems Using Elimination - 6-4 Applications of Linear Systems - 6-5 Linear Inequalities - 6-6 Systems of Linear Inequalities 	<p>A1.4.6 Graph a linear inequality in two variables.</p> <p>A1.5.1 Use a graph to estimate the solution of a pair of linear equations in two variables.</p> <p>A1.5.2 Use a graph to find the solution set of a pair of linear inequalities in two variables.</p> <p><u>A1.5.3 Understand and use the substitution method to solve a pair of linear equations in two variables.</u></p> <p><u>A1.5.4 Understand and use the addition or subtraction method to solve a pair of linear equations in two variables.</u></p> <p><u>A1.5.5 Understand and use multiplication with the addition or subtraction method to solve a pair of linear equations in two variables.</u></p> <p><u>A1.5.6 Use pairs of linear equations to solve word problems.</u></p>
4TH 6 WEEKS		
Chapter 7 (12 instructional days)	<ul style="list-style-type: none"> - 7-1 Zero and Negative Exponents - 7-3 Multiplying Powers with the Same Base - 7-4 More Multiplication Properties of Exponents - 7-5 Division Properties of Exponents - 7-6 Exponential Functions 	<p><u>A1.1.4 Use the laws of exponents for rational exponents.</u></p> <p><u>A1.6.2 Multiply and divide monomials.</u></p> <p><u>A1.6.3 Find powers and roots of monomials (only when the answer has an integer exponent).</u></p>

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Chapter 8 (16 instructional days)	<ul style="list-style-type: none">- 8-1 Adding and Subtracting Polynomials- 8-2 Multiplying and Factoring- 8-3 Multiplying Binomials- 8-4 Multiplying Special Cases- 8-5 Factoring $x^2 + bx + c$- 8-6 Factoring $ax^2 + bx + c$- 8-7 Factoring Special Cases- 8-8 Factoring by Grouping	<p><u>A1.6.1 Add and subtract polynomials.</u></p> <p><u>A1.6.4 Multiply polynomials.</u></p> <p>A1.6.5 Divide polynomials by monomials.</p> <p><u>A1.6.6 Find a common monomial factor in a polynomial.</u></p> <p><u>A1.6.7 Factor the difference of two squares and other quadratics.</u></p>
5TH 6 WEEKS		

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Chapter 9 (15 instructional days)	<ul style="list-style-type: none"> - 9-1 Quadratic Graphs and Their Properties - 9-2 Quadratic Functions - 9-3 Solving Quadratic Equations - 9-4 Factoring to Solve Quadratic Equations - 9-5 Completing the Square - 9-6 The Quadratic Formula and the Discriminant - 9-7 Linear, Quadratic, and Exponential Models 	<p>A1.6.8 Understand and describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression.</p> <p>A1.8.1 Graph quadratic, cubic, and radical equations.</p> <p><u>A1.8.2 Solve quadratic equations by factoring.</u></p> <p>A1.8.3 Solve quadratic equations in which a perfect square equals a constant.</p> <p>A1.8.4 Complete the square to solve quadratic equations.</p> <p>A1.8.5 Derive the quadratic formula by completing the square.</p> <p><u>A1.8.6 Solve quadratic equations using the quadratic formula.</u></p> <p>A1.8.7 Use quadratic equations to solve word problems.</p> <p>A1.8.9 Use graphing technology to find approximate solutions of quadratic and cubic equations.</p>
Chapter 10 (5 instructional days)	<ul style="list-style-type: none"> - 10-1 Pythagorean Theorem - 10-2 Simplifying Radicals - 10-4 Solving Radical Equations 	<p>A1.1.2 Simplify square roots using factors.</p>

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6TH 6 WEEKS

Chapter 11 (15 instructional days)	- 11-1 Simplifying Rational Expressions	A1.7.1 Simplify algebraic ratios.
	- 11-2 Multiplying and Dividing Rational Expressions	A1.7.2 Solve algebraic proportions.
	- 11-3 Dividing Polynomials	
	- 11-4 Adding and Subtracting	A1.8.8 Solve equations that contain radical expressions.
	- 11-5 Solving Rational Equations	

Bold/Underlined Font: Power Standards—These are standards that should be emphasized and reviewed throughout the year.