8th Grade Algebra Curriculum

Month	State Objective/ Section Number	Concepts Taught	Tests to complete	Problem Solving
June - August	6.11.04/1-1 6.11.04/1-2 6.11.13/1-4,5 6.11.13/1-5 6.11.11/1-3 6.11.11/1-6 8.11.02/1-7 6.11.01/1-8 6.11.02/1-9 6.11.05/2-1 6.11.10/Ch. 2 6.11.05/2-5 9.8.09 9.8.08 9.8.02 9.8.02 9.8.03 9.8.03 9.8.02 7.8.01 7.8.01 7.8.01 7.8.02 7.8.04 7.8.04 7.8.04 7.8.04	• Simplify algebraic expressions by using order of operations • Evaluate and simplify expressions • Translate verbal expressions into algebraic expressions and vice versa • Translate verbal sentences into equations • Construct an input/output table • Translating problems into equations • Applying algebra to solve basic problems • Graph and compare numbers using a number line • Absolute Value • Properties of real numbers • Perform the basic operations on real numbers • Distributive Property • Geometry Definitions Use algebra to determine supplementary and complementary angles Parallel Line Theory, Vertical Angles Polygon vs. Non-polygon Characteristics of polygons (Triangle, quadrilateral, pentagon….) Pythagorean Theorem Pythagorean Theorem problem solving Use algebra to determine missing angles of polygons Area/Perimeter – Memorize formulas Regular and irregular shapes Shaded regions Problem Solving Volume – B • h Shaded regions Problem Solving Surface Area – nets to visualize	Chapter 1 Chapter 2 Geometry Packet	Introduction to Algebraic/ISAT Problem Solving Plan Consecutive Integers

September	6.11.13/3-1/ 3-2 6.11.13/3-3 6.11.13/3-4 6.11.13/3-5 8.11.01/4-1,4-2 8.11.01/4-2 8.11.01/4-3,4-5 8.11.01/4-6 8.11.01/4-7	• Transforming Equations: Addition, Subtraction, Multiplication, Division • Using several transformations • Using equations to solve problems • Equations with the variable on both sides • Find powers of monomials • Adding and subtracting Polynomials • Multiply a polynomial by a monomial • Multiply polynomials • Transforming Formulas	Chapter 3 Chapter 4	Find Using Charts Cost, Income, and Value Rate Problems (wkst) Area Problems (wkst) Problems without solutions (wkst)
October/ November	8.11.01/5-1 8.11.01/5-2 8.11.01/5-3 8.11.01/5-3 8.11.01/5-4 8.11.01/Ch. 5 8.11.03/5-12,5-13 8.11.03/12-3	• Factoring Integers • Divide monomials • Finding the GCF of monomials • Monomials factors of polynomials • Recognize and simplify special products $(a + b)(a – b)$ • Rewrite an expression in factored form (i.e. grouping, difference of squares, sum/difference of cubes, perfect square trinomials, trinomials, sum/difference of two cubes) • Solve equations using factoring • Quadratic Formula	Chapter 5	
December	8.11.01/6-1 8.11.01/6-2 8.11.01/6-3 8.11.01/6-7 8.11.01/6-4,6-5	• Simplify algebraic fractions • Multiply algebraic fractions • Divide algebraic fractions • Divide polynomials • Basic addition/subtraction of fractions by introducing the LCD	Chapter 6	

January	6.11.17/7-1 6.11.17/7-2 6.11.17/7-3 6.11.17/7-4 6.11.18/7-5 6.11.18/7-6 6.11.017-9	• Solve problems involving ratios • Solve problems using proportions • Solve equations with fractional coefficients • Solve fractional equations • Work with percents and decimals • Solve problems involving percents • Negative exponents	Chapter 7	Stock and Bonds Mixture (wkst) Speed Traps (wkst)
February/ March	8.11.07/8-2 8.11.08/8-2 8.11.07/8-2 8.11.09/8-3 8.11.08/8-4 8.11.16/8-5 8.11.10/8-5 8.11.10/8-6 8.11.11/8-7 8.11.11/8-7 8.11.118-8 8.11.11/8-8 8.11.11/8-8	• Introduction to linear functions • Plot points in a coordinate plane • Graph horizontal and vertical lines • Graph a linear equation from a table or list of values • Introduce slope of a line • Graph using intercepts, slope-intercept form and standard form, including parallel and perpendicular lines • Write a linear equation given the point and the slope of two points in a variety of forms (i.e., point-slope or standard form) • Write the equation of a line either parallel or perpendicular to a given line given one point • Introduction to quadratic funtions • Domain vs. Range of functions • F(x), f (g(x)), solve f(x) = 0, roots • Minimum point vs. maximum point • Vertex of a parabola • Axis of symmetry • ISAT Review	Chapter 8	Two variables General problems Current (wkst) Using a graphing calculator (wkst) Parabolas and Basketballs (wkst

April	8.11.22/Ch. 9 8.11.22 8.11.16/10-2 8.11.1610-4 8.11.1710-5,10-6	• Solve a system of linear equations by graphing, substitution, or elimination • Model and solve a real-life situation using a linear system • Solve problems that involve inequalities • Find the solution sets of combined inequalities • Solve equations and inequalities involving absolute value	Chapter 9 Chapter 10	Wind and Water Current Problems Puzzle Problems
May	6.11.02/11-1 6.11.02/11-3 6.11.0211-4 8.11.0111-5 8.11.01/11-7 8.11.01/11-8 8.11.01/11-9 6.11.13/11-10 8.11.22/Extra 8.11.01/12-1	• Properties of rational numbers • Rational square roots • Irrational square roots • Square roots of variable expressions • Multiply/Divide/Simplifying radicals • Add/Subtract radicals • Multiply binomials containing radicals • Solve radical equations • Fractional Exponents • Solve perfect squares	Chapter 11	Problem solving with inequalities (wkst)