

Algebra 1

Standards-based Skills Worksheet

Student: _____

Date: _____

Completed by (name): _____

Position: _____

School Division: _____

<p>1. Review SOL strand for</p> <p>EXPRESSIONS AND OPERATIONS</p> <p>STANDARD A.1</p> <p>STANDARD A.2</p> <p>STANDARD A.3</p>	<p>2. Review data on student performance and indicate all data sources analyzed to assess performance in this strand:</p> <p><input type="checkbox"/> Present Level of Performance (PLOP)</p> <p><input type="checkbox"/> Prior SOL data</p> <p><input type="checkbox"/> Standardized test data</p> <p><input type="checkbox"/> Classroom assessments</p> <p><input type="checkbox"/> Teacher observations</p>
--	---

<p>3. Check the areas that will require specially designed instruction critical to meeting the standard.</p>
<p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Translate verbal quantitative situations into algebraic expressions and vice versa. <input type="checkbox"/> Model real-world situations with algebraic expressions in a variety of representations (concrete, pictorial, symbolic, verbal). <input type="checkbox"/> Evaluate algebraic expressions for a given replacement set to include rational numbers. <input type="checkbox"/> Evaluate expressions that contain absolute value, square roots, and cube roots. <p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Simplify monomial expressions and ratios of monomial expressions in which the exponents are integers, using the laws of exponents. <input type="checkbox"/> Model sums, differences, products, and quotients of polynomials with concrete objects and their related pictorial representations. <input type="checkbox"/> Relate concrete and pictorial manipulations that model polynomial operations to their corresponding symbolic representations. <input type="checkbox"/> Find sums and differences of polynomials. <input type="checkbox"/> Find products of polynomials. The factors will have no more than five total terms (i.e. $(4x+2)(3x+5)$ represents four terms and $(x+1)(2x^2+x+3)$ represents five terms). <input type="checkbox"/> Find the quotient of polynomials, using a monomial or binomial divisor, or a completely factored divisor. <input type="checkbox"/> Factor completely first- and second-degree polynomials with integral coefficients. <input type="checkbox"/> Identify prime polynomials. <input type="checkbox"/> Use the x-intercepts from the graphical representation of the polynomial to determine and confirm its factors. <p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Express square roots of a whole number in simplest form. <input type="checkbox"/> Express the cube root of a whole number in simplest form. <input type="checkbox"/> Express the principal square root of a monomial algebraic expression in simplest form where variables are assumed to have positive values.

<p>4. Is/Are standard-based goal(s) needed?</p> <p><input type="checkbox"/> YES Address areas of need in PLOP</p>	<p><input type="checkbox"/> NO Check one or more justifications:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Accommodations Available (specify): <input type="checkbox"/> Area of Strength in PLOP <input type="checkbox"/> New Content <input type="checkbox"/> Other (Specify):
---	--

5. Notes Supporting Data Analysis

<p>1. Review SOL strand for</p> <p>EQUATIONS AND INEQUALITIES STANDARD A.4-6</p>	<p>2. Review data on student performance and indicate all data sources analyzed to assess performance in this strand:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Present Level of Performance (PLOP) <input type="checkbox"/> Prior SOL data <input type="checkbox"/> Standardized test data <input type="checkbox"/> Classroom assessments <input type="checkbox"/> Teacher observations
--	--

<p>3. Check the areas that will require specially designed instruction critical to meeting the standard.</p>	
<p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Solve a literal equation (formula) for a specified variable. <input type="checkbox"/> Simplify expressions and solve equations, using the field properties of the real numbers and properties of equality to justify simplification and solution. <input type="checkbox"/> Solve quadratic equations. <input type="checkbox"/> Identify the roots or zeros of a quadratic function over the real number system as the solution(s) to the quadratic equation that is formed by setting the given quadratic expression equal to zero. <input type="checkbox"/> Solve multistep linear equations in one variable. <input type="checkbox"/> Confirm algebraic solutions to linear and quadratic equations, using a graphing calculator. <input type="checkbox"/> Given a system of two linear equations in two variables that has a unique solution, solve the system by substitution or elimination to find the ordered pair which satisfies both equations. <input type="checkbox"/> Given a system of two linear equations in two variables that has a unique solution, solve the system graphically by identifying the point of intersection. <input type="checkbox"/> Determine whether a system of two linear equations has one solution, no solution, or infinite solutions. <input type="checkbox"/> Write a system of two linear equations that models a real-world situation. <input type="checkbox"/> Interpret and determine the reasonableness of the algebraic or graphical solution of a system of two linear equations that models a real-world situation. <p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Solve multistep linear inequalities in one variable. <input type="checkbox"/> Justify steps used in solving inequalities, using axioms of inequality and properties of order that are valid for the set of real numbers. <input type="checkbox"/> Solve real-world problems involving inequalities. <input type="checkbox"/> Solve systems of linear inequalities algebraically and graphically. <p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Graph linear equations and inequalities in two variables, including those that arise from a variety of real-world situations. <input type="checkbox"/> Use the parent function $y = x$ and describe transformations defined by changes in the slope or y-intercept. <input type="checkbox"/> Find the slope of the line, given the equation of a linear function. <input type="checkbox"/> Find the slope of a line, given the coordinates of two points on the line. <input type="checkbox"/> Find the slope of a line, given the graph of a line. <input type="checkbox"/> Recognize and describe a line with a slope that is positive, negative, zero, or undefined. <input type="checkbox"/> Use transformational graphing to investigate effects of changes in equation parameters on the graph of the equation. <input type="checkbox"/> Write an equation of a line when given the graph of a line. <input type="checkbox"/> Write an equation of a line when given two points on the line whose coordinates are integers. <input type="checkbox"/> Write an equation of a line when given the slope and a point on the line whose coordinates are integers. <input type="checkbox"/> Write an equation of a vertical line as $x = a$. <input type="checkbox"/> Write the equation of a horizontal line as $y = c$. 	

<p>4. Is/Are standard-based goal(s) needed?</p> <p><input type="checkbox"/> YES Address areas of need in PLOP</p>	<p><input type="checkbox"/> NO Check one or more justifications:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Accommodations Available (specify): <input type="checkbox"/> Area of Strength in PLOP <input type="checkbox"/> New Content <input type="checkbox"/> Other (Specify):
---	--

5. Notes Supporting Data Analysis

<p>1. Review SOL strand for</p> <p>FUNCTIONS STANDARD A.7, A.8</p>	<p>2. Review data on student performance and indicate all data sources analyzed to assess performance in this strand:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Present Level of Performance (PLOP) <input type="checkbox"/> Prior SOL data <input type="checkbox"/> Standardized test data <input type="checkbox"/> Classroom assessments <input type="checkbox"/> Teacher observations
---	--

<p>3. Check the areas that will require specially designed instruction critical to meeting the standard.</p>	
<p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Determine whether a relation, represented by a set of ordered pairs, a table, or a graph is a function. <input type="checkbox"/> Identify the domain, range, zeros, and intercepts of a function presented algebraically or graphically. <input type="checkbox"/> For each x in the domain of f, find $f(x)$. <input type="checkbox"/> Represent relations and functions using concrete, verbal, numeric, graphic, and algebraic forms. Given one representation, students will be able to represent the relation in another form. <input type="checkbox"/> Detect patterns in data and represent arithmetic and geometric patterns algebraically. <p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Given a situation, including a real-world situation, determine whether a direct variation exists. <input type="checkbox"/> Given a situation, including a real-world situation, determine whether an inverse variation exists. <input type="checkbox"/> Write an equation for a direct variation, given a set of data. <input type="checkbox"/> Write an equation for an inverse variation, given a set of data. <input type="checkbox"/> Graph an equation representing a direct variation, given a set of data. 	

<p>4. Is/Are standard-based goal(s) needed?</p> <p><input type="checkbox"/> YES Address areas of need in PLOP</p>	<p><input type="checkbox"/> NO Check one or more justifications:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Accommodations Available (specify): <input type="checkbox"/> Area of Strength in PLOP <input type="checkbox"/> New Content <input type="checkbox"/> Other (Specify):
---	--

5. Notes Supporting Data Analysis

<p>1. Review SOL strand for</p> <p>STATISTICS STANDARD A.9 STANDARD A.10 STANDARD A.11</p>	<p>2. Review data on student performance and indicate all data sources analyzed to assess performance in this strand:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Present Level of Performance (PLOP) <input type="checkbox"/> Prior SOL data <input type="checkbox"/> Standardized test data <input type="checkbox"/> Classroom assessments <input type="checkbox"/> Teacher observations
--	--

<p>3. Check the areas that will require specially designed instruction critical to meeting the standard.</p>	
<p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Analyze descriptive statistics to determine the implications for the real-world situations from which the data derive. <input type="checkbox"/> Given data, including data in a real-world context, calculate and interpret the mean absolute deviation of a data set. <input type="checkbox"/> Given data, including data in a real-world context, calculate variance and standard deviation of a data set and interpret the standard deviation. <input type="checkbox"/> Given data, including data in a real-world context, calculate and interpret z-scores for a data set. <input type="checkbox"/> Explain ways in which standard deviation addresses dispersion by examining the formula for standard deviation. <input type="checkbox"/> Compare and contrast mean absolute deviation and standard deviation in a real-world context. <p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Compare, contrast, and analyze data, including data from real-world situations displayed in box-and-whisker plots. <p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> <input type="checkbox"/> Write an equation for a curve of best fit, given a set of no more than twenty data points in a table, a graph, or real-world situation. <input type="checkbox"/> Make predictions about unknown outcomes, using the equation of the curve of best fit. <input type="checkbox"/> Design experiments and collect data to address specific, real-world questions. <input type="checkbox"/> Evaluate the reasonableness of a mathematical model of a real-world situation. 	

<p>4. Is/Are standard-based goal(s) needed?</p> <p><input type="checkbox"/> YES Address areas of need in PLOP</p>	<p><input type="checkbox"/> NO Check one or more justifications:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Accommodations Available (specify): <input type="checkbox"/> Area of Strength in PLOP <input type="checkbox"/> New Content <input type="checkbox"/> Other (Specify):
---	--

5. Notes Supporting Data Analysis