

Subject:	Algebra 1	Year:	2016/17
Unit:	Fundamentals of Algebra (FA)	Teacher:	Sarah Carter

Oklahoma Academic Standards

A1.A.3 Generate equivalent algebraic expressions and use algebraic properties to evaluate expressions and arithmetic and geometric sequences.

A1.A.3.4 Evaluate linear, absolute value, rational, and radical expressions. Include applying a nonstandard operation such as $a \odot b = 2a + b$.

Old Standards (PASS)

Standard 1: Number Sense and Algebraic Operations - The student will use expressions and equations to model number relationships.

1. *Equations and Formulas*
 - a. *Translate word phrases and sentences into expressions and equations and vice versa.*
2. *Expressions*
 - a. *Simplify and evaluate linear, absolute value, rational and radical expressions.*

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
FA1	I can evaluate linear, absolute value, rational, and radical expressions. (Includes Non-Standard Operations)		
FA2	I can rewrite expressions, equations, and inequalities by combining like terms.		
FA3	I can rewrite expressions, equations, and inequalities by applying the distributive property.		
FA4	I can translate between algebraic and written expressions, equations, and inequalities.		
FA5	I can identify the parts of an expression, equation, or inequality.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Solving Equations (SE)	Teacher:	Sarah Carter

Oklahoma Academic Standards

A1.A.1 Represent and solve mathematical and real-world problems using linear equations, absolute value equations, and systems of equations; interpret solutions in the original context.

A1.A.1.1 Use knowledge of solving equations with rational values to represent and solve mathematical and real-world problems (e.g., angle measures, geometric formulas, science, or statistics) and interpret the solutions in the original context.

A1.A.1.2 Solve absolute value equations and interpret the solutions in the original context.

A1.A.3 Generate equivalent algebraic expressions and use algebraic properties to evaluate expressions and arithmetic and geometric sequences.

A1.A.3.1 Solve equations involving several variables for one variable in terms of the others.

Old Standards (PASS)

Standard 1: Number Sense and Algebraic Operations - The student will use expressions and equations to model number relationships.

1. Equations and Formulas

- a. Solve literal equations involving several variables for one variable in terms of the others.*
- b. Use the formulas from measurable attributes of geometric models (perimeter, circumference, area and volume), science, and statistics to solve problems within an algebraic context.*
- c. Solve two-step and three-step problems using concepts such as rules of exponents, rate, distance, ratio and proportion, and percent.*

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
SE1	I can solve linear equations with variables on one side of the equal sign.		
SE2	I can solve linear equations with variables on both sides of the equal sign.		
SE3	I can solve absolute value equations.		
SE4	I can solve equations involving several variables for one variable in terms of the others.		
SE5	I can solve real-world problems by writing my own equation or using a given equation.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Relations and Functions (RF)	Teacher:	Sarah Carter

Oklahoma Academic Standards

A1.A.4 Analyze mathematical change involving linear equations in real-world and mathematical problems.

A1.A.4.2 Solve mathematical and real-world problems involving lines that are parallel, perpendicular, horizontal, or vertical.

A1.A.4.4 Translate between a graph and a situation described qualitatively.

A1.F.1 Understand functions as descriptions of covariation (how related quantities vary together) in real-world and mathematical problems.

A1.F.1.1 Distinguish between relations and functions.

A1.F.1.2 Identify the dependent and independent variables as well as the domain and range given a function, equation, or graph. Identify restrictions on the domain and range in real-world contexts.

A1.F.1.4 Given a graph modeling a real-world situation, read and interpret the linear piecewise function (excluding step functions).

A1.F.3 Represent functions in multiple ways and use the representation to interpret real-world and mathematical problems.

A1.F.3.1 Identify and generate equivalent representations of linear equations, graphs, tables, and real-world situations.

A1.F.3.2 Use function notation; evaluate a function, including nonlinear, at a given point in its domain algebraically and graphically. Interpret the results in terms of real-world and mathematical problems.

Old Standards (PASS)

Standard 2: Relations and Functions - The student will use relations and functions to model number relationships.

1. *Relations and Functions*
 - a. *Distinguish between linear and nonlinear data.*
 - b. *Distinguish between relations and functions.*
 - c. *Identify dependent and independent variables, domain and range.*
 - d. *Evaluate a function using tables, equations or graphs.*
2. *Linear Equations and Graphs*
 - e. *Match equations to a graph, table, or situation and vice versa.*

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
RF1	I can create a story to describe a graph and create a graph to describe a story.		
RF2	I can generate equivalent representations of a relation.		
RF3	I can determine if a relation is a function or not a function and justify my answer.		
RF4	I can find the domain and range of a function and identify restrictions in real-life contexts.		
RF5	I can evaluate functions and interpret the results in real-life contexts.		
RF6	I can identify the independent and dependent variables in a situation.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Linear Graphs (LG)	Teacher:	Sarah Carter

Oklahoma Academic Standards

A1.A.4 Analyze mathematical change involving linear equations in real-world and mathematical problems.

A1.A.4.1 Calculate and interpret slope and the x- and y-intercepts of a line using a graph, an equation, two points, or a set of data points to solve real-world and mathematical problems.

A1.A.4.2 Solve mathematical and real-world problems involving lines that are parallel, perpendicular, horizontal, or vertical.

A1.A.4.3 Express linear equations in slope-intercept, point-slope, and standard forms and convert between these forms. Given sufficient information (slope and y-intercept, slope and one-point on the line, two points on the line, x- and y-intercept, or a set of data points), write the equation of a line.

A1.F.2 Recognize functions and understand that families of functions are characterized by their rate of change.

A1.F.2.1 Distinguish between linear and nonlinear (including exponential) functions arising from real-world and mathematical situations that are represented in tables, graphs, and equations. Understand that linear functions grow by equal intervals and that exponential functions grow by equal factors over equal intervals.

A1.F.2.2 Recognize the graph of the functions $f(x) = x$ and $f(x) = |x|$ and predict the effects of transformations [$f(x + c)$ and $f(x) + c$, where c is a positive or negative constant] algebraically and graphically using various methods and tools that may include graphing calculators.

Old Standards (PASS)

Standard 2: Relations and Functions - The student will use relations and functions to model number relationships.

1. Linear Equations and Graphs

a. Solve linear equations by graphing or using properties of equality.

b. Recognize the parent graph of the functions $y = k$, $y = x$, $y = |x|$, and predict the effects of transformations on the parent graph.

c. Slope

i. Calculate the slope of a line using a graph, an equation, two points or a set of data points.

ii. Use the slope to differentiate between lines that are parallel, perpendicular, horizontal, or vertical.

iii. Interpret the slope and intercepts within the context of everyday life (e.g., telephone charges based on base rate [y-intercept] plus rate per minute [slope]).

Skill List

		Initial Score	Update Score
LG1	I can graph a linear equation by making an input/output table.		
LG2	I can calculate and interpret slope and intercepts from a graph.		
LG3	I can calculate and interpret slope and intercepts from a table or two points.		
LG4	I can calculate and interpret slope and intercepts from an equation.		
LG5	I can determine if a function is linear or non-linear. If the function is non-linear, I can determine if it is exponential.		
LG6	I can convert between slope-intercept, point-slope, and standard forms of equations.		
LG7	I can classify lines as parallel, perpendicular, or neither.		
LG8	I can predict how a graph of a linear function will be transformed when the equation is changed.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Writing Linear Equations (WL)	Teacher:	Sarah Carter

Oklahoma Academic Standards

A1.A.4 Analyze mathematical change involving linear equations in real-world and mathematical problems.

A1.A.4.2 Solve mathematical and real-world problems involving lines that are parallel, perpendicular, horizontal, or vertical.

A1.A.4.3 Express linear equations in slope-intercept, point-slope, and standard forms and convert between these forms. Given sufficient information (slope and y -intercept, slope and one-point on the line, two points on the line, x - and y -intercept, or a set of data points), write the equation of a line.

A1.F.1 Understand functions as descriptions of covariation (how related quantities vary together) in real-world and mathematical problems.

A1.F.1.3 Write linear functions, using function notation, to model real-world and mathematical situations.

Old Standards (PASS)

Standard 2: Relations and Functions - The student will use relations and functions to model number relationships.

2. *Linear Equations and Graphs*

d. *Develop the equation of a line and graph linear relationships given the following: slope and y -intercept, slope and one point on the line, two points on the line, x -intercept and y -intercept, a set of data points.*

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
WL1	I can write a linear equation given a graph and use the equation to solve problems.		
WL2	I can write a linear equation given the slope and a point on the line (including an intercept) and use the equation to solve problems.		
WL3	I can write a linear equation given a table or two points on the line (including intercepts) and use the equation to solve problems.		
WL4	I can write a linear equation given a situation and use the equation to solve problems.		
WL5	I can write a linear equation that is parallel or perpendicular to another equation and meets specific criteria.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Absolute Value Graphs (AV)	Teacher:	Sarah Carter

Oklahoma Academic Standards	
A1.F.2 Recognize functions and understand that families of functions are characterized by their rate of change.	
A1.F.2.2 Recognize the graph of the functions $f(x) = x$ and $f(x) = x $ and predict the effects of transformations [$f(x + c)$ and $f(x) + c$, where c is a positive or negative constant] algebraically and graphically using various methods and tools that may include graphing calculators.	
Old Standards (PASS)	
<i>Standard 2: Relations and Functions - The student will use relations and functions to model number relationships.</i>	
2. <i>Linear Equations and Graphs</i>	
b. <i>Recognize the parent graph of the functions $y = k$, $y = x$, $y = x$, and predict the effects of transformations on the parent graph.</i>	

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
AV1	I can graph an absolute value equation by making an input/output table.		
AV2	I can find the slopes, vertex, and orientation of an absolute value graph given a table.		
AV3	I can find the slopes, vertex, and orientation of an absolute value graph given an equation.		
AV4	I can write the equation of an absolute value graph given the slopes, vertex, and orientation.		
AV5	I can predict how an absolute value graph will be transformed when the equation is changed.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Inequalities (IN)	Teacher:	Sarah Carter

Oklahoma Academic Standards

A1.A.2 Represent and solve real-world and mathematical problems using linear inequalities, compound inequalities and systems of linear inequalities; interpret solutions in the original context.

A1.A.2.1 Represent relationships in various contexts with linear inequalities; solve the resulting inequalities, graph on a coordinate plane, and interpret the solutions.

A1.A.2.2 Represent relationships in various contexts with compound and absolute value inequalities and solve the resulting inequalities by graphing and interpreting the solutions on a number line.

Old Standards (PASS)

Standard 2: Relations and Functions - The student will use relations and functions to model number relationships.

3. *Linear Inequalities and Graphs*

a. *Solve linear inequalities by graphing or using properties of inequalities.*

b. *Match inequalities (with 1 or 2 variables) to a graph, table, or situation and vice versa.*

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
IN1	I can represent a relationship with a simple one-variable inequality, solve the inequality, and graph and interpret the solution.		
IN2	I can represent relationships with a compound inequality, solve the inequality, and graph and interpret the solution.		
IN3	I can represent a relationship with an absolute value inequality, solve the inequality, and graph and interpret the solution.		
IN4	I can represent a relationship with a two-variable inequality, solve the inequality, and graph and interpret the solution.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Systems of Equations and Inequalities (SY)	Teacher:	Sarah Carter

Oklahoma Academic Standards

A1.A.1 Represent and solve mathematical and real-world problems using linear equations, absolute value equations, and systems of equations; interpret solutions in the original context.

A1.A.1.3 Analyze and solve real-world and mathematical problems involving systems of linear equations with a maximum of two variables by graphing (may include graphing calculator or other appropriate technology), substitution, and elimination. Interpret the solutions in the original context.

A1.A.2 Represent and solve real-world and mathematical problems using linear inequalities, compound inequalities and systems of linear inequalities; interpret solutions in the original context.

A1.A.2.3 Solve systems of linear inequalities with a maximum of two variables; graph and interpret the solutions on a coordinate plane.

Old Standards (PASS)

Standard 2: Relations and Functions - The student will use relations and functions to model number relationships.

4. Solve a system of linear equations by graphing, substitution or elimination.

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
SY1	I can write a system of equations or inequalities to represent a given situation.		
SY2	I can solve systems of equations graphically and interpret the solution.		
SY3	I can solve systems of equations algebraically and interpret the solution.		
SY4	I can solve systems of inequalities and graph and interpret the solution on a coordinate plane.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Polynomials (PO)	Teacher:	Sarah Carter

Oklahoma Academic Standards

A1.A.3 Generate equivalent algebraic expressions and use algebraic properties to evaluate expressions and arithmetic and geometric sequences.

A1.A.3.2 Simplify polynomial expressions by adding, subtracting, or multiplying.

A1.A.3.3 Factor common monomial factors from polynomial expressions and factor quadratic expressions with a leading coefficient of 1.

A1.F.3 Represent functions in multiple ways and use the representation to interpret real-world and mathematical problems.

A1.F.3.3 Add, subtract, and multiply functions using function notation.

Old Standards (PASS)

Standard 1: Number Sense and Algebraic Operations - The student will use expressions and equations to model number relationships.

2. *Expressions*

b. *Simplify polynomials by adding, subtracting or multiplying.*

c. *Factor polynomial expressions.*

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
PO1	I can name polynomials according to their degree and number of terms.		
PO2	I can add and subtract polynomials (including when written in function notation).		
PO3	I can multiply polynomials (including when written in function notation).		
PO4	I can factor out the GCF of a polynomial.		
PO5	I can fully factor a polynomial.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Radicals (RA)	Teacher:	Sarah Carter

Oklahoma Academic Standards	
A1.N.1 Extend the understanding of number and operations to include square roots and cube roots.	
A1.N.1.1 Write square roots and cube roots of monomial algebraic expressions in simplest radical form.	
A1.N.1.2 Add, subtract, multiply, and simplify square roots of monomial algebraic expressions and divide square roots of whole numbers, rationalizing the denominator when necessary.	
Old Standards (PASS)	
<i>Standard 1: Number Sense and Algebraic Operations - The student will use expressions and equations to model number relationships.</i>	
2. <i>Expressions</i>	
a. <i>Simplify and evaluate linear, absolute value, rational and radical expressions.</i>	

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
RA1	I can simplify radical expressions.		
RA2	I can add and subtract radical expressions.		
RA3	I can multiply radical expressions.		
RA4	I can divide radical expressions, rationalizing the denominator when necessary.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Sequences (SQ)	Teacher:	Sarah Carter

Oklahoma Academic Standards
A1.A.3 Generate equivalent algebraic expressions and use algebraic properties to evaluate expressions and arithmetic and geometric sequences.
A1.A.3.5 Recognize that arithmetic sequences are linear using equations, tables, graphs, and verbal descriptions. Use the pattern, find the next term.
A1.A.3.6 Recognize that geometric sequences are exponential using equations, tables, graphs and verbal descriptions. Given the formula $f(x) = a(r)^x$, find the next term and define the meaning of a and r within the context of the problem.
Old Standards (PASS)
None

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
SQ1	I can classify a sequence as arithmetic, geometric, or neither and find the next term in the sequence.		
SQ2	I can recognize that arithmetic sequences are linear and write an equation to find any term in the sequence.		
SQ3	I can recognize that geometric sequences are exponential and write an equation to find the next term in the sequence.		

Subject:	Algebra 1	Year:	2016/17
Unit:	Data Analysis and Probability (DP)	Teacher:	Sarah Carter

Oklahoma Academic Standards

A1.D.1 Display, describe, and compare data. For linear relationships, make predictions and assess the reliability of those predictions.

A1.D.1.1 Describe a data set using data displays, describe and compare data sets using summary statistics, including measures of central tendency, location, and spread. Know how to use calculators, spreadsheets, or other appropriate technology to display data and calculate summary statistics.

A1.D.1.2 Collect data and use scatterplots to analyze patterns and describe linear relationships between two variables. Using graphing technology, determine regression lines and correlation coefficients; use regression lines to make predictions and correlation coefficients to assess the reliability of those predictions.

A1.D.1.3 Interpret graphs as being discrete or continuous.

A1.D.2 Calculate probabilities and apply probability concepts.

A1.D.2.1 Select and apply counting procedures, such as the multiplication and addition principles and tree diagrams, to determine the size of a sample space (the number of possible outcomes) and to calculate probabilities.

A1.D.2.2 Describe the concepts of intersections, unions, and complements using Venn diagrams to evaluate probabilities. Understand the relationships between these concepts and the words AND, OR, and NOT.

A1.D.2.3 Calculate experimental probabilities by performing simulations or experiments involving a probability model and using relative frequencies of outcomes.

A1.D.2.4 Apply probability concepts to real-world situations to make informed decisions.

Old Standards (PASS)

Standard 3: Data Analysis, Probability and Statistics - The student will use data analysis, probability and statistics to formulate and justify predictions from a set of data.

1. *Data Analysis*
 - a. *Translate from one representation of data to another and understand that the data can be represented using a variety of tables, graphs, or symbols and that different modes of representation often convey different messages.*
 - b. *Make valid inferences, predictions, and/or arguments based on data from graphs, tables, and charts.*
 - c. *Solve two-step and three-step problems using concepts such as probability and measures of central tendency.*
2. *Collect data involving two variables and display on a scatter plot; interpret results using a linear model/equation and identify whether the model/equation is a line best fit for the data.*

Skill List

		<i>Initial Score</i>	<i>Update Score</i>
DP1	I can determine if data is discrete or continuous.		
DP2	I can create a data display for a set of data and use it to describe the data set.		
DP3	I can compare data sets using summary statistics.		
DP4	I can create scatterplots, determine regression and correlation, and use these to make predictions and assess the reliability of the prediction.		
DP5	I can use tree diagrams and counting procedures to determine the size of a sample space and to calculate probabilities.		
DP6	I can use Venn Diagrams to evaluate probabilities.		
DP7	I can perform a simulation or experiment to calculate experimental probabilities.		
DP8	I can apply probability concepts to real-world situations to make informed decisions.		