

Wyoming Department of Education Required Virtual Education Course Syllabus

Washakie County School District # 1

Program Name	Washakie No. 1 Online	Content Area	MA
Course ID	W02051G0.5012	Grade Level	9-12
Course Name	WOL-Pre-Algebra A	# of Credits	0.5
SCED Code	02051G0.5012	Curriculum Type	K12 Inc

COURSE DESCRIPTION

Generally offered first semester. In this course, students learn computational and problem-solving skills and the language of algebra. Students translate word phrases and sentences into mathematical expressions; analyze geometric figures; solve problems involving percentages, ratios, and proportions; graph different kinds of equations and inequalities; calculate statistical measures and probabilities; apply the Pythagorean theorem; and explain strategies for solving real-world problems. The textbook provides students with a ready reference and explanations that supplement the online material. Online lessons provide demonstrations of concepts, as well as interactive problems with contextual feedback.

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
A-CED.1	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. Appendix A specification: Linear, and exponential (integer inputs only).
A-CED.4	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. Appendix A specification: Linear, and exponential (integer inputs only).
A-REI.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
A-REI.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
A-SSE.1a	Interpret expressions that represent a quantity in terms of its context.★ Interpret parts of an expression, such as terms, factors, and coefficients.
G-CO.1	Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
G-CO.4	Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
G-CO.5	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.
G-CO.9	Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.
G-CO.10	Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.
N-Q.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Appendix A specification: Foundation for work with expressions, equations and functions.
N.RN.1	Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $[5^{1/3}]^3 = 5^{[(1/3) \times 3]}$ to hold, so $[5^{1/3}]^3$ must equal 5.

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UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
The Basics Semester Introduction		Identify a solution to a word problem when given a replacement set.
Unit 1: The Basics Order of Operations Variable Expressions Related Equations Problem Solving Writing Expressions for Word Phrases Comparing Expressions, Part 1 Comparing Expressions, Part 2 Replacement Sets Unit Review Unit Test	A-SSE.1a A-REI.1	Determine whether or not a value is a solution of an open sentence Evaluate a variable expression with one or more unknowns. Find the solutions to an equation or inequality with a given replacement set. Use a less than, greater than, or equality symbol to compare two numerical expressions. Use inverse operations to write a related equation. Use inverse operations to solve an equation. Use inverse operations to write a related equation. Use inverse operations to write a related equation or inequality. Use inverse operations to solve an equation or inequality. Use the order of operations to simplify a numerical expression. Write a variable expression for a word phrase. Evaluate a variable expression. Simplify a numerical expression Write a variable expression for a word phrase. Write a word phrase for a variable expression. Write an equation for a word sentence. Write an equation for a word problem. Identify a solution to a word problem. Solve a word problem using related equations. Identify a solution to a word problem Review the concepts and skills learned in the unit.
Unit 2: Addition and Subtraction Integers on a Number Line, Part 1 Subtracting Decimals, Part 1 Subtracting Decimals, Part 2 Addition and Subtraction Properties Equations Involving Addition and Subtraction Addition and Subtraction Applications Integers on a Number Line, Part 1 Integers on a Number Line, Part 2 Adding Integers Subtracting Integers Discuss: Integers Decimals on a Number Line Adding Decimals, Part 1 Adding Decimals, Part 2 Unit Review Unit Test	A-REI.1	Add positive and negative integers. Simplify and evaluate expressions involving sums and differences of integers. Solve a simple equation and inequality involving absolute value. Evaluate simple expressions for integer values of the variables. Compare expressions involving addition of integers. Add positive and negative integers. Subtract integers. Determine the integer coordinate of a point on a number line. Find the opposite of an integer. Graph positive and negative integers on a number line. Compare positive and negative integers. Graph and compare positive and negative integers. Find the absolute value of an integer. Solve a simple equation involving absolute value. Solve an inequality involving absolute value. Solve a simple equation and inequality involving absolute value. Find the opposite of an integer. Subtract integers. Evaluate expressions involving a difference of integers. Simplify and evaluate expressions involving sums and differences of integers. Graph positive and negative decimals on a number line. Determine the decimal coordinate of a point on a number line. Graph positive and negative decimals on a number line. Compare positive and negative decimals. Put a set of decimals in order. Compare and order positive and negative decimals. Simplify an expression involving addition of positive and negative numbers. Evaluate an expression involving addition of positive and negative decimals. Simplify expressions involving addition of positive and negative

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		decimals. Graph positive and negative decimals on a number line. Find the absolute value of an integer. Simplify an expression involving subtraction of positive and negative numbers. Evaluate an expression involving subtraction of positive and negative numbers. Simplify expressions involving addition of positive and negative decimals. Compare and order positive and negative decimals. Compare two expressions involving addition of positive and negative decimals. Use transformations to solve addition and subtraction equations involving positive and negative numbers. Use related equations to solve an equation. Solve a word problem involving addition of positive and negative numbers. Write an equation that can be used to solve a word problem involving addition and subtraction of positive and negative numbers. Solve a word problem involving addition and subtraction of positive and negative numbers. Solve a word problem involving addition of decimals. Graph positive and negative decimals on a number line. Solve a word problem involving addition of positive and negative numbers. Write an equation that can be used to solve a word problem involving subtraction of positive and negative numbers. Solve an equation involving subtraction of positive and negative decimals. Solve a word problem involving a difference of decimals. Use an addition property to evaluate an expression. Identify the commutative, associative, and opposite of a sum properties. Use transformations to solve addition and subtraction equations involving positive and negative numbers. Use transformation by addition to find an equivalent equation. Use transformation by subtraction to find an equivalent equation. Write an equation that can be used to solve a word problem involving addition and subtraction of positive and negative numbers. Review the concepts and skills learned in the unit.
Unit 3: Multiplication and Division Multiplying Integers and Decimals, Part 1 Multiplying Integers and Decimals, Part 2 Dividing Integers and Decimals Multiplication and Division Properties Rounding and Estimation Equations Involving Multiplication and Division Multiplication and Division Applications, Part 1 Multiplication and Division Applications, Part 2 Unit Review Unit Test	N-Q.3 A-REI.1 A-REI.3 A-CED.4	Identify properties of equality. Use a property of equality to simplify an expression. Use a property of equality to solve an equation. Identify properties of equality and use them to solve an equation. Multiply positive and negative numbers. Determine the sign of a product with three or more factors. Simplify an expression involving multiplication and division of positive and negative numbers. Round a number to a specified place. Use rounding to estimate the value of an expression. Determine whether or not an answer to an equation or word problem is reasonable. Determine whether or not an answer to an equation or word problem is reasonable or not. Identify a reasonable answer to a given problem. Simplify an expression involving division of positive and negative numbers. Simplify an expression involving multiplication and division of positive and negative numbers.

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		<p>Evaluate an expression involving division of positive and negative numbers.</p> <p>Simplify an expression involving multiplication of positive and negative numbers.</p> <p>Simplify an expression involving multiplication and division of positive and negative numbers.</p> <p>Evaluate an expression involving multiplication of signed integers and decimals.</p> <p>Solve a literal equation for a given variable.</p> <p>Use a formula to solve a word problem.</p> <p>Use transformation by multiplication or division to solve an equation.</p> <p>Identify properties of equality and use them to solve an equation.</p> <p>Review the concepts and skills learned in the unit.</p>
<p>Unit 4: Fractions</p> <p>Equivalent Fractions, Part 1</p> <p>Equivalent Fractions, Part 2</p> <p>Multiplying Fractions</p> <p>Dividing Fractions</p> <p>Discuss: Fractions</p> <p>Your Choice</p> <p>Common Denominators</p> <p>Adding and Subtracting Fractions, Part 1</p> <p>Adding and Subtracting Fractions, Part 2</p> <p>Working with Improper Fractions and Mixed Numbers</p> <p>Your Choice</p> <p>Multiplying and Dividing Mixed Numbers</p> <p>Equations with Fractions and Mixed Numbers, Part 1</p> <p>Equations with Fractions and Mixed Numbers, Part 2</p> <p>Unit Review</p> <p>Unit Test</p>	A-REI.3	<p>Add proper fractions.</p> <p>Subtract proper fractions.</p> <p>Add or subtract proper fractions and mixed numbers.</p> <p>Convert a mixed number to an improper fraction.</p> <p>Add or subtract mixed numbers and improper fractions.</p> <p>Use transformations to solve an equation with mixed numbers or fractions.</p> <p>Find the LCD of a pair of fractions.</p> <p>Find equivalent fractions with a common denominator for a set of fractions.</p> <p>Find the LCD of a pair of fractions and find equivalent fractions with a common denominator for a set of fractions.</p> <p>Compare fractions.</p> <p>Find the reciprocals of fractions.</p> <p>Divide fractions.</p> <p>Multiply fractions, mixed numbers, and integers.</p> <p>Divide fractions, mixed numbers, and integers.</p> <p>Multiply and divide fractions, mixed numbers, and integers.</p> <p>Multiply fractions.</p> <p>Solve a word problem involving fractions.</p> <p>Solve a word problem involving addition and subtraction of fractions.</p> <p>Solve an equation involving fractions.</p> <p>Use transformations to solve an equation with mixed numbers or fractions.</p> <p>Use transformations to solve an addition or subtraction equation with mixed numbers or fractions.</p> <p>Use transformations to solve an equation with mixed numbers or fractions. Use transformations to solve a multiplication equation with mixed numbers or fractions.</p> <p>Write a proper fraction in lowest terms.</p> <p>Determine if two fractions are equivalent.</p> <p>Simplify a fraction that has a variable factor in the numerator or denominator.</p> <p>Write a proper fraction in lowest terms.</p> <p>Multiply fractions.</p> <p>Divide fractions</p> <p>Review the concepts and skills learned in the unit.</p>
<p>Unit 5: Combined Operations</p> <p>The Distributive Property</p> <p>Like Terms</p> <p>Expressions with Mixed Operations</p> <p>Equations with Mixed Operations</p> <p>Error Analysis</p> <p>Inequalities</p> <p>Unit Review</p> <p>Unit Test</p>	A-REI.1 A-REI.3	<p>Use the distributive property and mental math to evaluate an expression.</p> <p>Identify like terms.</p> <p>Combine like terms.</p> <p>Identify and combine like terms.</p> <p>Simplify and evaluate an expression with mixed operations.</p> <p>Simplify an expression with mixed operations.</p> <p>Evaluate an expression with mixed operations.</p>

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		<p>Use the distributive property and mental math to evaluate an expression.</p> <p>Solve equations with mixed operations.</p> <p>Solve an equation that involves simplification.</p> <p>Identify errors in a solution to an equation and a word problem.</p> <p>Correct errors in a solution to an equation and a word problem.</p> <p>Identify and correct errors in a solution to an equation and a word problem.</p> <p>Solve a simple inequality when given a replacement set.</p> <p>Solve an inequality in one variable.</p> <p>Graph the solution to an inequality in one variable on a number line.</p> <p>Review the concepts and skills learned in the unit.</p>
Unit 6: Number Properties Positive Exponents Factors and Primes GCF and Relative Primes Your Choice Negative Exponents Powers of Ten Unit Review Unit Test	A-CED.1 N.RN.1	<p>Simplify a numerical expression involving positive exponents.</p> <p>Write a number as a power of a given number.</p> <p>Evaluate a variable expression involving positive exponents.</p> <p>Simplify a numerical expression and evaluate a variable expression involving exponents.</p> <p>Find factors of a given number.</p> <p>Determine whether a number is prime or composite.</p> <p>Find the prime factorization of a number.</p> <p>Find factors of a given number.</p> <p>Find the prime factorization of a number.</p> <p>Find the common factors of two numbers.</p> <p>Determine whether two numbers are relatively prime.</p> <p>Find the GCF of two numbers.</p> <p>Determine whether two numbers are relatively prime or not.</p> <p>Simplify an expression involving negative exponents.</p> <p>Solve an equation involving negative exponents.</p> <p>Simplify an expression and solve an equation involving negative exponents.</p> <p>Write a power of ten in standard form.</p> <p>Write a number in standard form as a power of ten.</p> <p>Multiply a decimal by a power of ten.</p> <p>Divide a decimal by a power of ten.</p> <p>Review the concepts and skills learned in the unit.</p>
Unit 7: Geometry Basics Points, Lines, and Planes Rays and Angles Parallel Lines and Transversals Discuss: Lines and Transversals Your Choice Triangles Polygons Circles Transformations Unit Review Unit Test	G-CO.1 G-CO.4 G-CO.5 G-CO.9 G-CO.10	<p>Name a point.</p> <p>Name a plane.</p> <p>Name a line.</p> <p>Name a point, line, plane, ray, or angle.</p> <p>Name a ray.</p> <p>Name an angle.</p> <p>Name a point, line, plane, ray, or angle.</p> <p>Determine whether an angle is acute, right, or obtuse.</p> <p>Identify a pair of alternate interior and alternate exterior angles associated with a transversal that intersects parallel lines.</p> <p>Identify a pair of corresponding angles associated with a transversal that intersects parallel lines.</p> <p>Identify a pair of alternate interior or corresponding angles associated with a transversal that intersects parallel lines.</p> <p>Use properties to determine unknown angle measures associated with a transversal that intersects two parallel lines.</p> <p>Use properties to determine unknown angle measures associated with a transversal that intersects two parallel lines in a complex figure.</p> <p>Determine the sum of the measures of same-side interior angles when a transversal intersects two parallel lines.</p> <p>Use same-side interior angles to determine whether two lines intersected by a transversal are parallel.</p>

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		Use triangle properties to find missing angle measures in a triangle. Determine whether a triangle is acute, obtuse, or right. Determine whether a figure is a polygon. Determine whether a polygon is regular. Identify a polygon by the number of its sides. Classify a figure as a polygon or not. Name a polygon by its number of sides and determine if it is regular. Name radii. Name chords. Name diameters. Find the radius or diameter when given the other. Name radii, chords and diameters of circles. Draw a reflection when given a figure and a line of reflection. Identify a reflection or rotation for a given image and preimage. Draw or identify a reflection. Draw a rotation of 90 or 180 degrees when given a figure and a center of rotation. Draw or identify a rotation of 90 or 180 degrees. Review the concepts and skills learned in the unit.
Unit 8: Semester Review and Test Semester Review Semester Test		