

# Wyoming Department of Education Required Virtual Education Course Syllabus

## Sheridan County School District # 1

Program Name	Sheridan County School District #1 Virtual School	Content Area	MA
Course ID	AC02052-Sp	Grade Level	9 - 12
Course Name	Algebra I-Spanish	# of Credits	1
SCED Code	02052	Curriculum Type	Acellus

### COURSE DESCRIPTION

Acellus Algebra Spanish teaches students the basic principles, rules, and operations of working with expressions containing variables. Acellus Algebra Spanish incorporates English math terminology so that Spanish-speaking students can transition to math classes taught in English as effortlessly as possible. Course topics include: Order of Operations, Basic Properties of Algebra, One- and Two-Step Equations, Multi-Step Equations, Literal Equations, Mixtures, Uniform Motion, Formulas for the Equation of a Line (Point-Slope and Slope-Intercept forms), Equations for Parallel and Perpendicular Lines, Parabolas, Inequalities, Systems of Equations, Polynomial Operations, Factoring Polynomials, Rational Expressions, Radical Expressions and Equations, The Distance Formula, and Quadratic Formulas. This course has been developed for students in grades 8 and above. We recommend that students complete Acellus FunMath Spanish prior to taking this course to ensure that they have a strong foundation of basic mathematical principles on which to build. This NCTM standards-based course is taught

STANDARD #	<a href="#">BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets</a>
N.Q.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.*
A.SSE.1	Interpret expressions that represent a quantity in terms of its context.*
A.SSE.1a	Interpret parts of an expression, such as terms, factors, and coefficients.*
A.SSE.2	Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$ , thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$ .
A.SSE.3	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.*
A.SSE.3a	Factor a quadratic expression to reveal the zeros of the function it defines.*
A.SSE.3b	Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.*
A.APR.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

A.APR.2	Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number $a$ , the remainder on division by $x - a$ is $p(a)$ , so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$ .
A.APR.7	(+)Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.
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.*
A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.*
A.CED.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*
A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance $R$ .*
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.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
A.REI.4	Solve quadratic equations in one variable.
A.REI.4a	Use the method of completing the square to transform any quadratic equation in $x$ into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.
A.REI.6	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
A.REI.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).

A.REI.12	Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.
F.IF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*
F.IF.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.*
F.IF.7a	Graph linear and quadratic functions and show intercepts, maxima, and minima.*
F.IF.7b	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.*
F.IF.8a	Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.
F.BF.1	Write a function that describes a relationship between two quantities.*
F.LE.1b	Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.*
G.GPE.6	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Unit 1 – Foundations of Algebra	A.SSE.1	This unit covers verbal and algebraic expressions and algebraic patterns, order of operations, open sentences, basic properties of algebra, arithmetic with integers, and absolute value.
Unit 2 – Rational and Irrational Numbers	A.APR.7	This unit discusses comparing, ordering, adding, subtracting, multiplying and dividing rational numbers, as well as square roots, squares, and irrationals.

Unit 3 – Equations and Their Applications	N.Q.1, A.SSE.1a, A.CED.1, A.CED.4, A.REI.1, A.REI.2	This unit covers one-step equations using addition, subtraction, multiplication, and division, as well as properties of equality, two-step equations, complement, supplement, number, perimeter, and angle problems, clearing fractions and decimals, consecutive integers, and multi-step and literal equations.
Unit 4 – More Applications with Equations	N.Q.1, A.CED.1, F.BF.1	This unit discusses solving proportions. It also discusses similar triangles, percents, simple interest, percent of increase or decrease, probability and odds, mixtures, and uniform motion.
Unit 5 – Foundations of Graphing	N.Q.1, A.SSE.3, A.CED.2, A.REI.10, F.IF.4, F.IF.7, F.IF.7a, F.LE.1b	This unit covers ordered pairs and relations, graphing linear equations, writing equations from relations, definitions of and calculating slope, and point-slope and slope-intercept formulas.
Unit 6 – More Graphing Concepts	N.Q.1, A.CED.2, A.REI.12, F.IF.4, F.IF.7, F.IF.7a, F.IF.7b, G.GPE.6	This unit presents shortcuts to graphing, parallel and perpendicular slopes and equations of them, midpoints, graphing absolute value, parabolas, and solving equations with a calculator.
Unit 7 – Inequalities	A.CED.1, A.REI.12	This unit discusses solving inequalities using addition, subtraction, multiplication, and division, as well as multi-step inequalities and graphing inequalities
Unit 8 – Systems of Equations	A.CED.3, A.REI.6, A.REI.12	This unit discusses solving systems of equations by graphing, substitution, addition, and multiplications. It also discusses graphing systems of inequalities.
Unit 9 – Polynomials	A.SSE.3b	This unit covers polynomials and uses algebra tiles to demonstrate them, as well as to demonstrate adding, subtracting, multiplying, and dividing polynomials. It also discusses multiplying polynomials by monomials.
Unit 10 – More Operations with Polynomials	A.SSE.1a, A.SSE.2, A.SSE.3b	This unit discusses multiplying polynomials, special binomial products, factoring polynomials, binomial factors, and using FOIL for multiplying binomials and factoring. It also discusses using the zero product property to solve equations.
Unit 11 – Rational Expressions	A.APR.2, A.APR.7	This unit covers simplifying, adding, subtracting, multiplying and dividing rational expressions, and dividing a polynomial by a binomial.
Unit 12 – Radical Expressions and Equations	A.REI.2	This unit covers simplifying square roots and radical expressions, and rationalizing denominators. It also covers radical expressions and radical equations.

Unit 13 – Distance Formula and Quadratic Equations

A.SSE.3a,  
A.SSE.3b,  
A.CED.1, A.REI.4,  
A.REI.4a, F.IF.7a,  
F.IF.8a

This unit explains the distance formula, quadratic equations, completing the square, the quadratic formula, and rules of exponents.