

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	AC02003	Grade Level	5 - 12
Course Name	FUNDamental Math-(Older Version)	# of Credits	1
SCED Code	02003	Curriculum Type	Acellus

COURSE DESCRIPTION

The Acellus FUNMath course was developed to ensure that students have a strong foundation in basic mathematical concepts prior to introducing them to more advanced topics. We have found that students often have difficulty in Algebra when they have a weak foundation in mathematics. Acellus FUNMath helps to fill in the holes in student understanding, providing them with a strong foundation of basic mathematical concepts upon which they can build. It is recommended that students take Acellus FUNMath at either the end of grade 7 or 8 or at the beginning of grade 9 as a refresher for those preparing to go into Algebra.

STANDARD #	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
N.Q.3	Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.*
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.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.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).
F.IF.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
G.CO.3	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.
G.CO.7	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.
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 degrees; 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.

G.SRT.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
G.GMD.1	Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments.
G.GMD.3	Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.*
S.ID.1	Represent data with plots on the real number line (dot plots, histograms, and box plots).*
S.IC.1	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.*
S.CP.9	(+)Use permutations and combinations to compute probabilities of compound events and solve problems.*

SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Unit 1 – Introduction and Basic Foundation		In this unit students learn about addition, subtraction, multiplication, and division of whole numbers, and divisibility rules. They also learn about prime and composite numbers, greatest common factors, prime factorization, place value, estimating, order of operations, powers of ten, and formulas and variables.
Unit 2 – Fractions		In this unit students learn about ratios, rates, proportions, improper and mixed fractions, and simplifying fractions. They also learn about least common multiples, adding, subtracting, multiplying, and dividing fractions and mixed numbers.
Unit 3 – Decimals		In this unit students learn about adding, subtracting, and multiplying decimals, as well as dividing decimals by whole numbers and by powers of ten. They also learn about comparing and ordering decimals, and terminating and repeating decimals.
Unit 4 – Decimals and Fractions		In this unit students learn about standard and scientific notation, and the metric system. They also learn about forms and types of percent, simple interest and applied percent, and circle graphs.
Unit 5 – Probability	S.CP.9	In this unit students learn about the counting principle, tree diagrams, basic probability. They also learn about independent and dependent events, using probability for prediction, factorials, permutations, and combinations.
Unit 6 – Statistics	S.ID.1, S.IC.1	In this unit students learn about mean, median, mode, range, frequency tables, and pictographs. Students also learn about reading and interpreting graphs; bar, broken-line, and other graphs; and misleading statistics.

Unit 7 – Geometry of Angles and Lines	G.CO.9	In this unit students learn about geometry symbols. They also learn about planes, points, lines (including parallel lines and transversals), and angles.
Unit 8 – Polygons	G.CO.7, G.CO.10, G.SRT.2	In this unit students learn about triangles, quadrilaterals, and other polygons. They also learn about angles in triangles and regular polygons.
Unit 9 – Perimeter, Area, and Volume	G.GMD.1, G.GMD.3	In this unit students learn about perimeter. They also learn about area, volume, and surface area.
Unit 10 – Miscellaneous Geometry	G.CO.3, G.GMD.1	In this unit students learn about square roots and the Pythagorean Theorem. They also learn about circles, transformations, and symmetry.
Unit 11 – Pre-Algebra		In this unit students learn about set notation and Venn Diagrams, comparing, ordering, adding, subtracting, multiplying and dividing integers, absolute value, and order of operations. Students also learn about the zero, identity, commutative, associative, and distributive properties, and basic graphing, including ordered pairs and the coordinate plane.
Unit 12 – Beginning Algebra	A.CED.2, A.CED.4, A.REI.1, A.REI.10, F.IF.1	In this unit students learn about comparing, ordering, adding, subtracting, multiplying, and dividing rational numbers, as well as expressions and equations, order of operations with and without variables, and the meaning of algebraic symbols. They also learn about one- and two-step equations, decimals and fractions, formulas, literal equations, patterns, functions, graphing straight lines, and basic inequalities.
Unit 13 – Bonus Lessons	N.Q.3	In this unit, students will learn about significant figures and degree of precision. They will practice adding and subtracting numbers in scientific notation. They will look at how scientific notation is used in real world situations.