

Wyoming Department of Education Required Virtual Education Course Syllabus

BIG HORN COUNTY SCHOOL DISTRICT #1

Program Name	WYCA	Content Area	Mathematics
Course ID	CAMA79657	Grade Level	9, 10, 11, 12
Course Name	Explorations in Mathematics A	# of Credits	0.5
SCED Code	02003G0.5012	Curriculum Type	Connections Academy

COURSE DESCRIPTION

This is the first of two courses that comprise Explorations in Mathematics. This course is designed to provide the student with a solid mathematics foundation. The student will explore properties of rational numbers including divisibility patterns, prime factorization, greatest common factor, and least common multiple. The student will add, subtract, multiply, and divide rational numbers. Then, the student will identify and solve expressions and equations using variables. Finally, the student will use properties, including the Associative Property, Commutative Property, and Distributive Property, to solve and simplify equations.

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK
A.APR.6	Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.
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.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.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 ration

SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES
<p>Unit 1: Working with Rational Numbers</p> <p>As you work through the unit, you will expand your knowledge of rational numbers. You will explore divisibility patterns and prime factorization. You will use this knowledge to identify and determine the greatest common factor and the least common multiple of rational numbers. Then, you will learn how to add and subtract rational numbers with like and unlike denominators and how to reduce the answer to its simplest form. Finally, you will solve rational number problems by multiplying and dividing.</p>	<p>A.APR.6; A.APR.7; A.REI.2</p>	<ul style="list-style-type: none"> •Learn what divisible means •Understand how to determine whether or not a number is divisible •Practice using divisibility patterns •Identify the prime numbers and composite numbers •Examine factor trees •Learn to do the prime factorization of a number using repeated division •Understand what common factors are •Learn how to determine the Greatest Common Factor of two or more whole numbers •Practice finding the Greatest Common Factor of two whole numbers •Learn to recognize rational numbers •Rewrite rational numbers as the ratio of two integers •Understand how to simplify the ratio of two integers when necessary •Learn to add and subtract rational numbers with like denominators •Understand what a remainder is •Examine how to reduce an improper fraction to its simplest form •Understand what the least common multiple of two numbers is •Practice finding the least common multiple of two numbers •Review what common factors are and how to find the greatest common factor •Add and subtract rational numbers with unlike denominators •Learn to add and subtract with improper fractions •Understand how to add and subtract with mixed fractions •Learn how to subtract rational numbers with unlike denominators by rewriting one or both of the rational numbers •Understand how to reduce to the simplest form •Understand how to multiply rational numbers •Learn to write rational numbers in simplest form •Learn to divide rational numbers •Understand how to write the quotient in simplest form

<p>Unit 2: Variables, Equations, and Properties In this unit, you will recognize and solve mathematical expressions and equations involving variables. You will identify, understand, and simplify expressions using the following properties: Associative Property of Addition and Multiplication, Commutative Property of Addition and Multiplication, Additive and Multiplicative Identity Property, Additive and Multiplicative Inverse Properties, and the Distributive Property. Finally, you will learn how to use the order of operations to evaluate expressions.</p>	<p>A.CED.1; A.REI.1; A.REI.2</p>	<ul style="list-style-type: none"> •Recognize variables, expressions, and equations •Understand how to use variables, expressions, and equations •Identify the Associative Property of Addition and Multiplication •Learn how to use Associative Property to solve your mathematical equations •Understand the advantages to using Associative Property •Identify the Commutative Property of Addition and Multiplication •Learn to use the Commutative Property of Addition and Multiplication •Understand why you would use the Commutative Property of Addition and •Multiplication •Understand the order of operations •Use the order of operations to evaluate an expression •Look at bases and exponents •Understand the order of operations •Use the order of operations to evaluate an expression •Look at bases and exponents •Identify the Additive Identity Property •Use the Additive Identity Property •Learn what the Multiplicative Identity Property is •Practice using the Multiplicative Identity Property •Identify additive inverse •Practice using the additive inverse •Understand what multiplicative inverse is •Practice using the multiplicative inverse •Learn what the Distributive Property is •Understand how to use the Distributive Property to evaluate an expression •Learn what the Distributive Property is •Use the Distributive Property to collect like terms in an expression •Review the properties studied in this unit •Determine the properties used to simplify an expression
<p>Unit 3: Explorations of Mathematics A Final In this unit, you will have the opportunity to prepare for and take the final exam. Since this is a comprehensive exam, it may be helpful to organize your notes in the order of the course outline before you begin to review. Using the test-taking strategies that you have previously learned can help you be successful with both objective and essay questions.</p>		<ul style="list-style-type: none"> •Decide which strategies you will use to prepare for your exam •Organize your time and study materials •Review your notes, keywords and vocabulary terms, and all important concepts that may be covered on this exam •Review your notes, keywords, formulas, and all important concepts that may be covered on this exam