Wyoming Department of Education Required Virtual Education Course Syllabus

Campbell County School District # 1

Program Name	Campbell County Virtual School	Content Area	MA
Course ID	MA5V	Grade Level	5
Course Name	Math Plus Yellow	# of Credits	
SCED Code		Curriculum Type	K12 Inc

COURSE DESCRIPTION

MATH PLUS YELLOW (5)
This research-based course focuses on computational fluency, conceptual understanding, and problem solving. This engaging course features new graphics, learning tools, and games; adaptive activities that help struggling students master concepts and skills before moving on; and more support for Learning Coaches to guide their students to success. This course builds on student understanding of numbers and operations by making connections between place value, decimals, and fractions; introducing multiplication and division of decimal numbers; and extending understanding of fraction operations. The course focuses on computational fluency in multiplication and division of whole numbers through the use of standard algorithms. The course enhances fluency of operations with whole numbers, fractions, and decimals through application in the solving of measurement, geometry, and data-analysis problems using mathematical problem-solving techniques. Students continue to develop algebraic thinking as they work with variables and formulas to solve multistep word problems, further study patterns and rules, and are introduced to representing problems graphically using the coordinate plane. They extend their knowledge of geometry through the use of the classification of shapes into hierarchies based on their attributes, the introduction of three-dimensional figures and volume, and connecting geometric concepts to measurement and problem solving. This course includes standards-based tasks, digital literacy skills, and assessment questions.

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
MA.5.OA.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
MA.5.OA.2	Write simple expressions that record calculations with numbers, and interpret
MA.5.OA.3	Generate two numerical patterns using two given rules. Identify apparent
MA.5.NBT.1	Recognize that in a multi-digit number, a digit in one place represents 10 times
MA.5.NBT.2	Explain patterns in the number of zeros of the product when multiplying a
MA.5.NBT.3	Read, write, and compare decimals to thousandths. Read and write decimals to thousandths using base-ten numerals, number
MA.5.NBT.4	Use place value understanding to round decimals to any place.
MA.5.NBT.5	Fluently multiply multi-digit whole numbers using the standard algorithm.
MA.5.NBT.6	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on
MA.5.NBT.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place
MA.5.NF.1	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent
MA.5.NF.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike
MA.5.NF.3	Interpret a fraction as division of the numerator by the denominator (a /b = a ÷b). Solve word problems involving division of
MA.5.NF.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
MA.5.NF.5	Interpret multiplication as scaling (resizing), by:
MA.5.NF.6	Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or
MA.5.NF.7	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit
MA.5.MD.1	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m),
MA.5.MD.2	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8).Use operations on fractions for this
MA.5.MD.3	Recognize volume as an attribute of solid figures and understand concepts of
MA.5.MD.4	Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
MA.5.MD.5	Relate volume to the operations of multiplication and addition and solve real
MA.5.G.1	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin)
MA.5.G.2	Represent real world and mathematical problems by graphing points in the first
MA.5.G.3	Understand that attributes belonging to a category of two-dimensional figures
MA.5.G.4	Classify two-dimensional figures in a hierarchy based on properties.

SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS

Whole Numbers and Powers	MA.5.NBT.1	Unit 1: Whole Numbers and Powers Estimate or calculate a sum or a difference in a whole-number problem. Round whole numbers in a story problem. Estimate or calculate a sum or a difference in a whole-number story problem. Represent and compute a power by using repeated multiplication. Solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies. Fluently multiply multidigit whole numbers using the standard algorithm. Solve a problem that involves powers. Recognize that in a multidigit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. Solve multistep story problems using multiple operations. Solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using the standard algorithm.
Geometry	MA.5.G.3 MA.5.G.4	Unit 2: Geometry Define and sketch different types of triangles and identify their attributes. Know how to define and sketch different quadrilaterals. Identify, measure, and draw angles with appropriate math tools. Identify that the sum of the interior angles of any triangle is 180º and solve related problems. Identify and draw perpendicular or parallel lines with appropriate math tools. Understand that attributes that apply to a category of two-dimensional figures also apply to all subcategories of that category. Identify that the sum of the interior angles of any quadrilateral is 360º and solve related problems. Classify two-dimensional figures in a hierarchy based on their properties.
Fractions: Multiplication & Division	MA.5.NF.3 MA.5.NF.4 MA.5.NF.5 MA.5.NF.6 MA.5.NF.7	Unit 3: Fractions: Multiplication & Division Explain and give examples of different interpretations of fractions. Explain how multiplying two fractions or multiplying a fraction and a whole number affects the size of the product. Compare the size of a product to the size of one factor on the basis of the size of the other factor, without multiplying. Use models and equations to multiply a whole number or a fraction by a fraction. Interpret multiplication as scaling. Represent division of a unit fraction by a whole number such as using objects and pictorial models, including area models. Divide whole numbers by unit fractions and unit fractions by whole numbers. Solve real-world problems involving multiplication of fractions and mixed numbers. Measure angles and identify types of angles.
Problems Involving Fractions	MA.5.NF.1 MA.5.NF.2 MA.5.NF.3 MA.5.NF.4 MA.5.NF.5 MA.5.NF.6 MA.5.NF.7 MA.5.MD.2	Unit 4: Problems Involving Fractions Solve a simple problem involving addition or subtraction of fractions. Solve real-world problems involving multiplication of fractions and mixed numbers.

Decimals: Addition and Subtraction	MA.5.NBT.3 MA.5.NBT.4 MA.5.NBT.7	Unit 5: Decimals: Addition and Subtraction Order three or more decimal numbers. Round a decimal number to any place through hundredths. Estimate the sum or difference in a problem involving decimal numbers. Recognize that in a multidigit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. Write decimals in expanded form. Add or subtract decimals to hundredths, using models or drawings and strategies based on place value. Solve a story problem involving addition or subtraction of decimal numbers. Compare decimal numbers. Read, write, compare, and order decimals to thousandths.
Decimals: Multiplication and Division	MA.5.NBT.3 MA.5.NBT.4 MA.5.NBT.7	Unit 6: Decimals: Multiplication and Division Compare decimal numbers. Solve a multiplication or division problem that involves decimal numbers. Verify that the calculated result of a problem involving multiplication or division of decimal numbers is reasonable. Solve a story problem that involves multiplication or division of decimal numbers. Multiply or divide by a multiple or power of 10. Write decimals in expanded form. Estimate the product or quotient of a computation problem involving decimal numbers. Use place value to round decimals to any place.
Semester Review and Checkpoint		Unit 7: Semester Review and Checkpoint Solve a problem that involves powers. Solve a story problem involving addition or subtraction of decimal numbers. Understand that attributes that apply to a category of two-dimensional figures also apply to all subcategories of that category. Solve a simple problem involving addition or subtraction of fractions. Estimate or calculate a sum or a difference in a whole-number story problem. Identify that the sum of the interior angles of any quadrilateral is 360º and solve related problems. Estimate the sum or difference in a problem involving decimal numbers. Estimate the product or quotient of a computation problem involving decimal numbers. Solve a story problem that involves multiplication or division of decimal numbers. Solve multistep story problems using multiple operations. Estimate or calculate a product or quotient in a whole-number story problem. Represent and compute a power by using repeated multiplication. Identify that the sum of the interior angles of any triangle is 180º and solve related problems. Define and sketch different types of triangles and identify their attributes. Fluently multiply multidigit whole numbers using the standard algorithm. Use place value to round decimals to any place. Compare decimal numbers. Order three or more decimal numbers.

Algebra		Unit 8: Algebra Evaluate numerical expressions using order of operations (expressions include with parentheses and powers, whole numbers only). Use the order of operations to simplify expressions with mixed operations. Find a mathematical expression that corresponds to a given word phrase. Simplify expressions with grouping symbols. Interpret a numerical expression without evaluating the expression. Use a letter to represent an unknown value in an expression or an equation. Evaluate a simple algebraic expression in one variable by using substitution. Identify or use an expression or an equation to answer questions about a problem. Identify and apply the distributive property in an equation or an expression with variables.
Coordinate Planes		Unit 9: Coordinate Planes Graph or write an equation to solve a problem that involves a linear function. Identify and graph ordered pairs in all quadrants of a coordinate plane. Use the situation presented in a problem to describe the meaning of each coordinate of an ordered pair displayed on a graph.
Perimeter, Area, and Volume	MA.5.NBT.6 MA.5.MD.3 MA.5.MD.4 MA.5.MD.5	Unit 10: Perimeter, Area, and Volume Estimate or determine the number of cubes required to fill a solid figure. Differentiate among appropriate units to measure perimeter, area, and volume. Explain and determine the volume of a solid figure and use appropriate units. Use squares to approximate the area of an irregular shape. Determine the perimeter of a plane figure and use appropriate units. Construct a cube or a rectangular box from a two-dimensional pattern and determine the surface area. Derive and use the formula for the area of a parallelogram and use appropriate units. Derive and use the formula for the area of a triangle and use appropriate units.
Math Reasoning: Methods and Strategies	MA.5.OA.2	Unit 11: Math Reasoning: Methods and Strategies Prioritize and sequence the information in a story problem that involves multiplication or division of decimal numbers. Identify and generalize methods for solving problems that are similar to each other. Apply strategies and results from simple story problems involving fractions to more complex problems. Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning in nonroutine or complex problems. Determine when and how to break a multistep whole-number story problem or money problem into simpler parts.

Math Reasoning: Solutions	MA.5.MD.1	Unit 12: Math Reasoning: Solutions Evaluate whether a solution for a problem is reasonable. Explain the advantages of exact solutions and approximate solutions to problems involving addition or subtraction of decimal numbers, and give answers to a specified degree of accuracy, such as hundredths. Make precise calculations and use the situation presented in a problem involving decimal-number operations to check the validity of the result. Solve a story problem involving equal measures. Use estimation in addition or subtraction of fractions to verify whether calculated results are reasonable.
Data Analysis and Representation	MA.5.MD.2	Unit 13: Data Analysis and Representation Explain which types of graphs are appropriate for various data sets. Interpret information displayed in a graph or table. Organize and display single-variable data in a circle graph. Organize and display single-variable data in a histogram. Use whole numbers, fractions, and decimals to compare different data sets. Create a line plot to display a set of measurements in fractions of a unit.
Semester Review and Assessment		Unit 14: Semester Review and Assessment Solve a story problem involving equal measures. Solve for one variable in a two-variable equation when the value of the other variable is given. Graph or write an equation to solve a problem that involves a linear function. Derive and use the formula for the area of a parallelogram and use appropriate units. Explain and determine the volume of a solid figure and use appropriate units. Determine when and how to break a multistep whole-number story problem or money problem into simpler parts. Find a mathematical expression that corresponds to a given word phrase. Interpret a numerical expression without evaluating the expression. Use the fact that volume is additive to solve problems. Demonstrate that when equal quantities are added to equal quantities the resulting quantities are equal. Use a letter to represent an unknown value in an expression or an equation. Differentiate among appropriate units to measure perimeter, area, and volume. Use estimation in addition or subtraction of fractions to verify whether calculated results are reasonable. Explain the advantages of exact solutions and approximate solutions to problems involving addition or subtraction of decimal numbers, and give answers to a specified degree of accuracy, such as hundredths. Given a rule such as "Add 3," generate and graph ordered pairs on a coordinate plane. Evaluate the utility of models, such as graphs and charts, to determine which are most useful and efficient to analyze data and solve