

# Wyoming Department of Education Required Virtual Education Course Syllabus

## BIG HORN COUNTY SCHOOL DISTRICT #1

Program Name	WYCA	Content Area	Mathematics
Course ID	CAOT78835	Grade Level	9, 10, 11, 12
Course Name	Business Math	# of Credits	0.5
SCED Code	02154G0.5011	Curriculum Type	Connections Academy

### COURSE DESCRIPTION

*The student will explore topics such as business statistics, profit calculations, payroll, banking, interest calculations, insurance, taxes, and OT business topics.*

- *Solve equations and mathematical problems using whole numbers, fractions, and decimals*
- *Reconcile bank statements*
- *Analyze business problems and financial statements using percentages and statistical concepts*
- *Explain various payroll issues that affect employers and employees*
- *Apply mathematical concepts to business lending transactions, transactions involving annuities and stocks and bonds, transactions involving inventory and business problems involving pricing and discounts*
- *Calculate various mortgage, insurance, and tax problems*
- *Apply various depreciation methods*

### WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK
A.SSE.1	Interpret expressions that represent a quantity in terms of its context.*
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.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.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
F.BF.1	Write a function that describes a relationship between two quantities.*
S.ID.2	Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.*
S.ID.4	Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.*
S.IC.1	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.*
S.IC.2	Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?*
S.IC.6	Evaluate reports based on data.*

### SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES
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**Business Math**

The student will explore topics such as business statistics, profit calculations, payroll, banking, interest calculations, insurance, taxes, and other business topics.

- Solve equations and mathematical problems using whole numbers, fractions, and decimals
- Reconcile bank statements
- Analyze business problems and financial statements using percentages and statistical concepts
- Explain various payroll issues that affect employers and employees
- Apply mathematical concepts to business lending transactions, transactions involving annuities and stocks and bonds, transactions involving inventory and business problems involving pricing and discounts
- Calculate various mortgage, insurance, and tax problems
- Apply various depreciation methods

A.SSE.1; A.SSE.3;  
A.CED.1; A.CED.4;  
A.REI.1; A.REI.2; A.REI.3;  
F.BF.1

- Add, subtract, multiply, and divide whole numbers
- Add, subtract, multiply, and divide fractions
- Add, subtract, multiply, and divide decimals
- Convert decimals and fractions
- Reconcile bank statements
- Describe various banking transactions
- Solve equations using multiplication, division, addition, and subtraction
- Solve equations using multiple operations containing multiple unknowns, parentheses, and proportions
- Use the problem-solving approach to analyze and solve word problems
- Solve percentage problems by identifying the rate, base, and portion
- Use mathematical equations to find the mean, median, and mode
- Explain the use of frequency distributions and graphs for reporting data sets
- Create and interpret a frequency distribution
- Create and interpret a bar, line, and circle graph
- Calculate how discounts and net price are established
- Calculate how manufacturers and distributors use trade discounts
- Explain various merchandising terms
- Explain how markup and selling price can be related
- Compute a markdown
  
- Describe payroll issues that affect both the employer and the employee
- Calculate gross pay based upon salary, hourly, piecework, and commission
- Compute various tax withholdings and net pay
- Compute the employer's share of taxes
- Explain and calculate simple interest
- Explain and calculate ordinary and exact time and interest
- Identify and calculate promissory note items
- Define terms related to consumer credit
- Explain and calculate finance charges related to installment loans
- Explain and calculate installment payments and APR using the rule of 78
- Explain and calculate how compound interest, future value, and present value are calculated
- Explain and calculate the future value, present value, and effective interest
- Explain and calculate installment payments and APR using the rule of 78
- Explain and calculate annuities and sinking funds
- Calculate the value of annuities and sinking funds
- Explain terms related to stocks
- Interpret stock reports

- Interpret bond and mutual fund listings
  - Calculate and distribute dividends
  - Calculate the price of bonds
  - Define terms related to mortgage payments
  - Explain how mortgage payments are calculated
  - Calculate the monthly mortgage payment and total interest
  - Produce an amortization schedule
  - Explain depreciation methods for financial statement reporting
  - Explain depreciation methods for Internal Revenue Service (IRS) reporting
  - Calculate depreciation using the straight-line, units-of-production, sum-of-the-years'-digits, and declining-balance methods
  - Calculate depreciation using various tax depreciation methods
- Explain the concept of inventory
- Calculate ending inventory and cost of goods sold using weighted-average
  - Calculate ending inventory and cost of goods sold using FIFO
  - Calculate ending inventory and cost of goods sold using LIFO
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- Calculate ending inventory and cost of goods sold using retail method
  - Calculate ending inventory and cost of goods sold using gross profit method
  - Explain and calculate inventory turnover rate, and overhead
  - Explain and define concepts related to insurance
  - Estimate life insurance premiums and refunds
  - Estimate property and fire insurance premiums and refunds
  - Estimate motor vehicle insurance premiums and refunds
  - Calculate sales tax
  - Calculate property tax
  - Calculate income tax
  - Explain the purpose of a balance sheet and income statement
  - Complete a balance sheet and income statement
  - Analyze financial statements using financial ratios and analyses
  - Describe the purpose of a financial ratio