



Alignment Document
State of Montana and Aventa Learning Consumer Math

Consumer Math

Standards	Benchmarks	Unit Name	Course Topic Description
<p>1 Students engage in the mathematical processes of problem solving and reasoning, estimation, communication, connections and applications, and using appropriate technology.</p>	<p>1.1 recognize and formulate problems from situations within and outside mathematics and apply solution strategies to those problems.</p>	All about Jobs	Addition and Subtraction of Decimals
		All about Jobs	Multiplication and Division of Whole Numbers and Decimals
		All about Jobs	Finding a Job
		All about Jobs	Computing Pay by Hourly Wages
		All about Jobs	Fractions, Decimals, and Percents
		All about Jobs	Percents to Decimals or Fractions
		All about Jobs	Percent of a Number
		All about Jobs	Review of Order of Operations
		All about Jobs	Wages and Tips
		Wages	Addition and Subtraction of Common Fractions
		Wages	Multiplication of Fractions
		Wages	Division of Fractions
		Wages	Pre-employment Forms



	Wages	Time Sheets And Time Cards
	Wages	Expressions
	Wages	Evaluating Expressions and Formulas
	Wages	Solving Equations: Addition and Subtraction
	Wages	Solving Equations: Multiplication and Division
	Wages	Solving Two-Step Equations
	Wages	Salary
	Wages	Commission
	Deductions, Taxes, and Insurance	Payroll Deductions
	Deductions, Taxes, and Insurance	FICA Deductions
	Deductions, Taxes, and Insurance	Health Insurance
	Deductions, Taxes, and Insurance	Life Insurance
	Deductions, Taxes, and Insurance	Tables and Graphs
	Deductions, Taxes, and Insurance	Mean, Median, and Mode
	Deductions, Taxes, and Insurance	Federal Income Tax



	Deductions, Taxes, and Insurance	Federal Tax Table
	Deductions, Taxes, and Insurance	Filling Out the Form
	Recreation and Spending	Movies and Shows (using tables)
	Recreation and Spending	Parks and Sports
	Recreation and Spending	Costs of Recreation
	Recreation and Spending	Health Clubs and Fitness Classes
	Recreation and Spending	Buying Clothes
	Recreation and Spending	Catalog Shopping
	Recreation and Spending	Buying Food
	Recreation and Spending	Eating Out
	Transportation	Air Travel and Time Zones
	Transportation	Busses, Trains, Subways, and Taxis
	Transportation	Distance
	Transportation	Estimating Using Mileage Charts
	Transportation	Taking a Road Trip
	Personal Finances	The Coordinate System
	Personal Finances	Writing Linear Equations
	Personal Finances	Graphing an Equation Using Points



	Personal Finances	Graphing Using Slope and Y-Intercept
	Personal Finances	Net Worth and Purchasing Power
	Personal Finances	Inflation Rate
	Personal Finances	Budgets (graph)
	Personal Finances	Budgeting Expenses
	Personal Finances	The Costs of Raising a Family
	Checking and Savings Accounts	Working with Exponential Equations
	Checking and Savings Accounts	Calculator With An Exponent Key
	Checking and Savings Accounts	Predicting Using Exponential Functions
	Checking and Savings Accounts	Graphing Exponential Equations
	Checking and Savings Accounts	Plotting the curve
	Checking and Savings Accounts	Predicting From the Curve
	Checking and Savings Accounts	Plotting a Decay Curve
	Checking and Savings Accounts	Checking Accounts
	Checking and Savings Accounts	The Check Register
	Checking and Savings Accounts	Savings Accounts
	Checking and Savings Accounts	Simple Interest
	Checking and Savings Accounts	Compound Interest



	Checking and Savings Accounts	Working with Compound Interest
	Checking and Savings Accounts	Savings and Graphs
	Checking and Savings Accounts	Estimating and Comparing
	Checking and Savings Accounts	Comparing different periods of compounding
	Credit	Using Credit Cards
	Credit	Working with Finance Charges
	Credit	Variable Rates
	Credit	Loans
	Credit	Using Tables to Find Interest
	Credit	Using Tables to Find Monthly Payments
	Credit	Installment Loan Plans
	Credit	Finding the APR
	Credit	Estimate the APR
	Credit	Thinking about Credit
	Automobile Expenses	Buying a New Automobile
	Automobile Expenses	Finding the Total Cost
	Automobile Expenses	Used Cars
	Automobile Expenses	Auto Loans
	Automobile Expenses	Operating Expenses



	Automobile Expenses	Finding the MPG
	Automobile Expenses	Estimating the Cost of a Trip
	Automobile Expenses	Preventative Maintenance and Repairs
	Automobile Expenses	Mean Cost per Year
	Automobile Expenses	Automobile Insurance
	Automobile Expenses	Insurance Ratings Factors
	Automobile Expenses	Finding the Total Premium (table)
	Automobile Expenses	Car Rental Costs
	Automobile Expenses	Comparing Cars with Tables
	Automobile Expenses	Car Cost Comparison Using Graphs
	Housing	Housing
	Housing	Renting an Apartment
	Housing	Maximum Rent
	Housing	Buying a House
	Housing	Maximum to Spend on a House
	Housing	Finding Appreciation
	Housing	The Mortgage
	Housing	Taxes and Insurance



		Housing	Homeowner's Insurance
		Housing	Decorating and Remodeling
		Housing	Finding the Area of the Room
		Housing	Scale Drawings
	1.2 select, apply, and evaluate appropriate estimation strategies throughout the problem-solving process.	Transportation	Estimating Using Mileage Charts
		Checking and Savings Accounts	Predicting Using Exponential Functions
		Checking and Savings Accounts	Predicting From the Curve
		Checking and Savings Accounts	Estimating and Comparing
		Credit	Estimate the APR
		Automobile Expenses	Estimating the Cost of a Trip
	1.3 formulate definitions, make and justify inferences, express generalizations, and communicate mathematical ideas and relationships.	All about Jobs	Fractions, Decimals, and Percents
		All about Jobs	Percents to Decimals or Fractions
		All about Jobs	Percent of a Number
		Wages	Expressions
		Wages	Evaluating Expressions and Formulas
		Recreation and Spending	Costs of Recreation
		Recreation and Spending	Buying Food
		Recreation and Spending	Eating Out
		Transportation	Taking a Road Trip
		Personal Finances	Budgeting Expenses



		Personal Finances	The Costs of Raising a Family
		Checking and Savings Accounts	Comparing different periods of compounding
		Credit	Using Credit Cards
		Credit	Thinking about Credit
	1.4 apply and translate among different representations of the same problem situation or of the same mathematical concept. Model connections between problem situations that arise in disciplines other than mathematics.	All about Jobs	Finding a Job
		All about Jobs	Wages and Tips
		Wages	Pre-employment Forms
		Wages	Time Sheets And Time Cards
		Wages	Salary
		Wages	Commission
		Deductions, Taxes, and Insurance	Deductions, Taxes, and Insurance
		Deductions, Taxes, and Insurance	Payroll Deductions
		Deductions, Taxes, and Insurance	FICA Deductions
		Deductions, Taxes, and Insurance	Health Insurance
		Deductions, Taxes, and Insurance	Life Insurance
		Deductions, Taxes, and Insurance	Federal Income Tax



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	Recreation and Spending	Catalog Shopping
	Recreation and Spending	Buying Food
	Recreation and Spending	Eating Out
	Transportation	Air Travel and Time Zones
	Transportation	Busses, Trains, Subways, and Taxis
	Personal Finances	Net Worth and Purchasing Power
	Personal Finances	Inflation Rate
	Personal Finances	Budgeting Expenses
	Personal Finances	The Costs of Raising a Family
	Checking and Savings Accounts	Checking Accounts



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	Credit	Thinking about Credit
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	Automobile Expenses	Used Cars
	Automobile Expenses	Auto Loans
	Automobile Expenses	Operating Expenses
	Automobile Expenses	Preventative Maintenance and Repairs
	Automobile Expenses	Automobile Insurance
	Automobile Expenses	Insurance Ratings Factors
	Automobile Expenses	Car Rental Costs
	Automobile Expenses	Comparing Cars with Tables
	Housing	Renting an Apartment
	Housing	The Mortgage
	Housing	Taxes and Insurance
	Housing	Homeowner's Insurance

	<p>1.5 select and use appropriate technology to enhance mathematical understanding. Appropriate technology may include, but is not limited to, paper and pencil, calculator, computer, and data collection devices.</p>	<p>Housing Deductions, Taxes, and Insurance Recreation and Spending Transportation Checking and Savings Accounts Credit Credit Automobile Expenses</p>	<p>Decorating and Remodeling Federal Tax Table Movies and Shows (using tables) Estimating Using Mileage Charts Calculator With An Exponent Key Using Tables to Find Interest Using Tables to Find Monthly Payments Finding the Total Premium (table)</p>
<p>2 Students demonstrate understanding of and an ability to use numbers and operations.</p>	<p>2.1 use and understand the real number system, its operations, notations, and the various subsystems.</p>	<p>All about Jobs All about Jobs All about Jobs All about Jobs All about Jobs All about Jobs All about Jobs All about Jobs Wages Wages</p>	<p>Addition and Subtraction of Decimals Multiplication and Division of Whole Numbers and Decimals Computing Pay by Hourly Wages Fractions, Decimals, and Percents Percents to Decimals or Fractions Percent of a Number Review of Order of Operations Wages and Tips Addition and Subtraction of Common Fractions Multiplication of Fractions</p>



	Wages	Division of Fractions
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	Recreation and Spending	Eating Out
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	Transportation	Estimating Using Mileage Charts
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	Personal Finances	Writing Linear Equations
	Personal Finances	Graphing an Equation Using Points
	Personal Finances	Graphing Using Slope and Y-Intercept
	Personal Finances	Net Worth and Purchasing Power
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	Personal Finances	Budgeting Expenses
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	Checking and Savings Accounts	Calculator With An Exponent Key
	Checking and Savings Accounts	Predicting Using Exponential Functions
	Checking and Savings Accounts	Graphing Exponential Equations



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	Credit	Estimate the APR
	Automobile Expenses	Finding the Total Cost
	Automobile Expenses	Used Cars
	Automobile Expenses	Auto Loans
	Automobile Expenses	Operating Expenses
	Automobile Expenses	Finding the MPG
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		Housing	Homeowner's Insurance
		Housing	Finding the Area of the Room
		Housing	Scale Drawings
	2.2 use definitions and basic operations of the complex number system.		
3 Students use algebraic concepts, processes, and language to model and solve a variety of real-world and mathematical problems.	3.1 use algebra to represent patterns of change.	Personal Finances	The Coordinate System
		Personal Finances	Writing Linear Equations
		Personal Finances	Graphing an Equation Using Points
		Personal Finances	Graphing Using Slope and Y-Intercept
		Personal Finances	Net Worth and Purchasing Power
		Personal Finances	Inflation Rate
		Checking and Savings Accounts	Working with Exponential Equations
		Checking and Savings Accounts	Calculator With An Exponent Key
		Checking and Savings Accounts	Predicting Using Exponential Functions
		Checking and Savings Accounts	Graphing Exponential Equations
		Checking and Savings Accounts	Plotting the curve



	<p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Housing</p> <p>Housing</p> <p>Housing</p> <p>Housing</p> <p>Housing</p>	<p>Predicting From the Curve</p> <p>Plotting a Decay Curve</p> <p>Simple Interest</p> <p>Compound Interest</p> <p>Working with Compound Interest</p> <p>Maximum Rent</p> <p>Buying a House</p> <p>Maximum to Spend on a House</p> <p>Finding Appreciation</p> <p>The Mortgage</p>	
	<p>3.2 use basic operations with algebraic expressions.</p>	<p>Personal Finances</p> <p>Personal Finances</p> <p>Personal Finances</p> <p>Personal Finances</p> <p>Personal Finances</p> <p>Personal Finances</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p>	<p>The Coordinate System</p> <p>Writing Linear Equations</p> <p>Graphing an Equation Using Points</p> <p>Graphing Using Slope and Y-Intercept</p> <p>Net Worth and Purchasing Power</p> <p>Inflation Rate</p> <p>Working with Exponential Equations</p> <p>Calculator With An Exponent Key</p> <p>Predicting Using Exponential Functions</p>



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	<p>3.3 solve algebraic equations and inequalities: linear, quadratic, exponential, logarithmic, and power.</p>	<p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p>	<p>Working with Exponential Equations</p> <p>Calculator With An Exponent Key</p> <p>Predicting Using Exponential Functions</p> <p>Graphing Exponential Equations</p> <p>Plotting the curve</p> <p>Predicting From the Curve</p> <p>Plotting a Decay Curve</p>



	Checking and Savings Accounts	Compound Interest
	Checking and Savings Accounts	Working with Compound Interest
	Housing	Maximum Rent
	Housing	Buying a House
	Housing	Maximum to Spend on a House
3.4 solve systems of algebraic equations and inequalities, including use of matrices.		
3.5 use algebraic models to solve mathematical and real-world problems.	Personal Finances	The Coordinate System
	Personal Finances	Writing Linear Equations
	Personal Finances	Graphing an Equation Using Points
	Personal Finances	Graphing Using Slope and Y-Intercept
	Personal Finances	Net Worth and Purchasing Power
	Personal Finances	Inflation Rate
	Checking and Savings Accounts	Working with Exponential Equations
	Checking and Savings Accounts	Calculator With An Exponent Key
	Checking and Savings Accounts	Predicting Using Exponential Functions
	Checking and Savings Accounts	Graphing Exponential Equations
	Checking and Savings Accounts	Plotting the curve
	Checking and Savings Accounts	Predicting From the Curve
	Checking and Savings Accounts	Plotting a Decay Curve

		Checking and Savings Accounts	Simple Interest
		Checking and Savings Accounts	Compound Interest
		Checking and Savings Accounts	Working with Compound Interest
		Housing	Maximum Rent
		Housing	Buying a House
		Housing	Maximum to Spend on a House
		Housing	Finding Appreciation
		Housing	The Mortgage
4 Students demonstrate understanding of shape and an ability to use geometry.	4.1 construct, interpret, and draw three-dimensional objects.		
	4.2 classify figures in terms of congruence and similarity and apply these relationships.		
	4.3 translate between synthetic and coordinate representations.		
	4.4 deduce properties of figures using transformations, coordinates, and vectors in problem solving.		
	4.5 apply trigonometric ratios (sine, cosine and tangent) to problem situations involving triangles.		
5 Students demonstrate understanding of measurable attributes and an ability to use measurement processes.	5.1 apply concepts of indirect measurements (e.g., using similar triangles to calculate a distance).	Housing	Scale Drawings
	5.2 use dimensional analysis to check reasonableness of procedures.		
	5.3 investigate systems of derived measures (e.g., km/sec, g/cm ³).		
	5.4 apply the appropriate concepts of estimates in measurement, error in		

	measurement, tolerance, and precision.		
6 The students demonstrate understanding of and an ability to use data analysis, probability, and statistics.	6.1 use curve fitting to make predictions from data.	Checking and Savings Accounts	Plotting the curve Predicting From the Curve
	6.2 apply measures of central tendency and demonstrate understanding of the concepts of variability and correlation.	Deductions, Taxes, and Insurance	Mean, Median, and Mode
		Automobile Expenses	Mean Cost per Year
	6.3 select an appropriate sampling method for a given statistical analysis.		
	6.4 use experimental probability, theoretical probability, and simulation methods to represent and solve problems, including expected values.		
	6.5 design a statistical experiment to study a problem and communicate the outcomes.		
7 Students demonstrate understanding of and an ability to use patterns, relations and functions.	6.6 describe, in general terms, the normal curve and use its properties to answer questions about sets of data that are assumed to be normally distributed.	Checking and Savings Accounts	Plotting the curve Predicting From the Curve
	7.1 describe functions and their inverses using graphical, numerical, physical, algebraic, and verbal mathematical models or representations.		
	7.2 analyze the graphs of the families of polynomial, rational, power, exponential, logarithmic, and periodic functions.		
	7.3 analyze the effects of parameter changes on the graphs of functions and relations, including translations.		
	7.4 model real-world phenomena with a variety of functions.		
	7.5 use graphing for parametric equations, three-dimensional equations, and recursive relations.		