



# Alignment Document

## State of Pennsylvania And Aventa Learning Consumer Math

### Consumer Math 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
2.1.11	Numbers, Number Systems and Number Relationships		
2.1.11.A	Use operations (e.g., opposite, reciprocal, absolute value, raising to a power, finding roots, finding logarithms).		
2.2.11	Computation and Estimation		
2.2.11.A	Develop and use computation concepts, operations and procedures with real numbers in problem-solving situations.	Recreation and Spending	Parks and Sports
		Recreation and Spending	Eating Out
		Transportation	Taking a Road Trip
		Recreation and Spending	Costs of Recreation
		All About Jobs	Decimal Review
		All About Jobs	Review of Percents
		All About Jobs	Order of Operations
		All About Jobs	Wages and Tips
		Wages	Review of Fractions
		Wages	Time Cards
		Wages	Salary and Commission
		Wages	Review of Equations
		Deductions, Taxes, and Insurance	Payroll Deductions
		Deductions, Taxes, and Insurance	Health and Life Insurance
		Personal Finance	Net Worth and Purchasing Power

		Personal Finance	Budgets
		Checking and Savings Accounts	Checking Accounts
		Checking and Savings Accounts	Savings Accounts
		Credit	Using Credit Cards
		Credit	Loans
		Credit	Installment Buying
		Automobile Expenses	Car Loans
		Automobile Expenses	Operating Expenses
		Automobile Expenses	Renting Vehicles
		Housing	Renting an Apartment
		Housing	Buying a House
		Housing	Taxes and Insurance
		Housing	Decorating and Remodeling
2.2.11.B	Use estimation to solve problems for which an exact answer is not needed.	All About Jobs	Decimal Review
		All About Jobs	Review of Percents
		All About Jobs	Wages and Tips
		Housing	Decorating and Remodeling
2.2.11.C	Construct and apply mathematical models, including lines and curves of best fit, to estimate values of related quantities.	Personal Finances	Coordinate Plane and Linear Equations
		Personal Finances	Net Worth and Purchasing Power
		Checking and Savings Accounts	Exponential Equations
		Checking and Savings Accounts	Checking Accounts
		Checking and Savings Accounts	Savings Accounts
2.2.11.D	Describe and explain the amount of error that may exist in a computation using estimates.		
2.2.11.E	Recognize that the degree of precision needed in calculating a number depends on how the results will be used and the instruments used to generate the measure.		
2.2.11.F	Demonstrate skills for using computer spreadsheets and scientific and graphing calculators.		

2.3.11	Measurement and Estimation		
2.3.11.A	Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations.		
2.3.11.B	Measure and compare angles in degrees and radians.		
2.3.11.C	Demonstrate the ability to produce measures with specified levels of precision.		
2.4.11	Mathematical Reasoning and Connections		
2.4.11.A	Use direct proofs, indirect proofs or proof by contradiction to validate conjectures.		
2.4.11.B	Construct valid arguments from stated facts.		
2.4.11.C	Determine the validity of an argument.		
2.4.11.D	Use truth tables to reveal the logic of mathematical statements.		
2.4.11.E	Demonstrate mathematical solutions to problems (e.g., in the physical sciences).		
2.5.11	Mathematical Problem Solving and Communication		
2.5.11.A	Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.	Wages	Review of Equations
		Wages	Salary and Commission
		Personal Finance	Net Worth and Purchasing Power
		Deductions, Taxes, and Insurance	Health and Life Insurance
		Checking and Savings Accounts	Checking Accounts
		Checking and Savings Accounts	Savings Accounts
		Automobile Expenses	Car Loans
		Automobile Expenses	Operating Expenses
		Automobile Expenses	Renting Vehicles



		Credit	Using Credit Cards
		Credit	Loans
		Credit	Installment Buying
2.5.11.B	Use symbols, mathematical terminology, standard notation, mathematical rules, graphing and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas and results.	Checking and Savings Accounts	Plotting a Decay Curve
		Checking and Savings Accounts	Exponential Graphs
		Personal Finances	Graphing Using Slope and Y-Intercept
		Automobile Expenses	Comparing Costs
2.5.11.C	Present mathematical procedures and results clearly, systematically, succinctly and correctly.	All About Jobs	Unit Open Response-Job Search
		Wages	Unit Open Response-Adjusting Recipes and Dog House Dimensions
		Deductions, Taxes, and Insurance	Filling out 1040 EZ
		Deductions, Taxes, and Insurance	Unit Open Response-Health Insurance-Gross Pay-Percent Take Home
		Recreation and Spending	Unit Open Response-Catalog Order-Funding Recreation-Circle Graph
		Transportation	Unit Open Response-Planning and Paying for a Road Trip
		Personal Finances	Writing and Graphing Linear Equations by Tables
		Personal Finances	Writing and Graphing Linear Equations by Slope and Intercept
		Personal Finances	Unit Open Response-Comparing Consumer Costs
		Checking and Savings Accounts	Discussion-Comparing Banks
		Checking and Savings Accounts	Written Assignment 3-Growth of Ticket Prices
		Checking and Savings Accounts	Open Response-Managing Checking and Savings

		Credit	Unit Open Response- Managing Loans and Credit
		Automobile Expenses	Unit Open Response- Comparing Cars
		Housing	Unit Open Response- Furnishing and Decorating a Room
2.5.11.D	Conclude a solution process with a summary of results and evaluate the degree to which the results obtained represent an acceptable response to the initial problem and why the reasoning is valid.	Checking and Savings Accounts	Discussion-Comparing Banks
		Checking and Savings Accounts	Written Assignment 3- Growth of Ticket Prices
		Automobile Expenses	Unit Open Response- Comparing Cars
		Deductions, Taxes, and Insurance	Filling out 1040 EZ
		Deductions, Taxes, and Insurance	Unit Open Response-Health Insurance-Gross Pay- Percent Take Home
		All About Jobs	Topic Unit Open Response- Job Search
<b>2.6.11</b>	<b>Statistics and Data Analysis</b>		
2.6.11.A	Design and conduct an experiment using random sampling. Describe the data as an example of a distribution using statistical measures of center and spread. Organize and represent the results with graphs. (Use standard deviation, variance and t-tests.)		
2.6.11.B	Use appropriate technology to organize and analyze data taken from the local community.		
2.6.11.C	Determine the regression equation of best fit (e.g., linear, quadratic, exponential).		
2.6.11.D	Make predictions using interpolation, extrapolation, regression and estimation using technology to verify them.		
2.6.11.E	Determine the validity of the sampling method described in a given study.		

2.6.11.F	Determine the degree of dependence of two quantities specified by a two-way table.		
2.6.11.G	Describe questions of experimental design, control groups, treatment groups, cluster sampling and reliability.		
2.6.11.H	Use sampling techniques to draw inferences about large populations.		
2.6.11.I	Describe the normal curve and use its properties to answer questions about sets of data that are assumed to be normally distributed.		
2.7.11	Probability and Predictions		
2.7.11.A	Compare odds and probability.		
2.7.11.B	Apply probability and statistics to perform an experiment involving a sample and generalize its results to the entire population.		
2.7.11.C	Draw and justify a conclusion regarding the validity of a probability or statistical argument.		
2.7.11.D	Use experimental and theoretical probability distributions to make judgments about the likelihood of various outcomes in uncertain situations.		
2.7.11.E	Solve problems involving independent simple and compound events.		
2.8.11	Algebra and Functions		
2.8.11.A	Analyze a given set of data for the existence of a pattern and represent the pattern algebraically and graphically.		
2.8.11.B	Give examples of patterns that occur in data from other disciplines.		
2.8.11.C	Use patterns, sequences and series to solve routine and non-routine problems.		
2.8.11.D	Formulate expressions, equations, inequalities, systems of equations, systems of inequalities and matrices to model routine and non-routine problem situations.	Wages	Salary and Commission
		Wages	Review of Equations
		Wages	Salary and Commission
		All About Jobs	Wages and Tips

		Deductions, Taxes, and Insurance	Payroll Deductions
		Deductions, Taxes, and Insurance	Health and Life Insurance
		Recreation and Spending	Health Clubs and Fitness Classes
		Recreation and Spending	Buying Clothes and Shopping
		Recreation and Spending	Buying Food and Eating Out
		Transportation	Transportation
		Transportation	Taking Road Trips
		Personal Finances	Coordinate Plane and Linear Equations
		Personal Finances	Net Worth and Purchasing Power
		Personal Finances	Budgets
		Checking and Savings Accounts	Exponential Equations
		Checking and Savings Accounts	Savings Accounts
		Credit	Using Credit Cards
		Credit	Loans
		Credit	Installment Buying
		Automobile Expenses	Buying an Automobile
		Automobile Expenses	Operating Expenses
		Automobile Expenses	Other Car Topics
2.8.11.E	Use equations to represent curves (e.g., lines, circles, ellipses, parabolas, hyperbolas).	Checking and Savings Accounts	Exponential Equations
		Checking and Savings Accounts	Savings Accounts
		Personal Finances	Coordinate Plane and Linear Equations
		Personal Finances	Net Worth and Purchasing Power
		Personal Finances	Budgets
2.8.11.F	Identify whether systems of equations and inequalities are consistent or inconsistent.		
2.8.11.G	Analyze and explain systems of equations, systems of inequalities and matrices.		

2.8.11.H	Select and use an appropriate strategy to solve systems of equations and inequalities using graphing calculators, symbol manipulators, spreadsheets and other software.	Personal Finances	Unit Open Response- Comparing Consumer Costs
2.8.11.I	Use matrices to organize and manipulate data, including matrix addition, subtraction, multiplication and scalar multiplication.		
2.8.11.J	Demonstrate the connection between algebraic equations and inequalities and the geometry of relations in the coordinate plane.	Checking and Savings Accounts	Plotting a Decay Curve
2.8.11.K	Select, justify and apply an appropriate technique to graph a linear function in two variables, including slope-intercept, x- and y-intercepts, graphing by transformations and the use of a graphing calculator.	Personal Finances	Coordinate Plane and Linear Equations
2.8.11.L	Write the equation of a line when given the graph of the line, two points on the line, or the slope of the line and a point on the line.	Personal Finances	Coordinate Plane and Linear Equations
2.8.11.M	Given a set of data points, write an equation for a line of best fit.		
2.8.11.N	Solve linear, quadratic and exponential equations both symbolically and graphically.	Checking and Savings Accounts	Exponential Equations
		Checking and Savings Accounts	Exponential Graphs
		Checking and Savings Accounts	Graphing Exponential Equations
		Personal Finances	Coordinate Plane and Linear Equations
		Personal Finances	Net Worth and Purchasing Power
2.8.11.O	Determine the domain and range of a relation, given a graph or set of ordered pairs.		
2.8.11.P	Analyze a relation to determine whether a direct or inverse variation exists and represent it algebraically and graphically.		



2.8.11.Q	Represent functional relationships in tables, charts and graphs.	Checking and Savings Accounts	Exponential Graphs
		Checking and Savings Accounts	Graphing Exponential Equations
		Checking and Savings Accounts	Plotting a Decay Curve
		Personal Finances	Graphing an Equation Using Points
		Personal Finances	Graphing Using Slope and Y-Intercept
2.8.11.R	Create and interpret functional models.		
2.8.11.S	Analyze properties and relationships of functions (e.g., linear, polynomial, rational, trigonometric, exponential, logarithmic).		
2.8.11.T	Analyze and categorize functions by their characteristics.		