



Alignment Document  
State of Oregon and Aventa Learning Consumer Math

**Consumer Math**  
2005-2007 Benchmark Blueprint

Strand	Common Curriculum Goal	Standard	Unit Name	Course Topic Description
<b>MA.CM.CE</b> Calculations and Estimations	Understand numbers, ways of representing numbers, relationships among numbers, and number systems	<b>MA.CM.CE.01</b> Compare real numbers	Housing	Renting an Apartment
			All about Jobs	Fractions, Decimals, and Percents
		<b>MA.CM.CE.02</b> Order and compare numbers expressed in scientific notation to each other and to other forms of real numbers		
		<b>MA.CM.CE.03</b> Recognize that the set of real numbers contains the set of irrational numbers and the set of rational numbers and know the difference between them		
		<b>MA.CM.CE.04</b> Locate real numbers on a number line (including approximations of irrational numbers)		
		<b>MA.CM.CE.05</b> Apply equivalent forms of real numbers to solve problems	All about Jobs	Fractions, Decimals, and Percents
		Wages and Tips	Addition and Subtraction of Common Fractions	
		Wages and Tips	Multiplication of Fractions	
		Wages and Tips	Division of Fractions	
		Wages	Time Sheets & Time Cards	



			Deductions, Taxes, and Insurance	Payroll Deductions
			Deductions, Taxes, and Insurance	FICA Deductions
			Deductions, Taxes, and Insurance	Health and Life Insurance
<b>MA.CM.CE</b> Calculations and Estimations	Compute fluently and make reasonable estimates	<b>MA.CM.CE.06</b> Compute with real numbers, including absolute value and numbers expressed in scientific notation		
		<b>MA.CM.CE.07</b> Compute with integer exponents and whole number roots	Checking and Savings Accounts	Exponential Equations
		<b>MA.CM.CE.08</b> Mentally multiply and divide by powers of 10 to estimate results of computations involving numbers expressed in scientific notation	All about Jobs	Percents to Decimals or Fractions
		<b>MA.CM.CE.09</b> Develop and use strategies to estimate the results of real number computations, determine the amount of error, and judge the reasonableness of results	Recreation and Spending	Buying Food and Eating Out
			Recreation and Spending	Eating Out
			All about Jobs	Multiplication and Division of Whole Numbers and Decimals
			Transportation	Estimating Using Mileage Charts
			Transportation	Taking a Road Trip
Personal Finances	Purchasing Power			
Personal Finances	Savings and Graphs			
Credit	Finding the APR			

			Automobile Expenses	Operating Expenses
		<b>MA.CM.CE.10</b> Estimate the results of computations with integer powers and roots of real numbers.		
<b>MA.CM.CE</b> Calculations and Estimations	Understand meanings of operations and how they relate to one another	<b>MA.CM.CE.11</b> Recognize that taking the $n$ th root of a number corresponds to prime factorization		
		<b>MA.CM.CE.12</b> Use the inverse operations of $n$ th power and $n$ th root to solve problems and check solutions		
		<b>MA.CM.CE.13</b> Apply the associative, commutative, and distributive properties to simplify computations with real numbers	All about Jobs Wages Wages	Review of Order of Operations Solving Equations: Addition and Subtraction Solving Two-Step Equations
		<b>MA.CM.CE.14</b> Use properties of numbers to demonstrate whether assertions are true or false	All about Jobs Wages	Review of Order of Operations Solving Equations: Addition and Subtraction
<b>MA.CM.SP</b> Statistics and Probability	Select and use appropriate statistical methods to analyze data	<b>MA.CM.SP.01</b> Estimate from a graph or a set of data the mean and standard deviation of a normal distribution and draw conclusions about the distribution of data using measures of center and spread (e.g., analyze a variety of summary statistics and graphical displays)	Deductions, Taxes, and Insurance Automobile Expenses	Mean, Median, and Mode Preventative Maintenance and Repairs
		<b>MA.CM.SP.02</b> Analyze bivariate data and identify the type of function (linear, quadratic, exponential) that could be used to model the data		
<b>MA.CM.SP</b> Statistics and Probability	Understand and apply basic concepts of probability	<b>MA.CM.SP.03</b> Compute the probability of a compound event (e.g., toss a coin three times to find the probability of two heads)		



		<b>MA.CM.SP.04</b> Determine probabilities of dependent and independent events (e.g., use colored marbles with and without replacement)		
		<b>MA.CM.SP.05</b> Use conditional probability to solve problems (e.g., from a sample set for the roll of two tetrahedral die; given that a sum is even, what is the probability that the sum is 6?)		
		<b>MA.CM.SP.06</b> Determine all possible outcomes of a particular event or all possible arrangements of objects in a given set by applying counting strategies, combinations, and permutations		
<b>MA.CM.SP</b> Statistics and Probability	Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them	<b>MA.CM.SP.07</b> Determine appropriate designs for simulations (surveys, observational studies, and experiments) and modeling to study a problem and construct empirical probability distributions to represent results		
		<b>MA.CM.SP.08</b> Use matrices, histograms, scatter plots, stem-and-leaf plots, and box-and whisker-plots to interpret data	Deductions, Taxes, and Insurance	Tables and Graphs
		<b>MA.CM.SP.09</b> Identify examples of populations that are normally distributed		
<b>MA.CM.SP</b> Statistics and Probability	Develop and evaluate inferences and predictions that are based on data	<b>MA.CM.SP.10</b> Make inferences and predictions from data in histograms, scatter plots, and parallel box plots	Deductions, Taxes, and Insurance	Tables and Graphs
		<b>MA.CM.SP.11</b> Make predictions about populations based on reported sample statistics	Deductions, Taxes, and Insurance	Mean, Median and Mode
		<b>MA.CM.SP.12</b> Understand that inferences about a population drawn from a sample involve uncertainty and that the role of statistics is to measure that uncertainty		
<b>MA.CM.AR</b> Algebraic Relationships	Understand patterns, relations, and functions	<b>MA.CM.AR.01</b> Represent and generalize sequences resulting from linear, quadratic, and exponential relationships using recursive or explicit formulas, tables of values, and graphs	Wages Wages	Review of Equations Evaluating Expressions and Formulas



			Wages	Solving Equations: Addition and Subtraction
			Wages	Solving Equations: Multiplication and Division
			Wages	Solving Two-Step Equations
			Checking and Savings Accounts	Plotting a Decay Curve
			Checking and Savings Accounts	Graphing Exponential Equations
			Checking and Savings Accounts	Exponential Graphs
			Checking and Savings Accounts	Exponential Equations
			Personal Finances	Graphs of Equations
			Personal Finances	Writing Linear Equations
			Personal Finances	Graphing Using Slope and Y-Intercept
			Personal Finances	Graphing an Equation Using Points
			Personal Finances	Purchasing Power
			Transportation	Distance
		<b>MA.CM.AR.02</b> Produce a valid conjecture using inductive reasoning by generalizing from a pattern of observations		



		<p><b>MA.CM.AR.03</b> Evaluate and make a table for two-variable formulas and match a graph or table of values to its formula</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>Personal Finances</p> <p>Personal Finances</p> <p>Personal Finances</p> <p>Automobile Expenses</p>	<p>Plotting a Decay Curve</p> <p>Graphing Exponential Equations</p> <p>Exponential Graphs</p> <p>Exponential Equations</p> <p>Graphing Using Slope and Y-Intercept</p> <p>Graphing an Equation Using Points</p> <p>The Costs of Raising a Family</p> <p>Comparing Costs</p>
<p><b>MA.CM.AR</b> Algebraic Relationships</p>	<p>Represent and analyze mathematical situations and structures using algebraic symbols</p>	<p><b>MA.CM.AR.05</b> Algebraically represent situations and solve problems involving quadratic and exponential equations, including exponential growth and decay</p>	<p>Wages</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p>	<p>Review of Equations</p> <p>Exponential Graphs</p> <p>Exponential Equations</p> <p>Plotting a Decay Curve</p>



			Checking and Savings Accounts	Graphing Exponential Equations
			Checking and Savings Accounts	Compound Interest
			Housing	Buying a House
		<b>MA.CM.AR.06</b> Use graphs to solve non-linear equations, including quadratics	Checking and Savings Accounts	Plotting a Decay Curve
			Checking and Savings Accounts	Exponential Equations
			Checking and Savings Accounts	Graphing Exponential Equations
			Checking and Savings Accounts	Savings and Graphs
		<b>MA.CM.AR.07</b> Represent and solve systems of linear equations with two variables using simultaneous equations and by graphing.	Automobile Expenses	Comparing Costs
		<b>MA.CM.AR.08</b> Recognize and generate equivalent forms for algebraic expressions, including combining like terms and expanding binomials	Wages	Solving Two-Step Equations
		<b>MA.CM.AR.09</b> Evaluate algebraic expressions and formulas by substituting real numbers	Deductions, Taxes, and Insurance	Health and Life Insurance
			Wages	Evaluating Expressions and Formulas
			Transportation	Busses, Trains, Subways, and Taxis
			Transportation	Distance
			Personal Finances	Purchasing Power



			Personal Finances	Writing Linear Equations
			Housing	Taxes and Insurance Homeowner's Insurance
			Checking and Savings Accounts	Compound Interest
			Credit	Finding the APR
		<b>MA.CM.AR.10</b> Translate between and interpret quadratic and exponential relationships represented by words, symbols, tables, and graphs	Checking and Savings Accounts	Checking Accounts
			Checking and Savings Accounts	Plotting a Decay Curve
			Checking and Savings Accounts	Exponential Equations
			Checking and Savings Accounts	Graphing Exponential Equations
			Checking and Savings Accounts	Exponential Graphs
			Personal Finances	Graphing Using Slope and Y-Intercept
			Personal Finances	Graphing an Equation Using Points
			Automobile Expenses	Comparing Costs
		<b>MA.CM.AR.11</b> Determine and interpret maxima or minima and zeros of quadratic functions, and linear functions where $y = \text{constant}$		
		<b>MA.CM.AR.12</b> Graph linear inequalities in two variables		



		<p><b>MA.CM.AR.13</b> Graph quadratic and exponential equations</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>Personal Finances</p> <p>Personal Finances</p>	<p>Graphing Exponential Equations</p> <p>Exponential Graphs</p> <p>Plotting a Decay Curve</p> <p>Exponential Equations</p> <p>Graphing Using Slope and Y-Intercept</p> <p>Graphing an Equation Using Points</p>
		<p><b>MA.CM.AR.14</b> Analyze how changing a parameter (i.e., k, b) in a quadratic or exponential function of the form <math>y=k^x+b</math>, <math>y=kx^2+b</math>, or <math>y=k(x+b)^2</math> affects its graph</p>	<p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Personal Finances</p>	<p>Plotting a Decay Curve</p> <p>Exponential Graphs</p> <p>Graphing Exponential Equations</p> <p>Graphing Using Slope and Y-Intercept</p>
<p><b>MA.CM.AR</b> Algebraic Relationships</p>	<p>Use mathematical models to represent and understand quantitative relationships</p>	<p><b>MA.CM.AR.15</b> Model situations, make opinions and inferences, and solve problems using linear, quadratic, and exponential functions</p>	<p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p> <p>Checking and Savings Accounts</p>	<p>Exponential Graphs</p> <p>Exponential Equations</p> <p>Graphing Exponential Equations</p>



			Checking and Savings Accounts	Savings and Graphs
		<b>MA.CM.AR.16</b> Determine when data represented in a table or graph represents a linear, quadratic, or exponential relationship	Checking and Savings Accounts	Exponential Equations
			Personal Finances	Graphing an Equation Using Points
<b>MA.CM.AR</b> Algebraic Relationships	Analyze change in various contexts	<b>MA.CM.AR.17</b> Approximate and interpret rates of change in graphical and numeric data	Personal Finances	Writing Linear Equations
		<b>MA.CM.AR.18</b> Analyze the nature of change of each variable in a non-linear relationship as suggested by a table of values, a graph, or a formula	Checking and Savings Accounts	Exponential Graphs
			Checking and Savings Accounts	Plotting a Decay Curve
			Checking and Savings Accounts	Exponential Equations
			Checking and Savings Accounts	Graphing Exponential Equations
			Deductions, Taxes, and Insurance	Payroll Deductions
			Deductions, Taxes, and Insurance	Federal Income Tax
			Deductions, Taxes, and Insurance	Health and Life Insurance
			Recreation and Spending	Buying Clothes
			Recreation and Spending	Eating Out



			Recreation and Spending	Buying Clothes and Shopping
			Wages	Evaluating Expressions and Formulas
			Wages	Time Sheets And Time Cards
			Personal Finances	Graphing an Equation Using Points
			Personal Finances	Graphing Using Slope and Y-Intercept
			Personal Finances	Purchasing Power
			Transportation	Estimating Using Mileage Charts
			Transportation	Busses, Trains, Subways, and Taxis
			Transportation	Distance
			Housing	Taxes and Insurance
			Automobile Expenses	Homeowner's Insurance Comparing Costs
			Credit	Finding the APR
<b>MA.CM.ME</b> Measurement	Understand measurable attributes of objects and the units, systems and processes of measurement	<b>MA.CM.ME.01</b> Determine the appropriate units, scales, and tools for problem situations involving measurement	Housing	Decorating and Remodeling
		<b>MA.CM.ME.02</b> Solve problems involving unit conversions (e.g., mile per hour to feet per second) given the unit equivalencies.		



		<b>MA.CM.ME.03</b> Determine the precision of a given measuring tool (e.g., 1 degree for a standard protractor)		
<b>MA.CM.ME</b> Measurement	Apply appropriate techniques, tools, and formulas to determine measurements	<b>MA.CM.ME.04</b> Develop and use strategies and formulas for calculating surface area and volume of cones and spheres		
		<b>MA.CM.ME.05</b> Use formulas to solve problems involving finding missing dimensions given perimeter, area, surface area, and volume of polygons, circles, prisms, pyramids, cones, cylinders, and spheres	Housing	Decorating and Remodeling
		<b>MA.CM.ME.06</b> Develop and understand, and use the formula for determining arc length (e.g., portion of a circle).		
		<b>MA.CM.ME.07</b> Determine perimeter and area of shapes of circles and polygons (annulus, etc.) in context	Housing	Decorating and Remodeling
		<b>MA.CM.ME.08</b> Determine the surface area and volume of a complex figure composed of a combination of two or more geometric figures or a figure derived from a regular solid (e.g., hemisphere, frustum of a cone)		
		<b>MA.CM.ME.09</b> Compare and contrast the formulas for surface area and volume of cylinders and cones		
		<b>MA.CM.ME.10</b> Determine a shape that has minimum or maximum perimeter, area, surface area, or volume under specified conditions	Housing	Decorating and Remodeling
		<b>MA.CM.ME.11</b> Make and use scale drawings and models to solve problems	Housing	Scale Drawings



<p><b>MA.CM.PS</b> Mathematical Problem Solving</p>	<p>Select, apply, and translate among mathematical representations to solve problems.</p>	<p><b>MA.CM.PS.01</b> Interpret the concepts of a problem-solving task and translate them into mathematics</p>	<p>All about Jobs All about Jobs All about Jobs All about Jobs All about Jobs Wages Wages Wages Wages Wages Wages Wages Deductions, Taxes, and Insurance Deductions, Taxes, and Insurance</p>	<p>Decimal Review Multiplication and Division of Whole Numbers and Decimals Computing Pay by Hourly Wages Percent of a Number Wages and Tips Review of Fractions Multiplication and Division of Fractions Time Sheets And Time Cards Evaluating Expressions and Formulas Solving Equations Solving Two-Step Equations Salary and Commission Payroll Deductions</p>
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			Deductions, Taxes, and Insurance	FICA Deductions
			Deductions, Taxes, and Insurance	Health and Life Insurance
			Deductions, Taxes, and Insurance	Federal Income Tax
			Deductions, Taxes, and Insurance	Federal Tax Table
			Recreation and Spending	Movies and Shows
			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 and Shopping
			Recreation and Spending	Catalog Shopping
			Recreation and Spending	Buying Food and Eating Out
			Transportation	Air Travel and Time Zones Busses, Trains, Subways, and Taxis



			Transportation	Distance
			Transportation	Estimating Using Mileage Charts
			Transportation	Taking a Road Trip
			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	Budgets
			Personal Finances	Budgeting Expenses
			Personal Finances	The Costs of Raising a Family
			Checking and Savings Accounts	Exponential Equations
			Checking and Savings Accounts	The Check Register
			Checking and Savings Accounts	Savings Accounts
			Credit	Credit Finance Charges
			Credit	Loans



			Credit	Using Tables to Find Monthly Payments
			Credit	Installment Buying
			Credit	Finding the APR
			Automobile Expenses	Buying a New Automobile
			Automobile Expenses	Auto Loans
			Automobile Expenses	Operating Expenses
			Automobile Expenses	Preventative Maintenance and Repairs
			Automobile Expenses	Car Rental Costs
			Automobile Expenses	Comparing Costs
			Housing	Buying a House
			Housing	The Mortgage
			Housing	Taxes and Insurance
			Housing	Scale Drawings
<b>MA.CM.PS</b> Mathematical Problem Solving	Apply and adapt a variety of appropriate strategies to solve problems.	<b>MA.CM.PS.01</b> Choose strategies that can work and then carry out the strategies chosen	All about Jobs	Decimal Review
			All about Jobs	Multiplication and Division of Whole Numbers and Decimals
			All about Jobs	Computing Pay by Hourly Wages
			All about Jobs	Percent of a Number



			All about Jobs	Wages and Tips
			Wages	Review of Fractions
			Wages	Multiplication and Division of Fractions
			Wages	Time Sheets And Time Cards
			Wages	Evaluating Expressions and Formulas
			Wages	Solving Equations
			Wages	Solving Two-Step Equations
			Wages	Salary and Commission
			Deductions, Taxes, and Insurance	Payroll Deductions
			Deductions, Taxes, and Insurance	FICA Deductions
			Deductions, Taxes, and Insurance	Health and Life Insurance
			Deductions, Taxes, and Insurance	Federal Income Tax
			Deductions, Taxes, and Insurance	Federal Tax Table
			Recreation and Spending	Movies and Shows



			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 and Shopping
			Recreation and Spending	Catalog Shopping
			Recreation and Spending	Buying Food and Eating Out
			Transportation	Air Travel and Time Zones Busses, Trains, Subways, and Taxis
			Transportation	Distance
			Transportation	Estimating Using Mileage Charts
			Transportation	Taking a Road Trip
			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	Budgets
			Personal Finances	Budgeting Expenses
			Personal Finances	The Costs of Raising a Family
			Checking and Savings Accounts	Exponential Equations
			Checking and Savings Accounts	The Check Register
			Checking and Savings Accounts	Savings Accounts
			Credit	Credit Finance Charges
			Credit	Loans
			Credit	Using Tables to Find Monthly Payments
			Credit	Installment Buying Finding the APR
			Automobile Expenses	Buying a New Automobile
			Automobile Expenses	Auto Loans
			Automobile Expenses	Operating Expenses
			Automobile Expenses	Preventative Maintenance and Repairs



			Automobile Expenses Automobile Expenses Housing Housing Housing Housing	Car Rental Costs Comparing Costs Buying a House The Mortgage Taxes and Insurance Scale Drawings
<b>MA.CM.PS</b> Mathematical Problem Solving	Monitor and reflect on the process of mathematical problem solving.	<b>MA.CM.PS.03</b> Produce identifiable evidence of a second look at the concepts/strategies/calculations to defend a solution	Wages Deductions, Taxes, and Insurance Recreation and Spending Transportation Credit	Solving Equations: Multiplication and Division Life insurance discussion Buying Food and Eating Out Air Travel and Time Zones Finding the APR
<b>MA.CM.PS</b> Mathematical Problem Solving	Communicate mathematical thinking coherently and clearly. Use the language of mathematics to express mathematical ideas precisely.	<b>MA.CM.PS.04</b> Use pictures, symbols, and/or vocabulary to convey the path to the identified solution		
<b>MA.CM.PS</b> Mathematical Problem Solving	Accurately solve problems that arise in mathematics and other contexts.	<b>MA.CM.PS.05</b> Accurately solve problems using mathematics	All about Jobs All about Jobs All about Jobs	Decimal Review Multiplication and Division of Whole Numbers and Decimals Computing Pay by Hourly Wages



			All about Jobs	Percent of a Number
			All about Jobs	Wages and Tips
			Wages	Review of Fractions
			Wages	Multiplication and Division of Fractions
			Wages	Time Sheets And Time Cards
			Wages	Evaluating Expressions and Formulas
			Wages	Solving Equations
			Wages	Solving Two-Step Equations
			Wages	Salary and Commission
			Deductions, Taxes, and Insurance	Payroll Deductions
			Deductions, Taxes, and Insurance	FICA Deductions
			Deductions, Taxes, and Insurance	Health and Life Insurance
			Deductions, Taxes, and Insurance	Federal Income Tax
			Deductions, Taxes, and Insurance	Federal Tax Table



			Recreation and Spending	Movies and Shows
			Recreation and Spending	Parks and Sports
			Recreation and Spending	Costs of Recreation
			Recreation and Spending	Health Clubs and Fitness Classes
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			Recreation and Spending	Catalog Shopping
			Recreation and Spending	Buying Food and Eating Out
			Transportation	Air Travel and Time Zones Busses, Trains, Subways, and Taxis
			Transportation	Distance
			Transportation	Estimating Using Mileage Charts
			Transportation	Taking a Road Trip
			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	Budgets
			Personal Finances	Budgeting Expenses
			Personal Finances	The Costs of Raising a Family
			Checking and Savings Accounts	Exponential Equations
			Checking and Savings Accounts	The Check Register
			Checking and Savings Accounts	Savings Accounts
			Credit	Credit Finance Charges
			Credit	Loans
			Credit	Using Tables to Find Monthly Payments
			Credit	Installment Buying
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			Automobile Expenses	Buying a New Automobile
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			Automobile Expenses	Operating Expenses
			Automobile Expenses	Preventative Maintenance and Repairs
			Automobile Expenses	Car Rental Costs
			Automobile Expenses	Comparing Costs
			Housing	Buying a House
			Housing	The Mortgage
			Housing	Taxes and Insurance
			Housing	Scale Drawings