



Alignment Document
State of Texas (TAKS)
And
Aventa Learning Consumer Math

Consumer Math
 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
1	The student will describe functional relationships in a variety of ways.		
1.A.1	The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways.		
1.A.1.A	describe independent and dependent quantities in functional relationships;		
1.A.1.B	[gather and record data and] use data sets to determine functional relationships between quantities;		
1.A.1.C	describe functional relationships for given problem situations and write equations or inequalities to answer questions arising from the situations;	Checking and Savings Accounts	Exponential Equations
		Personal Finances	The Costs of Raising a Family
		Wages	Solving Two-Step Equations
		Wages	Solving Equations: Addition and Subtraction
		Wages	Commission
		Wages	Review of Equations
		Wages	Solving Equations: Multiplication and Division
		Wages	Salary and Commission



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1.A.1.D	represent relationships among quantities using [concrete] models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities; and	Personal Finances	The Costs of Raising a Family
		Personal Finances	Graphing Using Slope and Y-Intercept
		Personal Finances	Graphing an Equation Using Points
		Wages	Salary and Commission
		Wages	Solving Equations: Multiplication and Division
		Wages	Review of Equations
		Wages	Solving Equations: Addition and Subtraction
		Wages	Commission
		Wages	Solving Two-Step Equations
		Automobile Expenses	Comparing Costs
		Automobile Expenses	Preventive Maintenance and Repairs
		Checking and Savings Accounts	Plotting a Decay Curve
		Checking and Savings Accounts	Exponential Graphs
		Checking and Savings Accounts	Graphing Exponential Equations
		Checking and Savings Accounts	Exponential Equations
		Checking and Savings Accounts	Savings and Graphs
		Deductions, Taxes, and Insurance	Tables and Graphs
		Credit	Credit Finance Charges
		Credit	Loans
		Credit	Using Tables to Find Monthly Payments
1.A.1.E	interpret and make decisions, predictions, and critical judgments from functional relationships.	Checking and Savings Accounts	Exponential Graphs
		Checking and Savings Accounts	Exponential Equations
2	The student will demonstrate an understanding of the properties and attributes of functions.		
2.A.2	The student uses the properties and attributes of functions.		



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2.A.2.A	identify [and sketch] the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions;		
2.A.2.B	identify mathematical domains and ranges and determine reasonable domain and range values for given situations, both continuous and discrete;		
2.A.2.C	interpret situations in terms of given graphs [or create situations that fit given graphs]; and	Checking and Savings Accounts	Plotting a Decay Curve
		Checking and Savings Accounts	Graphing Exponential Equations
		Checking and Savings Accounts	Exponential Graphs
		Automobile Expenses	Comparing Costs
		Personal Finances	Graphing Using Slope and Y-Intercept
2.A.2.D	[collect and] organize data, [make and] interpret scatterplots (including recognizing positive, negative, or no correlation for data approximating linear situations), and model, predict, and make decisions and critical judgments in problem situations.	Checking and Savings Accounts	Exponential Graphs
		Checking and Savings Accounts	Exponential Equations
		Personal Finance	Graphing Using Slope and Y-Intercept
2.A.3	The student understands how algebra can be used to express generalizations and recognizes and uses the power of symbols to represent situations.		
2.A.3.A	use symbols to represent unknowns and variables; and	Wages	Review of Equations
		Recreation and Spending	Buying Clothes and Shopping
		Transportation	Distance
		Credit	Finding APR
		Housing	Buying a House
		Housing	Decorating and Remodeling
		Checking and Savings Accounts	Simple Interest
		Checking and Savings Accounts	Compound Interest
2.A.3.B	look for patterns and represent generalizations algebraically.		



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2.A.4	The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations.		
2.A.4.A	find specific function values, simplify polynomial expressions, transform and solve equations, and factor as necessary in problem situations;	Checking and Savings Accounts	Exponential Equations
		Personal Finances	The Costs of Raising a Family
		Wages	Solving Two-Step Equations
		Wages	Solving Equations: Multiplication and Division
		Wages	Evaluating Expressions and Formulas
		Wages	Commission
		Wages	Solving Equations: Addition and Subtraction
		Wages	Salary and Commission
2.A.4.B	use the commutative, associative, and distributive properties to simplify algebraic expressions; and	Wages	Evaluating Expressions and Formulas
2.A.4.C	connect equation notation with function notation, such as $y = x + 1$ and $f(x) = x + 1$.	Wages	Commission
		Wages	Solving Equations: Addition and Subtraction
		Wages	Salary and Commission
		Wages	Review of Equations
		Wages	Solving Two-Step Equations
		Wages	Solving Equations: Multiplication and Division
		Personal Finances	The Costs of Raising a Family
		Checking and Savings Accounts	Exponential Equations
3	The student will demonstrate an understanding of linear functions.		
3.A.5	The student understands that linear functions can be represented in different ways and translates among their various representations.		



3.A.5.A	determine whether or not given situations can be represented by linear functions; and		
3.A.5.C	use, translate, and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions.	Wages	Review of Equations
3.A.6	The student understands the meaning of the slope and intercepts of the graphs of linear functions and zeros of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.		
3.A.6.A	develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations;	Deductions, Taxes, and Insurance	Life Insurance
		Personal Finances	Writing Linear Equations
		Recreation and Spending	Movies and Shows
3.A.6.B	interpret the meaning of slope and intercepts in situations using data, symbolic representations, or graphs;		
3.A.6.C	investigate, describe, and predict the effects of changes in m and b on the graph of $y = mx + b$;	Checking and Savings Accounts	Exponential Graphs
		Checking and Savings Accounts	Exponential Equations
3.A.6.D	graph and write equations of lines given characteristics such as two points, a point and a slope, or a slope and y -intercept;	Personal Finances	Graphing an Equation Using Points
		Personal Finances	Graphs of Equations
		Personal Finances	Graphing Using Slope and Y -Intercept
		Checking and Savings Accounts	Plotting a Decay Curve
		Checking and Savings Accounts	Graphing Exponential Equations
3.A.6.E	determine the intercepts of the graphs of linear functions and zeros of linear functions from graphs, tables, and algebraic representations;	Recreation and Spending	Movies and Shows
		Deductions, Taxes, and Insurance	Life Insurance
3.A.6.F	interpret and predict the effects of changing slope and y -intercept in applied situations; and	Checking and Savings Accounts	Exponential Equations
		Checking and Savings Accounts	Exponential Graphs
3.A.6.G	relate direct variation to linear functions and solve problems involving proportional change.	Housing	Scale Drawings



4	The student will formulate and use linear equations and inequalities.		
4.A.7	The student formulates equations and inequalities based on linear functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation.		
4.A.7.A	analyze situations involving linear functions and formulate linear equations or inequalities to solve problems;	Personal Finances	Writing Linear Equations
		Personal Finances	Graphing an Equation Using Points
4.A.7.B	investigate methods for solving linear equations and inequalities using [concrete] models, graphs, and the properties of equality, select a method, and solve the equations and inequalities; and	Personal Finances	Writing Linear Equations
		Personal Finances	The Costs of Raising a Family
		Personal Finances	Graphing Using Slope and Y-Intercept
		Personal Finances	Graphing an Equation Using Points
		Checking and Savings Accounts	Graphing Exponential Equations
		Checking and Savings Accounts	Plotting a Decay Curve
		Wages	Solving Equations: Addition and Subtraction
4.A.7.C	interpret and determine the reasonableness of solutions to linear equations and inequalities.	Personal Finances	Graphing an Equation Using Points
		Personal Finances	Writing Linear Equations
4.A.8	The student formulates systems of linear equations from problem situations, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation.		
4.A.8.A	analyze situations and formulate systems of linear equations in two unknowns to solve problems.		
5	The student will demonstrate an understanding of quadratic and other nonlinear functions.		



5.A.9	The student understands that the graphs of quadratic functions are affected by the parameters of the function and can interpret and describe the effects of changes in the parameters of quadratic functions.		
5.A.9.C	investigate, describe, and predict the effects of changes in c on the graph of $y = ax^2 + c$.	Checking and Savings Accounts	Graphing Exponential Equations
		Checking and Savings Accounts	Exponential Graphs
		Checking and Savings Accounts	Exponential Equations
		Checking and Savings Accounts	Plotting a Decay Curve
		Automobile Expenses	Comparing Costs
		Personal Finances	Graphs of Equations
		Personal Finances	Graphing Using Slope and Y-Intercept
		Personal Finances	Graphing an Equation Using Points
5.A.11	The student understands there are situations modeled by functions that are neither linear nor quadratic and models the situations.		
5.A.11.A	use [patterns to generate] the laws of exponents and apply them in problem-solving situations.		
6	The student will demonstrate an understanding of geometric relationships and spatial reasoning.		
6.8.6	The student uses transformational geometry to develop spatial sense.		
6.8.6.A	generate similar figures using dilations including enlargements and reductions; and		
6.8.6.B	graph dilations, reflections, and translations on a coordinate plane.		
6.8.7	The student uses geometry to model and describe the physical world.		
6.8.7.D	locate and name points on a coordinate plane using ordered pairs of rational numbers.	Personal Finances	Graphing an Equation Using Points
		Personal Finances	Graphs of Equations
7	The student will demonstrate an understanding of two- and three-dimensional representations of geometric relationships and shapes.		
7.8.7	The student uses geometry to model and describe the physical world.		



7.8.7.A	draw three-dimensional figures from different perspectives;		
7.8.7.B	use geometric concepts and properties to solve problems in fields such as art and architecture; and		
7.8.7.C	use pictures or models to demonstrate the Pythagorean Theorem.		
8	The student will demonstrate an understanding of the concepts and uses of measurement and similarity.		
8.8.8	The student uses procedures to determine measures of three-dimensional figures.		
8.8.8.A	find lateral and total surface area of prisms, pyramids, and cylinders using [concrete] models and nets (two-dimensional models);		
8.8.8.B	connect models of prisms, cylinders, pyramids, spheres, and cones to formulas for volume of these objects; and		
8.8.8.C	estimate measurements and use formulas to solve application problems involving lateral and total surface area and volume.		
8.8.9	The student uses indirect measurement to solve problems.		
8.8.9.A	use the Pythagorean Theorem to solve real-life problems; and	Checking and Savings Accounts	The Check Register
		Checking and Savings Accounts	Savings Accounts
		Checking and Savings Accounts	Checking Accounts
		Automobile Expenses	Used Cars
8.8.9.B	use proportional relationships in similar two-dimensional figures or similar three-dimensional figures to find missing measurements.	Housing	Scale Drawings
8.8.10	The student describes how changes in dimensions affect linear, area, and volume measures.		
8.8.10.A	describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionally; and	Housing	Scale Drawings
		Housing	Decorating and Remodeling
8.8.10.B	describe the resulting effect on volume when dimensions of a solid are changed proportionally.	Housing	Scale Drawings



9	The student will demonstrate an understanding of percents, proportional relationships, probability, and statistics in application problems.		
9.8.1	The student understands that different forms of numbers are appropriate for different situations.		
9.8.1.B	select and use appropriate forms of rational numbers to solve real-life problems including those involving proportional relationships.	Checking and Savings Accounts	Savings Accounts
		Checking and Savings Accounts	The Check Register
		Checking and Savings Accounts	Checking Accounts
		Housing	Scale Drawings
		Automobile Expenses	Used Cars
9.8.3	The student identifies proportional or non-proportional linear relationships in problem situations and solves problems.		
9.8.3.B	estimate and find solutions to application problems involving percents and other proportional relationships such as similarity and rates.	Automobile Expenses	Buying a New Automobile
		Automobile Expenses	Operating Expenses
		Personal Finances	Budgets
		Personal Finances	Budgeting Expenses
		Personal Finances	Purchasing Power
		All about jobs	Percent of a Number
		All about jobs	Percents to Decimals or Fractions
		Transportation	Busses, Trains, Subways, and Taxis
		Recreation and Spending	Health Clubs and Fitness Classes
		Housing	Scale Drawings
9.8.11	The student applies concepts of theoretical and experimental probability to make predictions.		
9.8.11.A	find the probabilities of dependent and independent events; and		
9.8.11.B	use theoretical probabilities and experimental results to make predictions and decisions.	Checking and Savings Accounts	Exponential Graphs
		Checking and Savings Accounts	Exponential Equations



9.8.12	The student uses statistical procedures to describe data.		
9.8.12.A	select the appropriate measure of central tendency or range to describe a set of data and justify the choice for a particular situation; and		
9.8.12.C	select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, [stem and leaf plots,] circle graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams, with and without the use of technology.	Deductions, Taxes, and Insurance	Tables and Graphs
9.8.13	The student evaluates predictions and conclusions based on statistical data.		
9.8.13.B	recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis.	Checking and Savings Accounts	Exponential Graphs
		Checking and Savings Accounts	Exponential Equations
10	The student will demonstrate an understanding of the mathematical processes and tools used in problem solving.		
10.8.14	The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.		
10.8.14.A	identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;	All About Jobs	Computing Pay by Hourly Wages
			Wages and Tips
		Wages	Forms and Time Card
		Wages	Time Sheets and Time Cards
		Wages	Salary and Commission
		Wages	Commission
		Deductions, Taxes, and Insurance	Payroll Deductions
		Deductions, Taxes, and Insurance	FICA Deductions
		Deductions, Taxes, and Insurance	Federal Income Tax
		Deductions, Taxes, and Insurance	Filling out the Form



		Recreation and Spending	Buying Clothes and Shopping
		Recreation and Spending	Shopping
		Recreation and Spending	Catalog Shopping
		Recreation and Spending	Eating Out
		Recreation and Spending	Buying Food
		Credit	Credit Finance Charge
		Credit	Loans
		Automobile Expenses	Buying a New Automobile
		Automobile Expenses	Used Cars
		Housing	Renting an Apartment
		Checking and Savings Accounts	The Check Register
		Checking and Savings Accounts	Checking Accounts
		Checking and Savings Accounts	Savings Account
10.8.14.B	use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; and	Credit	Installment Buying
10.8.14.C	select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem.	Recreation and Spending	Eating Out
		Recreation and Spending	Costs of Recreation
		Recreation and Spending	Movies and Shows
		Recreation and Spending	Parks and Sports
		Transportation	Taking a Road Trip
10.8.15	The student communicates about Grade 8 mathematics through informal and mathematical language, representations, and models.		



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10.8.15.A	communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models.		
10.8.16	The student uses logical reasoning to make conjectures and verify conclusions.		
10.8.16.A	make conjectures from patterns or sets of examples and nonexamples; and		
10.8.16.B	validate his/her conclusions using mathematical properties and relationships.		