

TAKS Mathematics Comparison Chart

TAKS Mathematics Comparison Chart (Revised on 11/26/01)

TEKS	Pre-Algebra and 8 th Grade Mathematics	TAKS (9)	TAKS (10)	TAKS (11-Exit)
8.1.A	Compare and order rational numbers in various forms including integers, percents, and positive and negative fractions and decimals.			
8.1.B	Select and use appropriate forms of rational numbers to solve real-life problems including those involving proportional relationships.	xx		
8.1.C	Approximate (mentally and with calculators) the value of irrational numbers as they arise from problem situations.			
8.1.D	Express numbers in scientific notation, including negative exponents, in appropriate problem situations using a calculator.			
8.2.A	Select and use appropriate operations to solve problems and justify the selections.			
8.2.B	Add, subtract, multiply, and divide rational numbers in problem situations.			
8.2.C	Evaluate a solution for reasonableness.			
8.2.D	Use multiplication by a constant factor to represent proportional relationships.			
8.3.A	Compare and contrast proportional and non-proportional relationships.			
8.3.B	Estimate and find solutions to application problems involving percents and proportional relationships such as similarity and rates.	xx	xx	xx
8.4	Generate a different representation given one representation of data such as a table, graph, equation, or verbal description.			
8.5.A	Estimate, find, and justify solutions to application problems using appropriate tables, graphs, and algebraic equations.			
8.6.A	Generate similar shapes using dilations including enlargements and reductions.	xx	xx	
8.6.B	Graph dilations, reflections, and translations on a coordinate plane.	xx	xx	
8.7.A	Draw solids from different perspectives.	xx	xx	
8.7.B	Use geometric concepts and properties to solve problems in fields such as art and architecture.	xx	xx	
8.7.C	Use pictures or models to demonstrate the Pythagorean Theorem.	xx	xx	
8.7.D	Locate and name points on a coordinate plane using ordered pairs of rational numbers.	xx	xx	
8.8.A	Find surface area of prisms and cylinders using concrete models and nets.	xx	xx	
8.8.B	Connect models to formulate for volume of prisms, cylinders, pyramids, and cones.	xx	xx	
8.8.C	Estimate answers and use formulas to solve application problems involving surface area and volume.	xx	xx	
8.9.A	Use the Pythagorean Theorem to solve real-life problems.	xx	xx	
8.9.B	Use proportional relationships in similar shapes to find missing measurements.	xx	xx	
8.10.A	Describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionally.	xx	xx	
8.10.B	Describe the resulting effect on volume when dimensions of a solid are changed proportionally.	xx	xx	
8.11.A	Find the probabilities of compound events.	xx	xx	xx
8.11.B	Use theoretical probabilities and experimental results to make predictions and decisions.	xx	xx	xx
8.12.A	Select the appropriate measure of central tendency to describe a set of data for a particular purpose.	xx	xx	xx
8.12.C	Construct circle graphs, bar graphs, and histograms, with and without technology.	xx	xx	xx
8.13.B	Recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis.	xx	xx	xx
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.	xx	xx	xx
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.	xx	xx	xx
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.	xx	xx	xx
8.15.A	Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models.	xx	xx	xx
8.16.A	Make conjectures from patterns or sets of examples and nonexamples.	xx	xx	xx
8.16.B	Validate his/her conclusions using mathematical properties and relationships.	xx	xx	xx
Algebra I				
A.b.1.A	Describes independent and dependent quantities in functional relationships.	xx	xx	xx
A.b.1.B	Gathers and records data, or uses data sets, to determine functional relationships between quantities.	xx	xx	xx
A.b.1.C	Describes functional relationships for given problem situations and writes equations or inequalities to answer questions arising from the situations.	xx	xx	xx
A.b.1.D	Represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations and inequalities.	xx	xx	xx
A.b.1.E	Interprets and makes inferences from functional relationships.	xx	xx	xx
A.b.2.A	Identifies and sketches the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions	xx	xx	xx
A.b.2.B	Identifies the mathematical domains and ranges and determines reasonable domain and range values for given situations.	xx	xx	xx

A.b.2.C	Interprets situations in terms of given graphs or creates situations that fit given graphs.	xx	xx	xx
A.b.2.D	Collects and organizes data, makes and interprets scatter plots.	xx	xx	xx
A.b.3.A	Uses symbols to represent unknowns and variables.	xx	xx	xx
A.b.3.B	Looks for patterns and represents generalizations algebraically.	xx	xx	xx
A.b.4.A	Finds specific function values, simplifies polynomial expressions, transforms and solves equations, and factors as necessary in problem situations.	xx	xx	xx
A.b.4.B	Uses the commutative, associative, and distributive properties to simplify algebraic expressions.	xx	xx	xx
A.c.1.A	Determines whether or not given situations can be represented by linear functions.	xx	xx	xx
A.c.1.B	Determines the domain and range values for which linear functions make sense for given situations.			
A.c.1.C	Translates among and uses algebraic, tabular, graphical, or verbal descriptions of linear functions.	xx	xx	xx
A.c.2.A	Develops the concept of slope as rate of change and determines slopes from graphs, tables, and algebraic representations.	xx	xx	xx
A.c.2.B	Interprets the meaning of slope and intercepts in situations using data, symbolic representation, or graphs.	xx	xx	xx
A.c.2.C	Investigates, describes, and predicts the effects of changes in m and b on the graph of $y = mx + b$.	xx	xx	xx
A.c.2.D	Graphs and writes equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept.	xx	xx	xx
A.c.2.E	Determines the intercepts of linear functions from graphs, tables, and algebraic representations.	xx	xx	xx
A.c.2.F	Interprets and predicts the effects of changing slope and y-intercept in applied situations.	xx	xx	xx
A.c.2.G	Relates direct variation to linear functions and solves problems involving proportional change.	xx	xx	xx
A.c.3.A	Analyzes situations involving linear functions and formulates linear equations or inequalities to solve problems.	xx	xx	xx
A.c.3.B	Investigates methods for solving linear equations and inequalities using concrete models, graphs, and the properties of equality, selects a method, and solves the equations and inequalities.	xx	xx	xx
A.c.3.C	Given contexts, interprets and determines the reasonableness of solutions to linear equations and inequalities.	xx	xx	xx
A.c.4.A	Analyzes situations and formulates systems of linear equations to solve problems.	xx	xx	xx
A.c.4.B	Solves systems of linear equations using concrete models, graphs, tables, and algebraic methods.		xx	xx
A.c.4.C	Interprets and determines the reasonableness of solutions to systems of linear equations.		xx	xx
A.d.1.A	Determines the domain and range values for which quadratic functions make sense for given situations.			
A.d.1.B	Investigates, describes, and predicts the effects of changes in the graph of $y = ax^2$.		xx	xx
A.d.1.C	Investigates, describes, and predicts the effects of changes in c on the graph of $y = ax^2 + c$.	xx	xx	xx
A.d.1.D	Analyzes graphs of quadratic functions and draws conclusions.		xx	xx
A.d.2.A	Solves quadratic equations using concrete models, tables, graphs, and algebraic methods.		xx	xx
A.d.2.B	Relates the solutions of quadratic equations to the roots of their functions.		xx	xx
A.d.3.A	Uses patterns to generate the laws of exponents and applies them in problem-solving situations.	xx	xx	xx
A.d.3.C	Analyzes data and represents situations involving inverse variation using concrete models, tables, graphs or algebraic methods.			
	Geometry			
G.b.4	Selects an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems.			xx
G.c.1.A	Uses numeric and geometric patterns to make generalizations about geometric properties, including properties of polygons, ration in similar figures and solids, and angle relationships in polygons and circles.			xx
G.c.1.B	Uses the properties of transformations and their compositions to make connections between mathematics and the real world in applications such as tessellations or fractals.			xx
G.c.1.C	Identifies and applies patterns from right triangles to solve problems, including special right triangles (45-45-90 and 30-60-90) and triangles whose are Pythagorean triples.			xx
G.d.1.B	Uses nets to represent and construct three-dimensional objects			xx
G.d.1.C	Uses top, front, side, and corner views of three-dimensional object to create accurate and complete representations and solve problems.			xx
G.d.2.A	Uses one- and two-dimensional coordinate systems to represent points, lines, line segments, and figures.			xx
G.d.2.B	Uses slopes and equations of lines to investigate geometric relationships, including parallel lines, perpendicular lines, and special segments of triangle and other polygons.			xx
G.d.2.C	Develops and uses formulas including distance and midpoint.			xx
G.e.1.A	Finds areas of polygons and composite figures.			xx
G.e.1.B	Finds areas of sectors and arc lengths of circles using proportional reasoning.			xx
G.e.1.C	Develops, extends, and uses the Pythagorean Theorem.			xx
G.e.1.D	Finds surface areas and volumes of prisms, pyramids, spheres, cones, and cylinders in problem situations.			xx
G.e.2.D	Analyzes the characteristics of three-dimensional figures and their component parts.			xx
G.e.3.A	Uses congruence transformations to make conjectures and justify properties of geometric figures.			xx
G.f.1.A	Uses similarity properties and transformations to explore and justify conjectures about geometric figures.			xx
G.f.1.B	Uses ratios to solve problems involving similar figures.			xx
G.f.1.C	Develops, applies, and justifies triangle similarity relationships, such as right triangle ratios, trigonometric ratios, and Pythagorean triples in a variety of ways.			xx
G.f.1.D	Describes the effect on perimeter, area, and volume when length, width, or height of a three-dimensional solid is changed and applies this idea in solving problems.			xx

