

### High School Mathematics TAKS Matrix

TEKS	Student Expectation	Grade Levels Targeted											Priority Ranking	
		8th - 03	8th -04	8th -05	9th-03	9th-04	9th-05	10th-03	10th-04	10th-05	11th-03	11th-04		11th-05
OBJECTIVE 1	FUNCTIONAL RELATIONSHIPS IN A VARIETY OF WAYS	8th - NT	8th - NT	8th - NT	9th-5	9th-5	9th-5	10th-5	10th-5	10th-5	11th-5	11th-5	11th-5	Priority Ranking
Algebra(b1A)	describe independent and dependent quantities in functional relationships				42		17	19	23	54		55		H
Algebra(b1B)	gather and record data, or use data sets to determine functional (systematic) relationships between quantities				49	41,50	46	45	35	30	28,45	31	6	H
Algebra(b1C)	describe functional relationships for given problem situations and write equations or inequalities to answer questions arising from the situations				45	27	5	7	49	19	11	1	60	H
Algebra(b1D)	represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, & inequalities				24	24	22	43	20	4	50	20	10,49	H
Algebra(b1E)	interpret and make inferences from functional relationships				25	46	15	5	51	44	59	3	55	H
OBJECTIVE 2	PROPERTIES AND ATTRIBUTES OF FUNCTIONS	8th - NT	8th - NT	8th - NT	9th-5	9th-5	9th-5	10th-5	10th-5	10th-5	11th-5	11th-5	11th-5	Priority Ranking
Algebra(b2A)	identify & sketch the general forms of linear ( $y=x$ ) and quadratic ( $y=x^2$ ) parent functions				7		1			40		34	37	H
Algebra(b2B)	(for a variety of situations) identify the mathematical domains & ranges and determine reasonable domain & range values for given situations						23	14				27	29	H
Algebra(b2C)	interpret situations in terms of given graphs or create situations that fit given graphs				48	47	13				37	47	9	H
Algebra(b2D)	(in solving problems) collect & organize data, make and interpret scatterplots & models, predict and make decisions & critical judgments				11		35		12	39	60		54	H
Algebra(b3A)	use symbols to represent unknowns and variables				19	45		53	32	11				H
Algebra(b3B)	(given situations) look for patterns and represent generalizations algebraically					43			4		54	11		H
Algebra(b4A)	find specific function values, simplify polynomial expressions, transform & solve equations, and factors as necessary in problem situations				46	16		31,37		21	21		21	H
Algebra(b4B)	use the commutative, associative, and distributive properties to simplify algebraic expressions					20	26	10	1,25	38	25	41		H



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<b>OBJECTIVE 5</b>	<b>QUADRATIC &amp; OTHER NONLINEAR FUNCTIONS</b>	<b>8th - NT</b>	<b>8th - NT</b>	<b>8th - NT</b>	<b>9th-4</b>	<b>9th-4</b>	<b>9th-4</b>	<b>10th-5</b>	<b>10th-5</b>	<b>10th-5</b>	<b>11th-5</b>	<b>11th-5</b>	<b>11th-5</b>	<b>Priority Ranking</b>
Algebra(d1B)	investigate, describe, and predict the effects of changes in "a" on the graph of $y=ax^2$					2,5		22	17	2	49	59		H
Algebra(d1C)	investigate, describe, and predict the effects of changes in "c" on the graph of $y=x^2+c$				9,52		16,38		45	26	4		50	H
Algebra(d1D)	(for problem situations) analyze graphs of quadratic functions and draw conclusions							1	55	25		4	44	H
Algebra(d2A)	solve quadratic equations using concrete models, tables, graphs, and algebraic methods							27			47	37	47	H
Algebra(d2B)	relate the solutions of quadratic equations to the roots of their functions							25	40	16	15,36	42	27	H
Algebra(d3A)	use patterns to generate the laws of exponents and apply them in problem-solving situations				10,27	9,44	10,41	41	33	22	48	54	17	H

<b>OBJECTIVE 6</b>	<b>GEOMETRY &amp; SPATIAL REASONING</b>	<b>8th - 4</b>	<b>8th - 3</b>	<b>8th-4</b>	<b>9th-4</b>	<b>9th-4</b>	<b>9th-4</b>	<b>10th-5</b>	<b>10th-5</b>	<b>10th-5</b>	<b>11th-7</b>	<b>11th-7</b>	<b>11th-7-</b>	<b>Priority Ranking</b>
8.6(A)	generate similar shapes using dilations, including enlargements and reductions	31	15	48	32	18,31	6	40,44	16	32,43				H
8.6(B)	graph dilations, reflections, and translations on a coordinate plane	10,43	27	38	47	6	20	17,54	10,28	28,50				H
8.7(D)	locate and name points on a coordinate plane using ordered pairs of rational numbers	34	2	1,32	3,43	52	28,49	51	37,48	21				H
Geometry(b4A)	select an appropriate representation (concrete, pictorial, graphical, verbal, or symbolic) in order to solve problems										24,51	7	22,35	H
Geometry(c1A)	generalize about geometric properties, including properties of polygons, ratios in similar figures and solids, and angle relationships in polygons and circles										2,34	5,21(g)	15	H
Geometry(c1B)	use properties of transformations and their compositions to make connections between mathematics and the real world in applications such as tessellations or fractals												24,43	H
Geometry(c1C)	identify and apply patterns from right triangles to solve problems, including special right triangles (45-45-90 & 30-60-90) and triangles whose sides are Pythagorean triples										20,30	12,19,46	45	H
Geometry(e3A)	use congruence transformations to make conjectures and justify properties of geometric figures										27	10	33	H

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<b>OBJECTIVE 7</b>	<b>2 and 3 DIMENSIONAL REPRESENTATIONS OF GEOMETRIC RELATIONSHIPS AND SHAPES</b>	<b>8th - 3</b>	<b>8th - 4</b>	<b>8th-3</b>	<b>9th-4</b>	<b>9th-4</b>	<b>9th-4</b>	<b>10th-5</b>	<b>10th-5</b>	<b>10th-5</b>	<b>11th-7</b>	<b>11th-7</b>	<b>11th-7</b>	<b>Priority Ranking</b>
8.7A	draw solids from different perspectives	50	44	46	12	4	8,50	3	56	14,34,56				H
8.7B	use geometric concepts and properties to solve problems in fields such as art and architecture	13	5,38	13	21(g),31	30,49	37	12,21(g)	9,41,50	48				M
8.7C	use pictures or models to demonstrate the Pythagorean Theorem	37	22	22	14	33	14	13,56	36	6				H
Geometry(d1B)	use nets to represent and construct three-dimensional objects										1	38	4	H
Geometry(d1C)	use top, front, side, and corner views of three-dimensional objects to create accurate and complete representations and solve problems										44	15	26	H
Geometry(d2A)	use one- and two-dimensional coordinate systems to represent points, line segments, and figures										58	50	7	H
Geometry(d2B)	use slopes and equations of lines to investigate geometric relationships, including parallel lines, perpendicular lines, and special segments of triangles and other polygons										6,36	16,57	39,41	H
Geometry(d2C)	develop and use formulas, including distance and midpoint										19	56	59	H
Geometry(e2D)	analyze the characteristics of three-dimensional figures and their component parts										14	24	18	H

<b>OBJECTIVE 8</b>	<b>CONCEPTS AND USES OF MEASUREMENT &amp; SIMILARITY</b>	<b>8th-5</b>	<b>8th -5</b>	<b>8th -5</b>	<b>9th-6</b>	<b>9th-6</b>	<b>9th-6</b>	<b>10th-7</b>	<b>10th-7</b>	<b>10th-7</b>	<b>11th-7</b>	<b>11th-7</b>	<b>11th-7</b>	<b>Priority Ranking</b>
8.8(A)	find surface areas of prisms and cylinders using concrete models and nets (two dimensional models)	23	13	31	26	35	24	50	38	36				H
8.8(B)	connect models to formulas for volume of prisms, cylinders, pyramids, and cones				29		31	33	27,30					M
8.8(C)	estimate answers and use formulas to solve application problems involving surface area and volume	28	33	26	37	22	3	30	13	27				H
8.9(A)	use the Pythagorean Theorem to solve real-life problems	19	17	8	38	26	9	11	15	23				H
8.9(B)	use proportional relationships in similar shapes to find missing measurements	7	36	14	6	1	43	16	42	10				H
8.10(A)	describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionately		23	25	16	29,37	21	55	21(g)	41				H
8.10(B)	describe the resulting effect on volume when the dimensions of a solid are changed proportionately	38						28						H
Geometry(e1A)	find areas of regular polygons and composite figures										9	43	46,51	H
Geometry(e1B)	find areas of sectors and arc lengths of circles using proportional reasoning											52	25	H
Geometry(e1C)	develop, extend, and use the Pythagorean Theorem										41	25,51	20	H
Geometry(e1D)	find surface areas and volumes of prisms, pyramids, spheres, cones, and cylinders in problem situations										42		30	H
Geometry(f1A)	use similarity properties and transformations to explore and justify conjectures about geometric figures										13,32	6		H
Geometry(f1B)	use ratios to solve problems involving similar figures										39	23	13	H
Geometry(f1C)	(in a variety of ways) develop, apply, and justify triangle similarity relationships, such as right triangle ratios, trigonometric ratios, and Pythagorean triples												11	H
Geometry(f1D)	describe 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										33	26		H

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<b>OBJECTIVE 9</b>	<b>PERCENTS, PROPORTIONAL RELATIONSHIPS, PROBABILITY, and STATISTICS IN APPLICATION PROBLEMS</b>	<b>8th-8</b>	<b>8th-7</b>	<b>8th-7</b>	<b>9th-5</b>	<b>9th-5</b>	<b>9th-5</b>	<b>10th-5</b>	<b>10th-5</b>	<b>10th-5</b>	<b>11th-5</b>	<b>11th-5</b>	<b>11th-5</b>	<b>Priority Ranking</b>
8.3(B)	estimate and find solutions to application problems involving percents and proportional relationships such as similarity and rates	15,27	21,24	11,21	17,35	11		6,42	29	18	18	35,39	53	H
8.11(A)	find the probabilities of compound events (dependent and independent)	22	30	16	36			15		45		2,14	42	H
8.11(B)	use theoretical probabilities and experimental results to make predictions and decisions	8	49	5	4	32			43	13	26		52	H
8.12(A)	select the appropriate measure for central tendency to describe a set of data for a particular purpose	17	18	19,23				18	34		8		38	H
8.12(C)	construct circle graphs, bar graphs, and histograms, with and without technology	3	4		51	40		39	3	49	5		57	H
8.13(B)	recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis	16,41	45	9		3,14			39	17	38	49		H

<b>OBJECTIVE 10</b>	<b>MATHEMATICAL PROCESSES &amp; TOOLS USED IN PROBLEM SOLVING</b>	<b>8th-10</b>	<b>8th-10</b>	<b>8th-10</b>	<b>9th-9</b>	<b>9th-9</b>	<b>9th-9</b>	<b>10th-9</b>	<b>10th-9</b>	<b>10th-9</b>	<b>11th-9</b>	<b>11th-9</b>	<b>11th-9</b>	<b>Priority Ranking</b>
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	25,48	26		20,23,34	38		48,52	2	52	10,40		32,40	H
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	5,33,35,39	12,20		5			8,38	7,31	9,29	17	22	12,14	H
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 with a simpler problem, or working backwards to solve a problem	6	34,46		1	48		35	5	1,33	7	9,28	2,19	H
8.15(A)	communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models	18	9,31		15,22,33	23,51		2,29,32	10,53	46,53	12,22,31	30,32	3	H
8.16(A)	make conjectures from patterns or sets of examples and nonexamples	20	10			12,15,21(g),25		23	11,47	8	55	33,36,58		H
8.16(B)	validate his/her conclusions using mathematical properties and relationships	44	29,41		28	28			22	5	52	18	31,34	H