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Correlation of Texas Essential Knowledge and Skills (TEKS) for Mathematics to Moving with Algebra Grade 8

		Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)	Part C Student Book Skill Builders (SB)
8.1	**Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding.**	**Throughout**	**Throughout**	**Throughout**
(A)	apply mathematics to problems arising in everyday life, society, and the workplace			
(B)	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution			
(C)	select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems			
(D)	communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate			
(E)	create and use representations to organize, record, and communicate mathematical ideas			
(F)	analyze mathematical relationships to connect and communicate mathematical ideas			
(G)	display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication			
8.2	**Number and operations. The student applies mathematical process standards to represent and use real numbers in a variety of forms.**			
(A)	extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of real numbers	80		

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(B)	approximate the value of an irrational number, including π and square roots of numbers less than 225, and locate that rational number approximation on a number line		220 **SB:** 186	
(C)	convert between standard decimal notation and scientific notation	23 **SB:** 17		
(D)	order a set of real numbers arising from mathematical and real-world contexts	7, 64, 89, 90, 135, 220 **SB:** 5, 6, 54, 67-69, 112, 144	220 **SB:** 186	
8.3	**Proportionality. The student applies mathematical process standards to use proportional relationships to describe dilations.**			
(A)	generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation		227, 228	
(B)	compare and contrast the attributes of a shape and its dilation(s) on a coordinate plane		228	
(C)	use an algebraic representation to explain the effect of a given positive rational scale factor applied to two-dimensional figures on a coordinate plane with the origin as the center of dilation		228	
8.4	**Proportionality. The student applies mathematical process standards to explain proportional and non-proportional relationships involving slope.**			
(A)	use similar right triangles to develop an understanding that slope, m, given as the rate comparing the change in y-values to the change in x-values, $(y_2 - y_1)/(x_2 - x_1)$, is the same for any two points (x_1, y_1) and (x_2, y_2) on the same line		325-327 **SB:** 243, 244	359
(B)	graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship		318, 320 **SB:** 240, 241, 256	362-364 **SB:** 284, 285, 297-300
(C)	use data from a table or graph to determine the rate of change or slope and y-intercept in mathematical and real-world problems		320, 321, 325, 326, 328-332 **SB:** 243-245, 251, 256	350-353, 355 **SB:** 274-277, 280

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8.5	**Proportionality. The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions.**			
(A)	represent linear proportional situations with tables, graphs, and equations in the form of $y = kx$		316, 318-320 **SB:** 238, 240, 241, 256, 262	362-364 **SB:** 284, 285, 297-300
(B)	represent linear non-proportional situations with tables, graphs, and equations in the form of $y = mx + b$, where $b \neq 0$		317, 321, 337 **SB:** 239	349, 351, 352, 361, 362 **SB:** 272
(C)	contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation			368-370 **SB:** 287
(D)	use a trend line that approximates the linear relationship between bivariate sets of data to make predictions			368, 372, 373 **SB:** 289
(E)	solve problems involving direct variation		318-320, 336 **SB:** 256, 262	
(F)	distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form $y = kx$ or $y = mx + b$, where $b \neq 0$		320, 321 **SB:** 256, 262	362 **SB:** 284
(G)	identify functions using sets of ordered pairs, tables, mappings, and graphs		235, 236, 315-317 **SB:** 197, 198, 238, 239	348, 349, 398, 399 **SB:** 272, 273, 296, 316-319
(H)	identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems		235, 236, 315-321, 336, 337 **SB:** 197, 198, 238-241, 256, 262	348, 362 **SB:** 272, 284
(I)	write an equation in the form $y = mx + b$ to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations		321, 329, 331, 337 **SB:** 245, 251	352-361 **SB:** 276-283
8.6	**Expressions, equations, and relationships. The student applies mathematical process standards to develop mathematical relationships and make connections to geometric formulas.**			
(A)	describe the volume formula $V = bh$ of a cylinder in terms of its base area and its height		215, 216	

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(B)	model the relationship between the volume of a cylinder and a cone having both congruent bases and heights and connect that relationship to the formulas		216	
(C)	use models and diagrams to explain the Pythagorean theorem		221	
8.7	**Expressions, equations, and relationships. The student applies mathematical process standards to use geometry to solve problems.**			
(A)	solve problems involving the volume of cylinders, cones, and spheres		216	
(B)	use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders		217 **SB:** 258	
(C)	use the Pythagorean Theorem and its converse to solve problems		221, 222 **SB:** 187	
(D)	determine the distance between two points on a coordinate plane using the Pythagorean Theorem			
8.8	**Expressions, equations, and relationships. The student applies mathematical process standards to use one-variable equations or inequalities in problem situations.**			
(A)	write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants		270, 271, 283, 284	
(B)	write a corresponding real-world problem when given a one-variable equation or inequality with variables on both sides of the equal sign using rational number coefficients and constants			
(C)	model and solve one-variable equations with variables on both sides of the equal sign that represent mathematical and real-world problems using rational number coefficients and constants		270, 271, 274-276, 283, 284, 290, 291 **SB:** 221, 223, 227	
(D)	use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles		196, 197, 200 **SB:** 164, 165, 167	

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8.9	**Expressions, equations, and relationships. The student applies mathematical process standards to use multiple representations to develop foundational concepts of simultaneous linear equations. The student is expected to identify and verify the values of x and y that simultaneously satisfy two linear equations in the form y = mx + b from the intersections of the graphed equations.**			403 **SB:** 323, 324
8.10	**Two-dimensional shapes. The student applies mathematical process standards to develop transformational geometry concepts.**			
(A)	generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plane		204 **SB:** 171	
(B)	differentiate between transformations that preserve congruence and those that do not			
(C)	explain the effect of translations, reflections over the x- or y-axis, and rotations limited to 90°, 180°, 270°, and 360° as applied to two-dimensional shapes on a coordinate plane using an algebraic representation			
(D)	model the effect on linear and area measurements of dilated two-dimensional shapes			
8.11	**Measurement and data. The student applies mathematical process standards to use statistical procedures to describe data.**			
(A)	construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data			367-370 **SB:** 287
(B)	determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points			
(C)	simulate generating random samples of the same size from a population with known characteristics to develop the notion of a random sample being representative of the population from which it was selected			

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8.12	**Personal financial literacy. The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor**			
(A)	solve real-world problems comparing how interest rate and loan length affect the cost of credit			
(B)	calculate the total cost of repaying a loan, including credit cards and easy access loans, under various rates of interest and over different periods using an online calculator			
(C)	explan how small amounts of money invested regularly, including money saved for college and retirement, grow over time			
(D)	calculate and compare simple interest and compound interest earnings	177, 178 **SB:** 138		
(E)	identify and explain the advantages and disadvantages of different payment methods			
(F)	analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility			
(G)	estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college			