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PENNSYLVANIA ASSESSMENT ANCHORS AND ELIGIBLE CONTENT STANDARDS CORRELATED TO
MOVING WITH ALGEBRA GRADE 8

		Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
M8.A	NUMBERS AND OPERATIONS		
M8.A.1	Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers and number systems.		
M8.A.1.1	Represent numbers in equivalent forms.	3 SB: 1, 2	215, 294-297 SB: 229, 241, 252
M8.A.1.1.1	Represent numbers using scientific notation and/or exponential forms.	21-23, 25 SB: 13, 16-18	
M8.A.1.1.2	Find the square or cube of a whole number (single digit) and/or the square root of a perfect square (without a calculator) and explain the relationship between the two (I.e. square and square root).	16, 17 SB: 13	215, 216, 294, 304 SB: 184
M8.A.2	Understand the meanings of operations, use operations and understand how they relate to each other.		
M8.A.2.1	Complete calculations by applying the order of operations	SB: 11	290-293 SB: 227, 228
M8.A.2.1.1	Simplify numeric expressions involving integers, using the order of operations. (May include all types of grouping symbols. No combining negatives with exponents [4^{-3}] or compound exponents.	14 SB: 11	290-293 SB: 226-228
M8.A.3	Compute accurately and fluently and make reasonable estimates.		
M8.A.3.1	Determine the appropriateness of overestimating, underestimating or calculating an exact answer in problem-solving situations.	41, 103 SB: 84, 86	

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M8.A.3.1.1	Identify, use and/or explain when it is appropriate to round up or round down.	8, 9, 137, 138 **SB:** 7, 8, 114	
M8.A.3.1.2	Identify, apply and/or explain when an exact answer is needed or when estimation is appropriate.	30, 31, 41, 52, 53, 103, 104, 117, 158, 172 **SB:** 25, 26, 42, 43, 84-86, 100, 124, 135	
M8.A.3.2	Use estimation strategies in problem-solving situations.	32, 54, 105, 106, 118, 145, 146, 159 **SB:** 27, 46, 87, 88, 100, 119, 129	
M8.A.3.2.1	Estimate answers to problems involving percents (percents will be limited to: 1%, 10%, 14%, 20%, 25%, 50%, OR 75%).	172 **SB:** 135	
M8.A.3.3	Compute and/or explain operations with integers, fractions and/or decimals.	68-77, 93-96, 143, 144 **SB:** 56, 58-60, 73-83, 117, 118	244-248 **SB:** 202-206
M8.A.3.3.1	Add, subtract, multiply and/or divide integers, fractions and/or decimals with and without a calculator (straight computation or word problems).	26-29, 32-40, 42-51, 54, 55, 58, 59, 68-78, 87, 88, 93-96, 98-120, 123-127, 143-160 **SB:** 19-24, 27, 29-41, 44-46, 51,-53, 56-60, 66, 73-101, 117-129, 140, 142, 143	244-248 **SB:** 202-206
M8.B	**MEASUREMENT**		
M8.B.1	**Demonstrate an understanding of measurable attributes of objects and figures, and the units, systems and processes of measurement.**		
M8.B.1.1	Convert measurements.		233, 234 **SB:** 198, 199
M8.B.1.1.1	Convert among metric measurements (milli, centi, kilo using meter, liter and gram) (table of equivalency provided on the reference sheet).		**SB:** 198, 199

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M8.B.1.1.2	Convert customary measurements up to 2 units above or below the given unit (e.g.., inches to yards, pints to gallons) (table of equivalency provided on the reference sheet).		233, 234
M8.B.1.1.3	Convert time up to 2 units above or below given unit (e.g., seconds to hours).		
M8.B.1.1.4	Convert from Fahrenheit to Celsius or Celsius to Fahrenheit (formulas provided on the reference sheet).		316
M8.B.2	Apply appropriate techniques, tools and formulas to determine measurements.		
M8.B.2.1	Determine the measurement of a missing side(s) or angle(s) in a polygon.		197, 198, 219 SB: 165, 166, 186
M8.B.2.1.1	Determine the total number of degrees in the interior angles of a polygon in 3-8 sided figures (formula provided on the reference sheet).		196, 198, 199 SB: 164, 166
M8.B.2.1.2	Determine the measurement of one interior angle of a regular polygon (3-8 sided polygons, formula provided on the reference sheet.		
M8.B.2.1.3	Determine the number of sides of a polygon given the total number of degrees in the interior angles (3-8 sided polygons, formula provided on the reference sheet).		199
			206-216
M8.B.2.2	Use, describe and/or develop procedures to determine measures of perimeter, circumference, area, surface area and/or volume.		SB: 174-183
M8.B.2.2.1	Calculate the surface area of cubes and rectangular prisms (formula provided on the reference sheet).		
M8.B.2.2.2	Calculate the volume of cubes and rectangular prisms (formulas provided on the reference sheet).		212-214 SB: 180-182
M8.B.2.2.3	Determine the appropriate type of measurement (circumference, perimeter, area, surface area, volume) for a given situation (e.g., which measurement is needed to determine the amount of carpeting for a room).		
M8.C	GEOMETRY		

		Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
M8.C.1	Analyze characteristics and properties of two- and three-dimensional geometric shapes and demonstrate understanding of geometric relationships.		
M8.C.1.	Identify, use, and/or describe properties of angles, triangles, quadrilaterals, circles, pyramids, cubes, prisms, spheres, cones and/or cylinders.		187-195 SB: 155-161, 163
M8.C.1.1.1	Match the three-dimensional figure with its net (cube, cylinder, cone, prism, pyramid). Any measurements used should be consistent in the stem and answer choices.		193 SB: 162
M8.C.1.1.2	Define, identify and/or use properties of angles formed by intersecting lines (complementary, supplementary, adjacent and/or vertical angles).		194, 195, 200 SB: 163, 167
M8.C.1.1.3	Define, identify and/or use properties of angles formed when two parallel lines are cut by a transversal (alternate interior, alternate exterior, vertical corresponding).		200 SB: 167
M8.C.1.2	Compute the measures of sides of right triangles using the Pythagorean Theorem.		219 SB: 186
M8.C.1.2.1	Use the Pythagorean Theorem to find the measure of a missing side of a right triangle (formula provided on the reference sheet – whole numbers only).		219 SB: 186
M8.C.2	Identify and/or apply concepts of transformations or symmetry.		
	Not assessed at Grade 8.		
M8.C.3	Locate points or describe relationships using the coordinate plane.		
M8.C.3.1	Plot and/or identify ordered pairs on a coordinate plane.		201, 202, 310 SB: 168
M8.C.3.1.1	Plot, locate or identify ordered pairs on a coordinate plane (the point may be a vertex of a polygon).		201, 202, 310 SB: 168
M8.D	ALGEBRAIC CONCEPTS		
M8.D.1	Demonstrate an understanding of patterns, relations and functions.		

		Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
M8.D.1.1	Analyze, extend or develop descriptions of patterns or functions.		307-309, 311-317 **SB:** 196, 197, 234, 235
M8.D.1.1.1	Continue a numeric or algebraic pattern (pattern must show 3 repetitions – may include up to 2 operations, squares and square roots).		307-309 **SB:** 234, 235
M8.D.1.1.2	Find missing elements in numeric or geometric patterns and/or functions (may be given a table or rule – pattern must show 3 repetitions).		307-309 **SB:** 234, 235
M8.D.1.1.3	Determine the rule of a function (given elements in an input-output table, chart or list – limited to linear functions).		231, 311 **SB:** 196
M8.D.2	**Represent and/or analyze mathematical situations using numbers, symbols, words, tables and/or graphs.**		
M8.D.2.1	Select and/or use a strategy to simplify an expression, solve an equation or inequality and/or check the solution for accuracy.		256-272, 283-287 **SB:** 209-216
M8.D.2.1.1	Solve one- or two-step equations and inequalities (should not include absolute values – one variable only).	116, 160 **SB:** 51	253-261, 266, 267, 281-287 **SB:** 212-216, 219, 225
M8.D.2.1.2	Use substitution to check the accuracy of a given value for an equation or inequality (simple inequalities with one variable).		255, 285, 287 **SB:** 216
M8.D.2.1.3	Determine the value of an algebraic expression by simplifying and/or substituting a number for the variable.		262-265, 268, 269, 303 **SB:** 209, 210, 220
M8.D.2.2.	Create and/or interpret expressions, equations or inequalities that model problem situations.		249-252, 273, 274, 317, 332, 333 **SB:** 207, 208, 217, 218 245
M8.D.2.2.1	Match a written situation to its numeric and/or algebraic expression, equation or inequality (up to two variables in equations or expressions – one variable with inequalities).		249-252 **SB:** 207, 208
M8.D.2.2.2	Write and/or solve an equation for a given problem situation (one variable only).		273, 274, 280 **SB:** 217, 218, 224

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M8.D.3	Analyze change in various contexts.		
	Not assessed at Grade 8		
M8.D.4	Describe or use models to represent quantitative relationships.		
M8.D.4.1	Represent relationships with tables or graphs on the coordinate plane.		312-314, 316, 317
M8.D.4.1.1	Graph a linear function based on x/y table (integers only).		232, 332, 333 SB: 197, 236, 237
M8.D.4.1.2	Match the graph of a linear function to its x/y table (integers only).		SB: 238, 239
M8.D.4.1.3	Match the linear equation (y = mx + b form) to the x/y table (integers only in the table).		SB: 238, 239
M8.E	DATA ANALYSIS AND PROBABILITY		
M8.E.1	Formulate or answer questions that can be addressed with data and/or organize, display, interpret or analyze data.		
M8.E.1.1	Choose, display or interpret data (tables, charts, graphs, etc.).	179 SB: 101	
M8.E.1.1.1	Choose and/or explain the correct representation (graph) for a set of data.		
M8.E.1.1.2	Analyze data and/or answer questions pertaining to data shown in multiple line graphs, circle graphs or histograms.	179 SB: 101	
M8.E.1.1.3	Interpret data shown in stem-and-leaf or box-and-whisker plots.		
M8.E.2	Select and/or use appropriate statistical methods to analyze data.		
	Not assessed at Grade 8.		
M8.E.3	Understand and/or apply basic concepts of probability or outcomes.		
M8.E.3.1	Calculate the probability of an event.		
M8.E.3.1.1	Find the probability for a mutually exclusive or an independent event (written as a fraction in simplest form).		

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M8.E.3.2	Determine the number of combinations and/or permutations for an event.		
M8.E.3.2.1	Determine/show the number of permutations and/or combinations for an event using up to four choices (e.g., organized list, etc.)		
M8.E.4	**Develop and/or evaluate inferences and predictions or draw conclusions based on data or data displays.**		
M8.E.4.1	Draw conclusions, make inferences and/or evaluate hypotheses based on statistical and data displays.		
M8.E.4.1.1	Fit a line to a scatter plot and/or describe any correlation between the two variables (positive, negative, strong, weak or none).		
M8.E.4.1.2	Make predictions based on survey results or graphs (bar, line, circle, scatter plots, etc.).	179	