DISTRICT OF COLUMBIA LEARNING STANDARDS CORRELATED TO
MOVING WITH ALGEBRA GRADE 8

		Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
	NUMBER SENSE AND OPERATIONS		
	Number Sense		
8.NSO-N.1.	Explain the properties of and compute with real numbers expressed in a variety of forms.	2-5, 10-15, 24, 26-29, 34-40, 42-51, 62, 63, 80-85, 98, 99, 129-133, 147-150, 161-171 **SB:** 1-4, 9-14, 19-24, 61, 64, 65, 73, 108, 109, 117, 118, 130, 133	
8.NSO-N.2.	Know that every rational number is either a terminating or repeating decimal and that every irrational number is a nonrepeating decimal.	80, 140-142 **SB:** 115, 116	
8.NSO-N.3.	Know that the absolute value is the distance of the number from 0; determine the absolute value and additive inverse of real numbers; determine the absolute value of rational numbers.	65-67 **SB:** 55	242, 243 **SB:** 201
8.NSO-N.4.	Read, write, and compare rational numbers in scientific notation (positive and negative powers of 10), and use them in calculations and problem situations.	22, 23, 25 **SB:** 17, 18	
8.NSO-N.5.	Define, compare, order, and apply frequently used irrational numbers such as $\sqrt{2}$ and π (e.g., show that if π is known to be irrational, then 3π and $\pi/3$ also are irrational).		209, 217 **SB:** 177, 185
8.NSO-N.6.	Use the laws of exponents for integer exponents (e.g., write 2^2 x 2^3 as 2 x 2 ... an then as a single power of 2; write 2^{-3} as a fraction).	16-19 **SB:** 13, 14	292-303 **SB:** 228-232

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8.NSO-N.7.	Demonstrate an understanding of the properties of arithmetic operations on rational numbers.	26-29, 34-40, 42-51, 68-78, 87, 93-102, 107-115, 123-127, 143, 144, 147-157 **SB:** 19-24, 29-41, 56-60, 73-83, 89-99, 117, 118, 120-123, 125-127, 141-143	
	Computation and Operations		
8.SNO-C.8.	Calculate weighed averages such as course grades, consumer price indexes, and sports ratings.		
8.NSO-C.9.	Solve problems involving ratio units such as miles per hour, dollars per pound, or persons per square mile.		275-278 **SB:** 222, 223, 246
8.NSO-C.10.	Solve problems involving derived quantities such as density, velocity, and weighted averages.		279, 280 **SB:** 224
8.NSO-C.11.	Solve problems that involve markups, commissions, profits, and simple and compound interest.	173-179 **SB:** 136-138	
8.NSO-C.12.	Apply the rules of powers and roots to the solution of problems.		210-214, 218, 219 **SB:** 180-183, 186
8.NSO-C.13	Use the inverse relationship between squaring and finding the square root of a perfect square integer to solve problems.		218, 219 **SB:** 186
8.NSO-C.14.	Multiply and divide numbers written in scientific notation.		
8.NSO-C.15.	Select and use appropriate operations - addition, subtraction, multiplication, division, and positive integer exponents - to solve problems with rational numbers, including negative rationales.	32-34, 54, 55, 58, 59, 78, 105, 106, 116, 118, 119, 159, 160 **SB:** 45, 46, 51-53, 87, 88, 139	244, 273, 274 **SB:** 202, 204, 207
	Estimation		
8.NSO-E.16.	Estimate and solve problems with square roots; find square roots of perfect squares and approximate the square roots of nonperfect squares by locating them between consecutive integers.		216-219 **SB:** 184-186

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8.NSO-E.17.	Determine estimates to a certain stated accuracy.	30, 31, 41, 52, 53, 91 **SB:** 25, 26, 42, 43, 85, 86	
	PATTERNS, RELATIONS, AND ALGEBRA		
8.PRA.1.	Use tables and graphs to represent and compare linear growth patterns. In particular, compare rates of change and *x*- and *y*-intercepts of different linear patterns.		231, 232, 311-317, 325, 328 **SB:** 196, 197, 243, 249
8.PRA.2.	Set up and solve linear equations and inequalities with one or two variables using algebraic methods and graphs.		231, 232, 253-261, 266, 267, 270-274, 279-287, 311-317 **SB:** 196, 197, 211-219, 221, 225, 236-239, 245, 250, 251, 254
8.PRA.3.	Use linear equations to model and analyze problems involving proportional relationships.		222, 225-227, 275-278 **SB:** 187-189, 191, 192, 222-224, 246
8.PRA.4.	Identify the slope of a line as a measure of its steepness and as a constant rate of change from its table of values, equation, or graph. Apply the concept of slope to the solution of problems.		320-333 **SB:** 241-244, 249, 254
8.PRA.5.	Identify the roles of variables within an equation (e.g., *y = mx + B* expressing *y* as a function of *x* with parameters *m* and *b*).		322-333 **SB:** 243, 244, 249, 254
8.PRA.6.	Distinguish between numerical and algebraic expressions, equations, and inequalities.		249-252, 282 **SB:** 208, 211
8.PRA.7.	Interpret the formula (-x)(-y)= xy in calculations involving such things as distance, speed, and time, or in the graphing of linear functions. Use this identity to simplify algebraic expressions [e.g., (-2)(-x + 2) = 2x - 4)].		324
8.PRA.8.	Explain and analyze - both quantitatively and qualitatively, using pictures, graphs, charts, and equations - how a change in one variable results in a change in another variable in functional relationships.		231, 232, 273, 274, 279, 280, 311-317 **SB:** 196, 197, 224, 236-239, 254

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8.PRA.9.	Graph a linear equation using ordered pairs; identify and represent the graphs of linear functions.		232, 312-314, 316, 317, 322, 324, 327, 328 **SB:** 197, 236-239, 242, 243, 249, 254
	GEOMETRY		
8.G.1.	Analyze, apply, and explain the relationship between the number of sides and the sums of the interior and exterior angle measures of polygons.		196-199 **SB:** 164-166
8.G.2.	Demonstrate an understanding of the relationships of angles formed by intersecting lines, including parallel lines cut by a transversal.		194, 195, 200 **SB:** 163, 167
8.G.3.	Demonstrate an understanding of conditions that indicate two triangles are similar; the corresponding angles are congruent (AAA similarity); the ratios of two pairs of corresponding sides are equal and the included angles are congruent (SAS similarity); ratios of all pairs of corresponding sides are equal (SSS similarity).		223-225 **SB:** 189, 190
8.G.4.	Use a straightedge compass, protractor, or other tool to formulate and test conjectures and to draw geometric figures (Example: Draw the perpendicular bisector of a segment, an equilateral triangle, the bisector of an angle, diagonals, midpoints, radii, diameters, and chords of circles).		**SB:** 169
8.G.5.	Apply spatial reasoning by recognizing and drawing two-dimensional representations of three-dimensional objects (e.g., nets, projections, and perspective drawings of cylinders, prisms, and cones).		193, 212-214 **SB:** 161, 162, 180-182
8.G.6.	Find the distance between two points on the coordinate plane using the distance formula; find the midpoint of the line segment; recognize that the distance formula is an application of the Pythagorean theorem.		**SB:** 248
	MEASUREMENT		
8.M.1.	Given the formulas, convert from one system of measurement to another.		

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8.M.2.	Understand the concept of surface area and volume; given the formulas, determine the surface area and volume of rectangular prisms, cylinders, and spheres.		212-214 SB: 180-182
8.M.3.	Use a straightedge, compass, protractor, or other tools to formulate and test conjectures and to draw geometric figures.		SB: 169
8.M.4.	Solve problems about similar figures and scale drawings. Understand that when the lengths of all dimensions of an object are multiplied by a scale factor, the surface area is multiplied by the square of the scale factor and the volume is multiplied by the cube of the scale factor.		225-227 SB: 183,189, 191, 192
8.M.5.	Understand and use the fact that when two polygons or circles are similar with scale factor of r, their areas are related by a factor of r^2.		SB: 183
8.M.6.	Use proportions to express relationships between corresponding parts of similar figures.		224, 225 SB: 189
	DATA ANALYSIS, STATISTICS, AND PROBABILITY		
8.DASP.1.	Revisit measures of central tendency mean, median, and mode) and spread (range) that represent a set of data and then observe the change in each when an "outlier" is adjoined to the data set or removed from it. Use these notions to compare different sets of data and explain how each can be useful in a different way to summarize social phenomena such as price levels, clothing sizes, and athletic performances.		
8.DASP.2.	Select, create, interpret, and use various tabular and graphical representations of data (e.g., scatter plots, box-and-whisker plots).	179 SB: 101	
8.DASP.3.	Recognize practices of collecting and displaying data that may bias the presentation or analysis.		
8.DASP.4.	Use data to estimate the probability of future events (e.g., batting averages).		
8.DASP.5.	Select, create, interpret, and use various tabular and graphical representations of data; differentiate between continuous and discrete data and ways to represent them.		

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8.DASP.6.	Apply the Fundamental Counting Principle (basic combinatorics) to find total number of outcomes possible for independent and dependent events, and calculate the probabilities using organized lists or tree diagrams.		
8.DASP.7.	Understand the difference between independent and dependent events, and recognize common misconceptions involving probability (e.g., Alice rolls a 6 on a die three times in a row; she is just as likely to roll a 6 on the fourth roll as she was on any previous roll).		