Grade 8– Crosswalk (Summary of Revisions): 2016 *Mathematics Standards of Learning and Curriculum Framework*

Additions (2016 SOL)	Deletions from Grade 8 (2009 SOL)
• 8.1 EKS – Use rational approximations of irrational numbers to compare and order real numbers • 8.5 EKS – Use the relationship between pairs of angles that are vertical, adjacent, supplementary, and complementary to determine the measure of an unknown angle • 8.12a, b, c – Represent data in boxplots, make inferences and compare data [Moved from A.10] • 8.14b EKS – Simplify algebraic expressions in one variable; represent algebraic expressions using concrete materials • 8.16a, b, d, and e – Slope of a line (positive/negative/zero); identify slope and *y*-intercept of a linear function; graph a linear function; make connections between representations • 8.17 EKS – Write verbal expressions and sentences as algebraic expressions and equations; write algebraic expressions and equations as verbal expressions and sentences • 8.18– Solve multistep linear inequalities in one variable on one or both sides of the inequality symbol, including practical problems, and graph the solution on a number line	• 8.5a – Determine whether a given number is a perfect square [Included in 7.1d EKS] • 8.6b – Measure angles of less than 360° • 8.7a – Investigate and solve problems involving volume and surface area of rectangular prisms, cylinders [Included in 7.4a], triangular-based pyramids • 8 .7 EKS – Describe the two dimensional figures that result from slicing a three-dimensional figure parallel to the base • 8.8a EKS – Rotate a figure 180°, 270°, and 360°; dilate a polygon from a fixed point (not the origin) [Included in G.3] • 8.15b – Solve two-step linear inequalities and graph the results on a number line [Moved to 7.13]
Parameter Changes/Clarifications (2016 SOL)	**Moves within Grade 8 (2009 SOL to 2016 SOL)**
• 8.1 EKS – Compare and order no more than five real numbers expressed as integers, fractions, mixed numbers, decimals, percents, numbers written in scientific notation, radicals (includes positive and negative square roots), and pi • 8.3a – Estimate and determine the two consecutive integers between which a square root lies (expanded beyond whole numbers) • 8.4 EKS – Limit computing simple interest given the principal, interest rate, and time (years) • 8.6b EKS – Describe volume of a rectangular prism when one attribute is multiplied by a factor of $\frac{1}{4}, \frac{1}{3}, \frac{1}{2}$, 2, 3 or 4; describe its surface area when one attribute is multiplied by factor of $\frac{1}{2}$ or 2 • 8.7a EKS – Restrict dilations to right triangles or rectangles to a scale factor of $\frac{1}{4}, \frac{1}{2}$, 2, 3, or 4 using the origin as center of dilation; both translate and then reflect a polygon over the *x*- or *y*-axis or reflect a polygon over the *x*- or *y*-axis and then translate; and translate a polygon both horizontally and vertically • 8.11a – Compare and contrast probability of two independent/dependent events [Moved from 6.16] • 8.13 – Make observations about data displayed limited to scatterplots only • 8.14 EKS – Evaluate algebraic expressions limited to whole number exponents and integer bases; limit number of replacements to 3; represent expressions using concrete/pictorial representations • 8.15 – Determine whether a given relation is a function using discrete points (ordered pairs, tables, and graphs); sets of data are limited to no more than 10 ordered pairs • 8.17 EKS – Solve multistep equations, up to four steps; coefficients and numeric terms will be rational; equations may contain expressions that need expansion using the distributive property or require combining like terms • 8.14, 8.17, and 8.18 EKS and US - apply properties of real numbers and properties of equality/inequality	• 8.1a – Simplify numerical expressions [Combined with 8.14a] • 8.3 – Practical problems with rational numbers [Moved to 8.4] • 8.4 – Evaluate algebraic expressions [Included in 8.14a] • 8.5b – Determine two consecutive whole numbers between which a square root lies [Included in 8.3a] • 8.5 EKS – Positive and negative square roots [Moved to 8.3b] • 8.6a – [Moved to 8.5] • 8.7 – [Moved to 8.6] • 8.8 – [Moved to 8.7] • 8.9 – [Moved to 8.8] • 8.10 – [Moved to 8.9] • 8.11 – [Moved to 8.10] • 8.12 – [Moved to 8.11] • 8.14 – [Included in 8.15a EKS and 8.16e] • 8.15a – Solve multistep linear equations [Moved to 8.17] • 8.15c – Identify properties [Incorporated into 8.14, 8.17 and 8.18 EKS and US] • 8.16 – Graph a linear equation in two variables [Included in 8.16d] • 8.17 – Domain and range [Moved to 8.15b]; dependent and independent variable [Moved to 8.16c]

EKS = Essential Knowledge and Skills, referring to the column on the right side of the Curriculum Framework

US = Understanding the Standard, referring to the column on the left side of the Curriculum Framework

Comparison of Mathematics Standards of Learning –2009 to 2016

2009 SOL	2016 SOL
Number and Number Sense	
8.1 The student will a) simplify numerical expressions involving positive exponents, using rational numbers, order of operations, and properties of operations with real numbers; and [Combined with 8.14a] b) compare and order decimals, fractions, percents, and numbers written in scientific notation. [Moved to EKS]	8.1 The student will compare and order real numbers.
8.2 The student will describe orally and in writing the relationships between the subsets of the real number system.	8.2 The student will describe the relationships between the subsets of the real number system.
	8.3 The student will a) estimate and determine the two consecutive integers between which a square root lies; and [Moved from 8.5b] b) determine both the positive and negative square roots of a given perfect square. [Moved from 8.5 EKS]
Computation and Estimation	
8.3 The student will a) solve practical problems involving rational numbers, percents, ratios, and proportions; and b) determine the percent increase or decrease for a given situation.	8.4 The student will solve practical problems involving consumer applications.
8.4 The student will apply the order of operations to evaluate algebraic expressions for given replacement values of the variables. [Moved to 8.14a]	
8.5 The student will a) determine whether a given number is a perfect square; and [Included in 7.1] b) find the two consecutive whole numbers between which a square root lies. [Included in 8.3a]	
Measurement and Geometry	
8.6 The student will a) verify by measuring and describe the relationships among vertical angles, adjacent angles, supplementary angles, and complementary angles; and b) measure angles of less than 360°.	8.5 The student will use the relationships among pairs of angles that are vertical angles, adjacent angles, supplementary angles, and complementary angles to determine the measure of unknown angles.

2009 SOL	2016 SOL
8.7 The student will a) investigate and solve practical problems involving volume and surface area of prisms, cylinders, cones, and pyramids; and b) describe how changing one measured attribute of a figure affects the volume and surface area.	8.6 The student will a) solve problems, including practical problems, involving volume and surface area of cones and square-based pyramids; and b) describe how changing one measured attribute of a rectangular prism affects the volume and surface area.
8.8 The student will a) apply transformations to plane figures; and b) identify applications of transformations.	8.7 The student will a) given a polygon, apply transformations, to include translations, reflections, and dilations, in the coordinate plane; and b) identify practical applications of transformations.
8.9 The student will construct a three-dimensional model, given the top or bottom, side, and front views.	8.8 The student will construct a three-dimensional model, given the top or bottom, side, and front views.
8.10 The student will a) verify the Pythagorean Theorem; and b) apply the Pythagorean Theorem.	8.9 The student will a) verify the Pythagorean Theorem; and b) apply the Pythagorean Theorem.
8.11 The student will solve practical area and perimeter problems involving composite plane figures.	8.10 The student will solve area and perimeter problems, including practical problems, involving composite plane figures.
Probability and Statistics	
8.12 The student will determine the probability of independent and dependent events with and without replacement.	8.11 The student will a) compare and contrast the probability of independent and dependent events; and [Moved from 6.16] b) determine probabilities for independent and dependent events.
	8.12 The student will a) represent numerical data in boxplots; b) make observations and inferences about data represented in boxplots; and c) compare and analyze two data sets using boxplots. [Moved from A.10]
8.13 The student will a) make comparisons, predictions, and inferences, using information displayed in graphs; and b) construct and analyze scatterplots.	8.13 The student will a) represent data in scatterplots; b) make observations about data represented in scatterplots; and c) use a drawing to estimate the line of best fit for data represented in a scatterplot.

2009 SOL	2016 SOL
Patterns, Functions, and Algebra	

	8.14 The student will
	   a) evaluate an algebraic expression for given replacement values of the variables; and [Moved from 8.4 Computation and Estimation and 8.1a Number and Number Sense]
	   b) simplify algebraic expressions in one variable.

	8.15 The student will
	   a) determine whether a given relation is a function; and
	   b) determine the domain and range of a function. [Moved from 8.17]

8.14 The student will make connections between any two representations (tables, graphs, words, and rules) of a given relationship. [Included in 8.15a EKS and 8.16e]	8.16 The student will
	   a) recognize and describe the graph of a linear function with a slope that is positive, negative, or zero;
	   b) identify the slope and y-intercept of a linear function given a table of values, a graph, or an equation in $y = mx + b$ form;
	   c) determine the independent and dependent variable, given a practical situation modeled by a linear function;
	   d) graph a linear function given the equation in $y = mx + b$ form; and
	   e) make connections between and among representations of a linear function using verbal descriptions, tables, equations, and graphs.

8.15 The student will
   a) solve multistep linear equations in one variable with the variable on one and two sides of the equation;
   b) solve two-step linear inequalities and graph the results on a number line; and [Moved to 7.13]
   c) identify properties of operations used to solve an equation. [Incorporated into EKS and US of 8.14, 8.17 and 8.18]
	8.17 The student will solve multistep linear equations in one variable on one or both sides of the equation, including practical problems that require the solution of a multistep linear equation in one variable.

	8.18 The student will solve multistep linear inequalities in one variable with the variable on one or both sides of the inequality symbol, including practical problems, and graph the solution on a number line.
8.16 The student will graph a linear equation in two variables. [Incorporated into 8.16d]	
8.17 The student will identify the domain, range, [Moved to 8.15b] independent variable, or dependent variable [Moved to 8.16c] in a given situation.	