**Grade 7– Crosswalk (Summary of Revisions): 2016 *Mathematics Standards of Learning and Curriculum Framework***

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| **Additions (2016 SOL)** | **Deletions from Grade 7 (2009 SOL)** |
| * 7.1d EKS – Identify the perfect squares from 0 to 400
* 7.2 – Solve practical problems involving operations with rational numbers
* 7.5 EKS – Determine unknown side lengths or angle measures, given two similar quadrilaterals or triangles; solve a proportion to find a missing side length of similar quadrilaterals and triangles
* 7.6b – Determine unknown side lengths or angle measures [EKS bullet moved from 6.13] of quadrilaterals, using properties of quadrilaterals
* 7.10 – Determine slope as rate of change and write an equations in *y* = *mx* form to represent a proportional relationship; graph lines representing proportional relationships; determine the *y*-intercept and write equations of lines in *y* = *x* + *b* form to represent the relationship; graph lines representing additive relationships; and make connections among representations (verbal descriptions, tables, equations, and graphs)
* 7.13 – Solve two-step inequalities and practical problems [Moved from 8.15b]
 | * 7.2 – Describe and represent arithmetic and geometric sequences using variable expressions [Included in AFDA.1 EKS and AII.5]
* 7.3 – Model operations with integers [Moved to 6.6a EKS] and perform operations with integers [Moved to 6.6a]
* 7.5c – Describe how changing one attribute of a rectangular prism affects surface area and volume [Included in 8.6b]
* 7.6 – Determine whether two figures are similar [Included in G.7]
* 7.8 – Transform a figure using dilation [Included in 8.7] and rotation [Included in G.3]
* 7.10 – Determine the probability of compound events using the Fundamental Counting Principle [Moved to 5.15]
* 7.14a – Solve one-step linear equations in one variable and practical problems [Included in 6.13]
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| **Parameter Changes/Clarifications (2016 SOL)** | **Moves within Grade 7 (2009 SOL TO 2016 SOL)** |
| * 7.1b EKS – Compare and order no more than four numbers written in scientific notation; convert between a number written in scientific notation and decimals
* 7.1c and 7.1c EKS – Compare and order rational numbers (positive/negative) expressed as integers, fractions (proper/improper), mixed numbers, decimals, and percents
* 7.3 EKS – Create and use a ratio table to determine missing values in a proportional relationship; apply proportional reasoning to convert units of measurement given the conversion factor [Moved from 6.9]
* 7.7 EKS – Transformations of a right triangle or rectangle can include both translation and then reflection over the *x*- or *y*-axis, or reflection over the *x*- or *y*-axis and then translation
* 7.8a – Determine theoretical and experimental probabilities explicitly included in standard
* 7.9a EKS – Number of data values to construct a histogram is no longer limited
* 7.9b – Observations/inferences about data represented in a histogram now in standard
* 7.9c – Compare histograms with the same data represented in other graphs now specified as line plots, circle graphs, and stem-and-leaf plots
* 7.11 EKS – Represent algebraic expressions using concrete materials and pictorial representations; evaluating expressions – limit exponents to 1, 2, 3, or 4; no braces, but can include brackets and absolute value; square roots limited to perfect squares
* 7.13 EKS – Solve one-step and two-step inequalities including practical problems using addition, subtraction, multiplication and division; coefficients and numeric terms are rational
* 7.11, 7.12, 7.13 EKS and US - apply properties of real numbers and properties of equality/inequality
 | * 7.4 – [Moved to 7.3]
* 7.5a, b – [Moved to 7.4a, b]
* 7.6 – [Moved to 7.5]
* 7.7 – [Moved to 7.6]
* 7.8 – [Moved to 7.7]
* 7.9 – [Moved to 7.8]
* 7.11 – [Moved to 7.9]
* 7.12 – [Included in 7.10e]
* 7.13a – Write verbal expressions and sentences as algebraic expressions and equations and vice versa [Included in 7.12 EKS]
* 7.13b – [Moved to 7.11]
* 7.14 – [Moved to 7.12]
* 7.15 – [Moved to 7.13]
* 7.16 – Properties of real numbers [Incorporated into 7.11, 7.12, and 7.13 EKS and US]
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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** |
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| **Number and Number Sense**\*On the state assessment, items measuring this objective are assessed without the use of a calculator. |
| 7.1 The student willa) investigate and describe the concept of negative exponents for powers of ten;b) determine scientific notation for numbers greater than zero;\*c) compare and order fractions, decimals, percents, and numbers written in scientific notation;\*d) determine square roots;\* ande) identify and describe absolute value for rational numbers.  | 7.1 The student will 1. investigate and describe the concept of negative exponents for powers of ten;
2. compare and order numbers greater than zero written in scientific notation;\*
3. compare and order rational numbers;\*
4. determine square roots of perfect squares;\*and
5. identify and describe absolute value of rational numbers.
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| 7.2 The student will describe and represent arithmetic and geometric sequences, using variable expressions. [Included in AFDA.1 EKS and AII.5] |  |
| **Computation and Estimation**\*On the state assessment, items measuring this objective are assessed without the use of a calculator. |
|  | 7.2 The student will solve practical problems involving operations with rational numbers.  |
| 7.3 The student willa) model addition, subtraction, multiplication, and division of integers; and [Moved to 6.6a EKS]b) add, subtract, multiply, and divide integers.\* [Moved to 6.6a] |  |
| 7.4 The student will solve single-step and multistep practical problems, using proportional reasoning. | 7.3 The student will solve single-step and multistep practical problems, using proportional reasoning.  |
| **Measurement and Geometry** |
| 7.5 The student willa) describe volume and surface area of cylinders;b) solve practical problems involving the volume and surface area of rectangular prisms and cylinders; andc) describe how changing one measured attribute of a rectangular prism affects its volume and surface area. [Included in 8.6b] | 7.4 The student will 1. describe and determine the volume and surface area of rectangular prisms and cylinders; and
2. solve problems, including practical problems, involving the volume and surface area of rectangular prisms and cylinders.
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| 7.6 The student will determine whether plane figures—quadrilaterals and triangles—are similar [Included in G.7] and write proportions to express the relationships between corresponding sides of similar figures. | 7.5 The student will solve problems, including practical problems, involving the relationship between corresponding sides and corresponding angles of similar quadrilaterals and triangles.  |
| 7.7 The student will compare and contrast the following quadrilaterals based on properties: parallelogram, rectangle, square, rhombus, and trapezoid. | 7.6 The student will 1. compare and contrast quadrilaterals based on their properties; and
2. determine unknown side lengths or angle measures of quadrilaterals.
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| 7.8 The student, given a polygon in the coordinate plane, will represent transformations (reflections dilations [Included in 8.7a and G.3], rotations [Included in G.3], and translations) by graphing in the coordinate plane. | 7.7 The student will apply translations and reflections of right triangles or rectangles in the coordinate plane. |
| **Probability and Statistics** |
| 7.9 The student will investigate and describe the difference between the experimental probability and theoretical probability of an event. | 7.8 The student will 1. determine the theoretical and experimental probabilities of an event; and
2. investigate and describe the difference between the experimental probability and theoretical probability of an event.
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| 7.10 The student will determine the probability of compound events, using the Fundamental (Basic) Counting Principle. [Moved to 5.15] |  |
| 7.11 The student, given data for a practical situation, willa) construct and analyze histograms; andb) compare and contrast histograms with other types of graphs presenting information from the same data set. | 7.9 The student, given data in a practical situation, will 1. represent data in a histogram;
2. make observations and inferences about data represented in a histogram; and
3. compare histograms with the same data represented in stem-and-leaf plots, line plots, and circle graphs.
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| **Patterns, Functions, and Algebra** |
| 7.12 The student will represent relationships with tables, graphs, rules, and words. [Included in 7.10e] | 7.10 The student will a) determine the slope, *m*, as a rate of change in a proportional relationship between two quantities and write an equation in the form *y* = *mx* to represent the relationship;b) graph a line representing a proportional relationship between two quantities given the slope and an ordered pair, or given the equation in *y = mx* form, where *m* represents the slope as rate of change;c) determine the *y*-intercept, *b*, in an additive relationship between two quantities and write an equation in the form *y* = *x* + *b* to represent the relationship;d) graph a line representing an additive relationship between two quantities given the *y*-intercept and an ordered pair, or given the equation in the form *y* = *x* + *b*, where *b* represents the *y*-intercept; ande) make connections between and among representations of a proportional or additive relationship between two quantities using verbal descriptions, tables, equations, and graphs. |
| 7.13 The student willa) write verbal expressions as algebraic expressions and sentences as equations and vice versa; and [Included in 7.12 EKS]b) evaluate algebraic expressions for given replacement values of the variables. | 7.11 The student will evaluate algebraic expressions for given replacement values of the variables. |
| 7.14 The student willa) solve one- and two-step linear equations in one variable; andb) solve practical problems requiring the solution of one- and two-step linear equations.[One-step equations included in 6.13] | * 1. The student will solve two-step linear equations in one variable, including practical problems that require the solution of a two-step linear equation in one variable.
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| 7.15 The student willa) solve one-step inequalities in one variable; andb) graph solutions to inequalities on the number line. | 7.13 The student will solve one- and two-step linear inequalities in one variable, including practical problems, involving addition, subtraction, multiplication, and division, and graph the solution on a number line. |
| 7.16 The student will applythe following properties of operations with real numbers:a) the commutative and associative properties for addition and multiplication;b) the distributive property;c) the additive and multiplicative identity properties;d) the additive and multiplicative inverse properties; ande) the multiplicative property of zero.[Included in EKS and US for 7.2, 7.11, 7.12, and 7.13] |  |