**Grade 6 – Crosswalk (Summary of Revisions): 2016 *Mathematics Standards of Learning and Curriculum Framework***

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| **Additions (2016 SOL)** | **Deletions from Grade 6 (2009 SOL)** |
| * 6.6a, b – Operations with two integers and solve practical problems [Moved from 7.3]
* 6.9 EKS – Identify regular polygons; draw lines of symmetry for regular polygons
* 6.11b –Determine the effect on measures of center when a value is added, removed, or changed [Moved from 5.16 EKS]
* 6.12 – Represent proportional relationships between two quantities; determine unit rates and complete ratio tables; determine whether a proportional relationship exists; and make connections among representations of proportional relationships
* 6.13 – Solve practical problems with one-step linear equations
* 6.13 EKS – Write verbal expressions and sentences as algebraic expressions and equations; write algebraic expressions and equations as verbal expressions and sentences
* 6.14 – Represent practical situations with inequalities; solve one-step inequalities involving addition and subtraction, and graph solutions on a number line
* 6.14 EKS – Identify a value that is a solution to an inequality
 | * 6.9 – Ballpark comparisons between U.S. Customary system and metric system of measurements [Included in 7.3 EKS]
* 6.10d – Describe and determine the volume and surface area of a rectangular prism [Included in 7.4a]
* 6.13 – Properties of quadrilaterals [Included in 7.6a]
* 6.15b – Decide which measure of center is appropriate for a given purpose
* 6.16 – Dependent and independent events [Moved to 8.11a]
* 6.16b – Determine probabilities [Included in 8.11b]
* 6.17 – Arithmetic and geometric sequences [Included in AFDA.1 EKS, AII.5]
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| **Parameter Changes/Clarifications (2016 SOL)** | **Moves within Grade 6 (2009 SOL to 2016 SOL)** |
| * 6.2a EKS– Equivalencies limited to fractions with denominators of 12 or less or factors of 100
* 6.2b – Compare and order fractions, decimals, and percents extended to positive rational numbers; EKS limited to no more than four; EKS limited to fractions with denominators of 12 or less or factors of 100 to include proper, improper and mixed numbers
* 6.4 EKS – Limitation changed to whole number exponents, versus natural number exponents
* 6.5c EKS – Divisors limited to 3 digit number and decimal divisors limited to hundredths
* 6.6c – Simplify numerical expressions [Moved and modified from 6.8] extended to include integers [EKS extended to include absolute value; exponents limited to 1, 2, and 3 and bases limited to whole numbers; expression may have no more than 3 operations]
* 6.8b EKS - Coordinate values limited to integers
* 6.10a EKS – Number of data values represented in a circle graph limited in order to make comparisons that have denominators of 12 or less or those that are factors of 100
* 6.10c – Compare circle graphs with other graphs now specified as bar graphs, pictographs, and line plots
* 6.11a EKS – Represent mean as a balance point graphically on a line plot
* 6.13 EKS – Solve a one-step equation in one variable. Coefficients are limited to integers and unit fractions. Numeric terms are limited to integers.
* 6.6, 6.13, 6.14 EKS and US – apply properties of real numbers and properties of equality/inequality
 | * 6.2a – [Moved to 6.2 EKS]
* 6.2 b, c – [Included in 6.2a]
* 6.2d – Compare and order fractions, mixed numbers, decimals and percents [Included in 6.2b]
* 6.4 – [Moved to 6.5a EKS]
* 6.5 – [Moved to 6.4]
* 6.6 – [Moved to 6.5a, b]
* 6.7 – [Moved to 6.5c]
* 6.8 – [Moved to 6.6c and modified]
* 6.10a, b, c – [Moved to 6.7a, b, c]
* 6.11 – [Moved to 6.8]
* 6.12 – [Moved to 6.9]; Draw polygons in the coordinate plane and find side lengths using the coordinates [Moved to 6.8]
* 6.13 – [Moved to 6.12]
* 6.14 – [Moved to 6.10]
* 6.15a – [Moved to 6.11a]
* 6.18 – [Moved to 6.13]
* 6.19 – Investigate and recognize properties [Incorporated into EKS and US for 6.6, 6.13, and 6.14]
* 6.20 – [Moved to 6.14]
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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. |
| 6.1 The student will describe and compare data, using ratios, and will use appropriate notations, such as *, a* to *b*, and *a*:*b*. | 6.1 The student will represent relationships between quantities using ratios, and will use appropriate notations, such as *, a* to *b*, and *a*:*b*. |
| 6.2 The student willa) investigate and describe fractions, decimals, and percents as ratios; [Moved to 6.2 EKS]b) identify a given fraction, decimal, or percent from a representation; [Included in 6.2a]c) demonstrate equivalent relationships among fractions, decimals, and percents;\* and [Included in 6.2a]d) compare and order fractions, decimals, and percents.\* [Included in 6.2b]  | 6.2 The student will 1. represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; and \*
2. compare and order positive rational numbers.\*
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| 6.3 The student willa) identify and represent integers;b) order and compare integers; andc) identify and describe absolute value of integers. | 6.3 The student will1. identify and represent integers;
2. compare and order integers; and
3. identify and describe absolute value of integers.
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| 6.4 The student will demonstrate multiple representations of multiplication and division of fractions. [Moved to 6.5 EKS] |  |
| 6.5 The student will investigate and describe concepts of positive exponents and perfect squares. | 6.4 The student will recognize and represent patterns with whole number exponents and perfect squares. |
| **Computation and Estimation**\*On the state assessment, items measuring this objective are assessed without the use of a calculator. |
| 6.6 The student willa) multiply and divide fractions and mixed numbers;\* andb) estimate solutions and then solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions. | 6.5 The student willa) multiply and divide fractions and mixed numbers;\*b) solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions and mixed numbers; andc) solve multistep practical problems involving addition, subtraction, multiplication, and division of decimals. [Moved from 6.7] |
| 6.7 The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of decimals. [Moved to 6.5c] |  |
|  | 6.6 The student will 1. add, subtract, multiply, and divide integers;\* [Moved from 7.3]
2. solve practical problems involving operations with integers; and [Moved from 7.3 EKS]
3. simplify numerical expressions involving integers.\*[Moved and modified from 6.8]
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| 6.8 The student will evaluate whole number numerical expressions, using the order of operations.\* [Combined with 6.6] |  |
|  **Measurement and Geometry** |
| 6.9 The student will make ballpark comparisons between measurements in the U.S. Customary System of measurement and measurements in the metric system. [Included in 7.3 EKS] |  |
| 6.10 The student willa) define π (pi) as the ratio of the circumference of a circle to its diameter;b) solve practical problems involving circumference and area of a circle, given the diameter or radius;c) solve practical problems involving area and perimeter; andd) describe and determine the volume and surface area of a rectangular prism. [Included in 7.4a] | 6.7 The student will1. derive π (pi);
2. solve problems, including practical problems, involving circumference and area of a circle; and
3. solve problems, including practical problems, involving area and perimeter of triangles and rectangles.
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| 6.11 The student willa) identify the coordinates of a point in a coordinate plane; and [Included in 6.8b]b) graph ordered pairs in a coordinate plane. | 6.8 The student will1. identify the components of the coordinate plane; and [Moved from 6.11 EKS bullet]
2. identify the coordinates of a point and graph ordered pairs in a coordinate plane.
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| 6.12 The student will determine congruence of segments, angles, and polygons. | 6.9 The student will determine congruence of segments, angles, and polygons. |
| 6.13 The student will describe and identify properties of quadrilaterals. [Included in 7.6] |  |
| **Probability and Statistics** |
| 6.14 The student, given a problem situation, willa) construct circle graphs;b) draw conclusions and make predictions, using circle graphs; andc) compare and contrast graphs that present information from the same data set. | 6.10 The student, given a practical situation, will 1. represent data in a circle graph;
2. make observations and inferences about data represented in a circle graph; and
3. compare circle graphs with the same data represented in bar graphs, pictographs, and line plots.
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| 6.15 The student willa) describe mean as balance point; andb) decide which measure of center is appropriate for a given purpose. | 6.11 The student will 1. represent the mean of a data set graphically as the balance point; and
2. determine the effect on measures of center when a single value of a data set is added, removed, or changed. [Moved from 5.16 EKS]
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| 6.16 The student willa) compare and contrast dependent and independent events; [Moved to 8.11a] and b) determine probabilities for dependent and independent events. [Included in 8.11b] |  |
| **Patterns, Functions, and Algebra** |
| 6.17 The student will identify and extend geometric and arithmetic sequences. [Included in AFDA.1 and AII.5] |  |
|  | 6.12 The student will 1. represent a proportional relationship between two quantities, including those arising from practical situations;
2. determine the unit rate of a proportional relationship and use it to find a missing value in a ratio table;
3. determine whether a proportional relationship exists between two quantities; and
4. make connections between and among representations of a proportional relationship between two quantities using verbal descriptions, ratio tables, and graphs.
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| 6.18 The student will solve one-step linear equations in one variable involving whole number coefficients and positive rational solutions. | 6.13 The student will solve one-step linear equations in one variable, including practical problems that require the solution of a one-step linear equation in one variable.  |
| 6.19 The student will investigate and recognizea) the identity properties for addition and multiplication;b) the multiplicative property of zero; andc) the inverse property for multiplication.[Included in EKS and US for 6.6, 6.13, and 6.14] |  |
| 6.20 The student will graph inequalities on a number line. | 6.14 The student will 1. represent a practical situation with a linear inequality in one variable; and
2. solve one-step linear inequalities in one variable, involving addition or subtraction, and graph the solution on a number line.
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