



**2013–2014  
Grade 6**

This three part document serves as a guide for the transition from the Nevada State Standards (NSS) to the Common Core State Standards (CCSS). Users of this document should also refer to the Grade 6 Introduction and Narrative, and the Glossary of the CCSS.

Part I: The tables below list the Common Core State Standards introduced or maintained in Grade 6 in school year 2013–2014. Corresponding Nevada State Standards are listed where the content matches in whole or in part. Teachers are expected to maintain the NSS as well as teach the CCSS. In many cases, the expectations of the CCSS exceed the NSS. Teachers must move their instruction, and therefore their students’ mathematical knowledge, from the level of the NSS to these CCSS. Teachers must also incorporate the *Standards for Mathematical Practice* into instruction to complete students’ educational experiences. Additional clarification is provided in the comments for some CCSS. Cells shaded gray indicate CCSS introduced in school years 2011–2012 and 2012–2013 that must be maintained.

<b>Ratios and Proportional Relationships</b>			
<b>Understand ratio concepts and use ratio reasoning to solve problems.</b>			
<b>Common Core State Standard (CCSS)</b>	<b>Nevada State Standard (NSS)</b>	<b>Change<sup>1</sup></b>	<b>Comments</b>
6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”</i>			
6.RP.2 Understand the concept of a unit rate $a/b$ associated with a ratio $a:b$ with $b \neq 0$ , and use rate language in the context of a ratio relationship. <i>For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is <math>3/4</math> cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”</i>	3.6.4 Compare and use unit cost in practical situations.	0	Extend unit cost in NSS to include other applications of unit rate.
6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.  a. Make tables of equivalent ratios relating quantities with whole- number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.	2.6.4 When given a rule relating two variables, create a table and represent the ordered pairs on a coordinate plane.	0	Extend the NSS to include comparing ratios from tables.
	3.6.5 Write and apply ratios in mathematical and practical problems involving measurement and monetary conversions.	0	

<sup>1</sup> Grade Level Change from current NSS to CCSS. (i.e., -1 indicates that the NSS was previously taught in the grade above.)



**Ratios and Proportional Relationships**

**Understand ratio concepts and use ratio reasoning to solve problems.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
<p>6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</p>	<p>3.6.4 Compare and use unit cost in practical situations.</p>	0	Extend unit cost in NSS to include other applications of unit rate such as constant speed.
<p>6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.</p>	<p>1.6.7 Calculate using fractions, decimals, and percents in mathematical and practical situations.</p> <p>Use order of operations to evaluate expressions with integers.</p>	0	Extend calculation using percents in this NSS to include finding a part, percent, or whole.
<p>6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>	<p>3.6.5 Write and apply ratios in mathematical and practical problems involving measurement and monetary conversions.</p>	0	Extend writing and applying ratios about measurement and money in the NSS to <u>reasoning</u> about conversions, and to other applications.

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**The Number System**

**Apply and extend previous understandings of multiplication and division to divide fractions by fractions.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, create a story context for <math>(2/3) \div (3/4)</math> and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that <math>(2/3) \div (3/4) = 8/9</math> because <math>3/4</math> of <math>8/9</math> is <math>2/3</math>. (In general, <math>(a/b) \div (c/d) = ad/bc</math>.) How much chocolate will each person get if 3 people share <math>1/2</math> lb of chocolate equally? How many <math>3/4</math>-cup servings are in <math>2/3</math> of a cup of yogurt? How wide is a rectangular strip of land with length <math>3/4</math> mi and area <math>1/2</math> square mi?</i>	1.6.2 Add and subtract fractions with unlike denominators.  Multiply and divide with fractions using models, drawings, and numbers.  Use models to translate among fractions, decimals, and percents.	0	Although operations with fractions other than division in this NSS are still expected, they are not explicitly stated in this CCSS.
	1.6.7 Calculate using fractions, decimals, and percents in mathematical and practical situations.  Use order of operations to evaluate expressions with integers.	0	Extend order of operations in the NSS to include rational numbers and interpretation.

**Compute fluently with multi-digit numbers and find common factors and multiples.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.	1.6.7 Calculate using fractions, decimals, and percents in mathematical and practical situations.  Use order of operations to evaluate expressions with integers.	0	
6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	1.6.7 Calculate using fractions, decimals, and percents in mathematical and practical situations.  Use order of operations to evaluate expressions with integers.	0	
6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. <i>For example, express <math>36 + 8</math> as <math>4(9 + 2)</math>.</i>	1.6.8 Use the concepts of number theory, including prime and composite numbers, factors, multiples, and the rules of divisibility to solve problems.	0	Extend finding factors and multiples in the NSS to finding GCF and LCM of whole numbers.
	1.7.8 Identify and apply the distributive, commutative, and associative properties of rational numbers to solve problems.	-1	

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<b>The Number System</b> <b>Apply and extend previous understandings of numbers to the system of rational numbers.</b>			
Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.			
6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.  a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$ , and that 0 is its own opposite.			
6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.  b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	4.6.3 Using a coordinate plane, identify and locate points.  Graph coordinates representing geometric shapes in all four quadrants on a coordinate plane.	0	Extend locating points in the coordinate plane in the NSS to the concept of reflection as stated in this CCSS.
	4.7.3 Demonstrate translation, reflection, and rotation using coordinate geometry and models.  Describe the location of the original figure and its transformation on a coordinate plane.	-1	
6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.  c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.	4.6.3 Using a coordinate plane, identify and locate points.  Graph coordinates representing geometric shapes in all four quadrants on a coordinate plane.	0	

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**The Number System**

**Apply and extend previous understandings of numbers to the system of rational numbers.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.NS.7 Understand ordering and absolute value of rational numbers.  a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. <i>For example, interpret <math>-3 &gt; -7</math> as a statement that <math>-3</math> is located to the right of <math>-7</math> on a number line oriented from left to right.</i>	1.7.3 Compare and order a combination of rational numbers, including fractions, decimals, percents, and integers in mathematical and practical situations.	-1	Extend the NSS to include interpretation of inequalities on a number line.
6.NS.7 Understand ordering and absolute value of rational numbers.  b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. <i>For example, write <math>-3^{\circ} C &gt; -7^{\circ} C</math> to express the fact that <math>-3^{\circ} C</math> is warmer than <math>-7^{\circ} C</math>.</i>	1.7.3 Compare and order a combination of rational numbers, including fractions, decimals, percents, and integers in mathematical and practical situations.	-1	Extend the NSS to include interpretation of inequalities in context.
6.NS.7 Understand ordering and absolute value of rational numbers.  c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. <i>For example, for an account balance of <math>-30</math> dollars, write <math> -30  = 30</math> to describe the size of the debt in dollars.</i>	1.7.5 Identify absolute values of integers.	-1	Extend identifying absolute value in the NSS to the concept of distance from zero (magnitude) on a number line.
6.NS.7 Understand ordering and absolute value of rational numbers.  d. Distinguish comparisons of absolute value from statements about order. <i>For example, recognize that an account balance less than <math>-30</math> dollars represents a debt greater than 30 dollars.</i>	1.7.3 Compare and order a combination of rational numbers, including fractions, decimals, percents, and integers in mathematical and practical situations.	-1	Extend comparing and ordering in the NSS to make clear the distinction between order and absolute value.
	1.7.5 Identify absolute values of integers.	-1	Extend comparing and ordering in the NSS to make clear the distinction between order and absolute value.

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**The Number System**

**Apply and extend previous understandings of numbers to the system of rational numbers.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.NS.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	4.6.3 Using a coordinate plane, identify and locate points.  Graph coordinates representing geometric shapes in all four quadrants on a coordinate plane.	0	
	4.7.5 Determine slope of a line, midpoint of a segment, and the horizontal and vertical distance between two points using coordinate geometry.	-1	Although finding midpoints and slope in the NSS is still expected, it is not explicitly stated in this CCSS.

**Expressions and Equations**

**Apply and extend previous understandings of arithmetic to algebraic expressions.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.EE.1 Write and evaluate numerical expressions involving whole number exponents.	1.12.7 Solve mathematical problems involving exponents and roots.  Perform addition, subtraction, and scalar multiplication on matrices.	-3	
6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.  a. Write expressions that record operations with numbers and with letters standing for numbers. <i>For example, express the calculation "Subtract y from 5" as <math>5 - y</math>.</i>	2.6.3 Write simple expressions and equations using variables to represent mathematical situations.	0	
6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.  b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. <i>For example, describe the expression <math>2(8 + 7)</math> as a product of two factors; view <math>(8 + 7)</math> as both a single entity and a sum of two terms.</i>			

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**Expressions and Equations**

**Apply and extend previous understandings of arithmetic to algebraic expressions.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.  c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). <i>For example, use the formulas <math>V = s^3</math> and <math>A = 6s^2</math> to find the volume and surface area of a cube with sides of length <math>s = 1/2</math>.</i>	1.7.7 Calculate with integers and other rational numbers to solve mathematical and practical situations.  Use order of operations to evaluate expressions and solve one-step equations (containing rational numbers).	-1	
	2.8.2 Evaluate formulas and algebraic expressions using rational numbers (with and without technology).  Solve and graphically represent equations and inequalities in one variable, including absolute value.	-2	
6.EE.3 Apply the properties of operations to generate equivalent expressions. <i>For example, apply the Distributive property to the expression <math>3(2 + x)</math> to produce the equivalent expression <math>6 + 3x</math>; apply the Distributive property to the expression <math>24x + 18y</math> to produce the equivalent expression <math>6(4x + 3y)</math>; apply properties of operations to <math>y + y + y</math> to produce the equivalent expression <math>3y</math>.</i>	1.7.8 Identify and apply the Distributive, Commutative, and Associative properties of rational numbers to solve problems.	-1	
	2.7.3 Simplify algebraic expressions by combining like terms.	-1	
6.EE.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). <i>For example, the expressions <math>y + y + y</math> and <math>3y</math> are equivalent because they name the same number regardless of which number <math>y</math> stands for.</i>	2.7.3 Simplify algebraic expressions by combining like terms.	-1	

**Reason about and solve one-variable equations and inequalities.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.EE.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	2.5.2 Find possible solutions to an inequality involving a variable using whole numbers as a replacement set.  Solve equations with whole numbers using a variety of methods, including inverse operations, mental math, and guess and check.	+1	Extend solving equations in the NSS to <u>understanding</u> the process as described in this CCSS.

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**Expressions and Equations**

**Reason about and solve one-variable equations and inequalities.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	2.6.3 Write simple expressions and equations using variables to represent mathematical situations.	0	
6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which $p$ , $q$ and $x$ are all nonnegative rational numbers.	2.5.2 Find possible solutions to an inequality involving a variable using whole numbers as a replacement set.  Solve equations with whole numbers using a variety of methods, including inverse operations, mental math, and guess and check.	+1	Extend solving equations in the NSS to include nonnegative rational numbers.
6.EE.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.			

**Represent and analyze quantitative relationships between dependent and independent variables.**

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.EE.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. <i>For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation <math>d = 65t</math> to represent the relationship between distance and time.</i>	2.6.3 Write simple expressions and equations using variables to represent mathematical situations.	0	
	2.8.4 Identify, model, describe, and evaluate functions (with and without technology).  Translate among verbal descriptions, graphic, tabular, and algebraic representations of mathematical situations (with and without technology).	-2	
	2.8.6 Describe how changes in the value of one variable affect the values of the remaining variables in a relation.	-2	

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<b>Geometry</b> <b>Solve real-world and mathematical problems involving area, surface area, and volume.</b>			
Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	3.6.3 Select, model, and apply formulas to find the perimeter, circumference, and area of plane figures.	0	Extend applying formulas in the NSS to the concepts of composing shapes from other shapes.
6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	3.7.3 Select, model, and apply formulas to find the volume and surface area of solid figures.	-1	Extend modeling of volume in the NSS to the concept of “packing,” including using fractional edge lengths.
6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	4.6.3 Using a coordinate plane, identify and locate points.  Graph coordinates representing geometric shapes in all four quadrants on a coordinate plane.	0	
	4.7.5 Determine slope of a line, midpoint of a segment, and the horizontal and vertical distance between two points using coordinate geometry.	-1	Although finding midpoints and slope in the NSS is still expected, it is not explicitly stated in this CCSS.
6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	3.7.3 Select, model, and apply formulas to find the volume and surface area of solid figures.	-1	
	4.7.4 Make a model of a three-dimensional figure from a two-dimensional drawing.  Make a two-dimensional drawing of a three-dimensional figure.	-1	Extend the use of nets in the NSS to figures other than prisms.

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<b>Statistics and Probability</b> <b>Develop understanding of statistical variability.</b>			
Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.SP.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. <i>For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.</i>	5.7.1 Formulate questions that guide the collection of data.  Organize, display, and read data using the appropriate graphical representations (with and without technology).	-1	Extend formulating questions in the NSS to those that anticipate variability as described in this CCSS.
6.SP.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	5.7.2 Interpret graphical representations of data to describe patterns, trends, and data distribution.	-1	
6.SP.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	5.6.2 Select and apply the measures of central tendency to describe data.	0	Extend finding measures of center in the NSS to <u>understanding</u> how they represent data sets.
	5.8.2 Select and apply appropriate measures of data distribution, using interquartile range and central tendency.	-2	Extend finding measures of variation in the NSS to <u>understanding</u> how they represent data sets.
<b>Summarize and describe distributions.</b>			
Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	5.8.1 Organize, display, and read data including box and whisker plots (with and without technology).	-2	
6.SP.5 Summarize numerical data sets in relation to their context, such as by:  a. Reporting the number of observations.	5.6.1 Pose questions that guide the collection of data.  Organize and represent data using a variety of graphical representations including circle graphs and scatter plots.	0	
6.SP.5 Summarize numerical data sets in relation to their context, such as by:  b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.			

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<b>Statistics and Probability</b> <b>Summarize and describe distributions.</b>			
Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change <sup>1</sup>	Comments
6.SP.5 Summarize numerical data sets in relation to their context, such as by:  c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.	5.8.2 Select and apply appropriate measures of data distribution, using interquartile range and central tendency.	-2	Extend finding measures of variation in the NSS to computation and meaning of mean absolute deviation.  De-emphasize range as a measure of variation.
6.SP.5 Summarize numerical data sets in relation to their context, such as by:  d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.			

Parts II and III: All Nevada State Standards are now obsolete. All Common Core State Standards will be now assessed.

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