2012–2013
Grade 7

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 7 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 7 in school year 2012–2013. 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 year 2011–2012 that must be maintained.

Ratios and Proportional Relationships

Analyze proportional relationships and use them to solve real-world and mathematical problems.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction* $\frac{1/2}{1/4}$ *miles per hour, equivalently 2 miles per hour.*	3.8.5 Apply ratios and proportions to calculate rates and solve mathematical and practical problems using indirect measure.	–1	Extend work with ratios and proportions in the NSS to include complex fractions.
7.RP.2 Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	3.7.5 Write and apply proportions to solve mathematical and practical problems involving measurement and monetary conversions.	0	Extend writing and applying proportions in the NSS to include exploration of proportions in multiple ways.
7.RP.2 Recognize and represent proportional relationships between quantities. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.			

[1] 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

Analyze proportional relationships and use them to solve real-world and mathematical problems.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7.RP.2 Recognize and represent proportional relationships between quantities. c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.*	3.7.5 Write and apply proportions to solve mathematical and practical problems involving measurement and monetary conversions.	0	Extend work with measurement and monetary conversions in the NSS to include other applications.
7.RP.2 Recognize and represent proportional relationships between quantities. d. Explain what a point (*x*, *y*) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, *r*) where *r* is the unit rate.			
7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*	3.7.4 Calculate simple interest in monetary problems.	0	
	3.7.5 Write and apply proportions to solve mathematical and practical problems involving measurement and monetary conversions.	0	Extend writing and applying proportions in the NSS to percent error and other applications of multistep ratio and percent problems.
	3.8.4 Calculate percents in monetary problems.	–1	

[1] Grade Level Change from current NSS to CCSS. (i.e., –1 indicates that the NSS was previously taught in the grade above.)

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.*	1.8.8 Identify and apply the Identity property, Inverse property, and the absolute value of real numbers to solve problems.	–1	Extend the NSS to describing real-world situations and not simply identifying and applying the properties.
7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. b. Understand $p + q$ as the number located a distance $\|q\|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.	1.8.8 Identify and apply the Identity property, Inverse property, and the absolute value of real numbers to solve problems.	–1	Extend the application of absolute value in the NSS to addition and subtraction on a number line.
7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	1.8.8 Identify and apply the Identity property, Inverse property, and the absolute value of real numbers to solve problems.	–1	Extend the application of the Inverse property and absolute value in the NSS to addition and subtraction on a number line.

[1] Grade Level Change from current NSS to CCSS. (i.e., –1 indicates that the NSS was previously taught in the grade above.)

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. d. Apply properties of operations as strategies to add and subtract rational numbers.	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).	0	
	1.7.8 Identify and apply the Distributive, Commutative, and Associative properties of rational numbers to solve problems.	0	
7.NS.2 Recognize and represent proportional relationships between quantities. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the Distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	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).	0	Extend the teaching of rules for operations with signed numbers in the NSS to an <u>understanding</u> of the rules through the use of properties of rational numbers.
	1.7.8 Identify and apply the Distributive, Commutative, and Associative properties of rational numbers to solve problems.	0	
7.NS.2 Recognize and represent proportional relationships between quantities. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.	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).	0	Extend the teaching of rules for operations with signed numbers in the NSS to an <u>understanding</u> of the rules through the use of properties of rational numbers.
7.NS.2 Recognize and represent proportional relationships between quantities. c. Apply properties of operations as strategies to multiply and divide rational numbers.	1.7.8 Identify and apply the Distributive, Commutative, and Associative properties of rational numbers to solve problems.	0	
	1.8.8 Identify and apply the Identity property, Inverse property, and the absolute value of real numbers to solve problems.	–1	

[1] Grade Level Change from current NSS to CCSS. (i.e., –1 indicates that the NSS was previously taught in the grade above.)

The Number System

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7.NS.2 Recognize and represent proportional relationships between quantities. d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	1.7.2 Translate among fractions, decimals, and percents, including fractional percents.	0	Extend the skill of translating from a fraction to a decimal in the NSS to understanding that the decimal form of a fraction must terminate or repeat.
7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers. *Note: Computations with rational numbers extend the rules for manipulating fractions to complex fractions.*	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).	0	

Expressions and Equations

Use properties of operations to generate equivalent expressions.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.			
7. EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05.*			

[1] Grade Level Change from current NSS to CCSS. (i.e., –1 indicates that the NSS was previously taught in the grade above.)

Expressions and Equations

Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7. EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*	1.7.2 Translate among fractions, decimals, and percents, including fractional percents.	0	
	1.7.6 Generate a reasonable estimate for a computation using a variety of methods. Select and round to the appropriate significant digit.	0	Application to real-world situations may or may not require rounding.
	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).	0	
	1.7.8 Identify and apply the Distributive, Commutative, and Associative properties of rational numbers to solve problems.	0	
	1.8.8 Identify and apply the Identity property, Inverse property, and the absolute value of real numbers to solve problems.	–1	
7. EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*	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.	–1	

[1] Grade Level Change from current NSS to CCSS. (i.e., –1 indicates that the NSS was previously taught in the grade above.)

Expressions and Equations

Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7. EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*	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.	–1	Extend graphing of inequalities in the NSS to interpretation in context in real-world situations.

Geometry

Draw, construct, and describe geometrical figures and describe the relationships between them.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	4.6.2 Determine actual measurements represented on scale drawings. Convert actual measurements to scale.	+1	
	4.7.2 Make scale drawings using ratios and proportions.	0	
7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	4.6.8 Construct circles, angles, and triangles based on given measurements using a variety of methods and tools including compass, straight edge, paper folding, and technology.	+1	
	4.8.8 Construct geometric figures using a variety of tools.	–1	
7.G.3 Describe the two-dimensional figures that result from slicing three- dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	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.	0	Extend work with figures in the NSS to include finding cross-sections of 3-D shapes by slicing.

[1] Grade Level Change from current NSS to CCSS. (i.e., –1 indicates that the NSS was previously taught in the grade above.)

Geometry

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Common Core State Standard (CCSS)	Nevada State Standard (NSS)	Change[1]	Comments
7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	3.6.3 Select, model, and apply formulas to find the perimeter, circumference, and area of plane figures.	+1	Extend the use of formulas in the NSS to derivation of the relationship between circumference and area of a circle.
7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	4.12.6 Solve problems using complementary and supplementary angles, congruent angles, vertical angles, angles formed when parallel lines are cut by a transversal and angles in polygons.	–2	
7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	3.7.3 Select, model, and apply formulas to find the volume and surface area of solid figures.	0	Extend applying formulas in the NSS to real-world situations.

Part II: The table below lists the Nevada State Standards (NSS) teachers are expected to continue to teach in Grade 7 in school year 2012–2013. In some cases, only part of the standard is to be maintained. These standards are still eligible to be assessed. Standards in **bold** indicate those found in Part I that link to the CCSS. Standards <u>underlined</u> indicate those that cannot be assessed on the state Criterion Reference Test (CRT). Additional clarification is provided in the comments.

Nevada State Standard (NSS)	Comments
<u>1.7.1</u>, **1.7.2**, 1.7.3, 1.7.5, **1.7.6**, **1.7.7**, **1.7.8** 2.7.1, 2.7.2, <u>2.7.</u>3, 2.7.4, 2.7.5 **3.7.3**, **3.7.4**, **3.7.5** **<u>4.7.2</u>**, **<u>4.7.4</u>**, 4.7.5, 4.7.6, <u>4.7.8</u>, <u>4.7.9</u> 5.7.1, 5.7.2, 5.7.5, 5.7.6	Continue to teach the entire standard.

[1] Grade Level Change from current NSS to CCSS. (i.e., –1 indicates that the NSS was previously taught in the grade above.)

Part III: The table below lists the Nevada State Standards (NSS) teachers are no longer expected to teach in Grade 7 in school year 2012–2013. In some cases, only part of a standard is to be deleted. Additional clarification is provided in the comments. Cells shaded gray indicate NSS eliminated in school year 2011–2012.

Nevada State Standard (NSS)	**Comments**
3.7.1 Estimate and compare corresponding units of measure for area and volume/capacity between customary and metric systems.	While this NSS is being removed, such applications is implied by CCSS 6.RP.3d and 7.RP.3.
3.7.2 Given a measurement, identify the greatest possible error.	
3.7.6 Use elapsed time to solve practical problems.	This standard is in the CCSS in Grades 4 and 5.
4.7.1 Identify, classify, compare, and draw regular and irregular polygons. Find and verify the sum of the measures of interior angles of triangles and quadrilaterals.	This standard is in the CCSS in Grades 3 and 8, and High School.
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.	This standard is in the CCSS in Grade 8.
4.7.7 Model the Pythagorean Theorem and solve for the hypotenuse.	This standard is in the CCSS in Grade 8.
5.7.3 Analyze the effect a change of scale will have on statistical charts and graphs.	
5.7.4 Find the number of permutations possible for an event in mathematical and practical situations.	This standard is in the CCSS in High School.

[1] Grade Level Change from current NSS to CCSS. (i.e., –1 indicates that the NSS was previously taught in the grade above.)