Carson City School District
Carson City, Nevada

Grade 8 Math Curriculum Map

KEY TO PRIORITY FRAMEWORK AND ASSESSMENT LEVEL

E = Enduring. Complex, engaging, "big ideas", will require more in-depth knowledge.
I = Important to know and do. Students should retain detailed but not extensive knowledge.
W = Worth being familiar with. Students should have awareness of key people, ideas, concepts, and terms.

L = Nevada Academic Standards that are assessable at the local level ONLY.
S = Nevada Academic Standards that are assessable at the state and local levels.

As an example the letters E/L would indicate that the standard requires enduring knowledge and will only be assessed at the local level.

KEY TO INTERDISCIPLINARY LINKS

C = Civics E = English Language Arts Ec = Economics G = Geography
H = History M = Mathematics S = Science He = Health

RESOURCE KEY

PA = Passport to Algebra and Geometry BL = Accelerated Math Basic Library
L6 = Accelerated Math 6th Grade Library

Content Organization: The problem solving and mathematical communication/reasoning/connection standards are to be introduced and reinforced throughout the year.

Content Standard 1.0: Number Sense/Computation – *Students will accurately calculate and use estimation techniques, number relationships, operation rules and algorithm; they will determine the reasonableness of answers and the accuracy of solutions.*

Content Standard 2.0: Patterns/Algebraic Thinking – *Students will use various algebraic methods to analyze, illustrate, extend, and create numerous representations (words, numbers, tables, and graphs of patterns, functions, and algebraic relations as modeled in practical situations.*

Content Standard 3.0: Measurement – *Students will use appropriate tools and techniques of measurement to determine, estimate, record and verify direct and indirect measurements.*

Content Standard 4.0: Geometry – *Students will identify, represent, verify and apply spatial relationships and geometric properties.*

Content Standard 5.0: Data Analysis/Statistics – *Students will collect, organize, display, interpret and analyze data to determine statistical relationships and probability projections.*

Process Standard 6.0: Problem Solving – *Students will develop their ability to solve problems by engaging in developmentally appropriate problem solving opportunities in which there is a need to use various approaches to investigate and understand mathematical concepts in order to formulate their own problems; find solutions to problems from everyday situations; develop and apply strategies to solve a wide variety of problems; and integrate mathematical reasoning, communication and connections.*

Process Standard 7.0: Mathematical Communication/Reasoning/Connections – *Students will develop their ability to communicate mathematically by solving problems in which there is a need to obtain information from the real world through reading, listening, and observing in order to transfer this information into a mathematical language and symbols; process this information mathematically; and present results in written, oral and visual formats.*

Process Standard 8.0: Mathematical Reasoning - *Students will develop their ability to reason mathematically by solving problems in which there is a need to investigate significant mathematical ideas and construct their own learning in all content areas in order to justify their thinking; reinforce their logical reasoning abilities; reflect on and clarify their own thinking; and ask questions to extend their thinking.*

Process Standard 9.0: Mathematical Connections - *Students will develop the ability to make mathematical connections by solving problems in which there is a need to view mathematics as an integrated whole, identifying relationships between context strands, and integrating mathematics with other dosciplines, allowing the flexibility to approach problems in a variety of ways within and beyond the field of mathematics.*

Carson City School District
Math Curriculum Map: 8th Grade

Section	First Quarter Skills	Content Standards	Priority/ Assessment	Resources
	Explore Patterns			
1-6, 25, 215, 216	Recognize and describe number patterns	2.8.1, 2.12.5	E/S, I/S	BL, L6
12, 16, 20, 22, 24, 47, 52, 55, 60	Use basic operations with whole numbers, fractions, and decimals	1.8.1	I/S	BL
Section 1.3	Evaluate expressions containing exponents and square roots	1.8.2	E/S	PA
61	Evaluate expressions using order of operations	1.8.1, 1.8.3	I/S, I/L	BL
Section 1.5	Evaluate variable and algebraic expressions	1.8.1, 1.8.3	I/S, I/L	PA
126 - 129	Organize data and interpreting bar and line graphs	5.8.6	I/S	BL
144	Identify polygons and parts of polygons	4.8.1	E/S	L6
Section 1.8	Use technology to discover number patterns	2.8.1, 2.8.5	E/S, I/S	PA
	Investigations in Algebra			
35 - 38	Evaluate expressions using the Distributive Property	1.8.3, 2.8.3	I/L, I/S	BL
217	Simplify expressions by adding like terms	1.8.1, 1.8.3	I/S, I/L	L6
218	Solve equations using mental math	1.8.1, 2.8.3	I/S, I/S	L6
219	Solve one-step equations using addition and subtraction	1.8.1, 2.8.3, 2.8.6	I/S, I/S, E/S	L6
Section 2.5	Solve one-step equations using multiplication and division	1.8.1, 2.8.3, 2.8.6	I/S, I/S, E/S	PA
Section 2.6, 2.7	Translate verbal expressions into algebraic expressions	2.8.4	I/S	PA
Section 2.8, 4.6, 4.7	Use problem solving strategies	2.8.5	I/S	PA

Section 2.9	Solve simple inequalities	2.8.6	E/S	PA
	Model Integers			
206 - 208	Model integers on a number line	1.8.3	I/L	L6
Section 3.1	Find the absolute value of a number	1.8.3	I/L	PA
Section 3.2	Use absolute values to add to integers	1.8.1, 1.8.3	I/S, I/L	PA
209 210	Add three or more integers	1.8.1, 1.8.3	I/S, I/L	L6
Section 2.2, 3.3	Simplify expressions by adding like terms	1.8.1, 1.8.3	I/S, I/L	PA
211 - 213	Simplify expressions involving subtraction	1.8.1, 1.8.3	I/S, I/L	L6
Section 3.5	Multiply integers	1.8.1, 1.8.3	I/S, I/L	PA
Section 3.6	Divide integers	1.8.1, 1.8.3	I/S, I/L	PA
214	Use properties of equality to solve equations involving integers	1.8.1, 1.8.3	I/S, I/L	L6
Section 3.8	Plot points in a coordinate plane	2.8.2, 4.8.5	E/S, I/S	PA

Section	Second Quarter Skills	Content Standards	Priority/ Assessment	Resources
	Explore the Language of Algebra			
Section 4.1, 4.2, 4.3, 4.4	Solve equations using addition/subtraction/multiplication/ division	1.8.1, 2.8.3, 2.8.7	I/S, I/S, I/S	PA
Section 4.1, 4.2, 4.3, 4.4	Solve multi-step equations	1.8.1, 2.8.3, 2.8.7	I/S, I/S, I/S	PA
Section 4.5	Solve equations with variables on both sides	1.8.1, 2.8.3	I/S, I/S	PA
Section 2.8, 4.6, 4.7	Use problem solving strategies	2.8.5	I/S	PA
133, 159	Use simple geometric figures to estimate areas	3.8.5	E/S	BL, L6
	Explore Data and Graphs			
170, 178	Make and interpret pictographs and timelines	2.8.2, 2.8.5, 5.8.1	E/S, I/S, E/S	L6
171, 173	Make and interpret bar graphs and histograms	2.8.2, 2.8.5, 5.8.1	E/S, I/S, E/S	L6
172, 174	Make and interpret line graphs	2.8.2, 2.8.5, 5.8.1	E/S, I/S, E/S	L6
179	Choose and create an appropriate graph	5.8.1	E/S	L6
Section 5.5	Recognize and correct misleading graphs	5.8.1	E/S	PA
176 -177	Make and interpret line plots	5.8.1	E/S	L6
182 - 185	Make and interpret scatter plots	5.8.1	E/S	L6
180 - 181	Calculate the probability of an event	5.8.2, 5.8.3, 5.8.5, 5.8.6	I/S, I/S, E/S, I/S	L6
	Explore Number Theory			
25	Factor natural numbers	1.8.3	I/L	BL
26 - 28	Factor integers and algebraic expressions	1.8.3	I/L	BL

29	Find the greatest common factors of integers and algebraic expressions	1.8.3	I/L	BL
30 - 31	Find the least common multiple of two numbers	1.8.3	I/L	BL
62 - 71	Simplify and compare two fractions	1.8.3	I/L	BL
96 - 103	Write decimals as fractions	1.8.3, 1.8.9	I/L, E/S	BL
Section 6.7	Evaluate powers with positive and negative exponents	1.8.1, 1.8.2	I/S, E/S	PA
Section 6.8	Use scientific notation to represent numbers and to solve problems	1.8.1, 1.8.2, 1.8.3	I/S, E/S	PA
Section 6.9	Recognize and use formulas to predict number patterns	1.8.3, 1.8.7, 2.8.1	I/L, E/S, E/S	PA

Section	Third Quarter Skills	Content Standards	Priority/ Assessment	Resources
	Rational Numbers and Percents			
73, 80	Add and subtract fractions with like denominators	1.8.1, 1.8.3, 1.8.6	I/S, I/L, E/S	BL
75, 77, 78, 81 - 84	Add and subtract fractions with unlike denominators	1.8.1, 1.8.3, 1.8.6	I/S, I/L, E/S	BL
104 - 107	Explore, use, and convert between percents, decimals, and fractions	1.8.1, 1.8.2, 1.8.3, 1.8.6, 2.8.3, 3.8.4	I/S, E/S, I/L, E/S, I/S	BL
89 - 90	Multiply rational numbers	1.8.1, 1.8.3	I/S, I/L	BL
95	Divide rational numbers	1.8.1, 1.8.3, 3.8.2	I/S, I/L, I/S	BL
108 – 109 110 – 111, 115	Explore, use, and convert between percents, decimals, and fractions	1.8.1, 1.8.2, 1.8.3, 1.8.9, 2.8.3,	I/S, E/S, I/L, E/S, I/S	BL
112 - 114	Find the percent of a number	1.8.1, 1.8.2, 1.8.3, 2.8.3,	I/S, E/S, I/L, I/S	BL
	Proportion, Percent, and Probability			
117 - 120	Explore and calculate rates and ratios	1.8.1, 1.8.2, 2.8.3, 3.8.5,	I/S, E/S, I/S, E/S	BL
121 - 125	Solve proportions	1.8.1, 1.8.2, 2.8.3, 3.8.5, 4.8.2	I/S, E/S, I/S, E/S, E/S	BL
116	Solve equations involving percents	1.8.1, 1.8.2, 1.8.3, 2.8.3,	I/S, E/S, I/L, I/S	BL
Section 8.7	Use the Counting Principle	5.8.3	I/S	PA
181	Calculate the probability of an event	5.8.2, 5.8.3, 5.8.5, 5.8.6	I/S, I/S, E/S, I/S	L6

Section	Fourth Quarter Skills	Content Standards	Priority/ Assessment	Resources
	Real Numbers and Inequalities			
Section 9.1	Solve square roots and solve equations involving square roots	1.8.1	I/S	PA
Section 9.2	Classify and represent numbers in the real number system	1.8.3, 2.8.6	I/L, E/S	PA
Section 9.3, 9.4	Use the Pythagorean Theorem	4.8.7	I/S	PA
Section 9.5	Write and graph inequalities	1.8.3, 2.8.6	I/L, E/S	PA
Section 9.6	Solve one-step inequalities using multiplication and division	2.8.6	E/S	PA
Section 9.7	Solve multi-step inequalities	2.8.6	E/S	PA
	Geometry Concepts / Spatial Thinking			
140 - 143	Explore properties of geometric shapes	4.8.6, 4.8.8	I/S, W/L	L6
145 - 146	Explore properties of triangles and quadrilaterals	4.8.6, 4.8.8	I/S, W/L	L6
147	Explore congruency of polygons	4.8.2	E/S	L6
	Congruence, Similarity, and Transformations			
132 - 137	Calculate the area and perimeter of quadrilaterals and triangles	3.8.3, 3.8.5, 4.8.1	E/S, E/S	BL
	Measurements in Geometry			
138 - 139	Calculate the area and circumference of circles	3.8.3, 3.8.5, 4.8.1	E/S, E/S, E/S	BL
Section 12.2	Identify and describe polyhedrons and other three-dimensional solids	3.8.3, 3.8.5, 4.8.8	E/S, E/S, W/L	PA
169	Explore and calculate the surface area of prisms, pyramids, and cylinders	3.8.3, 3.8.5, 4.8.8	E/S, E/S, W/L	L6
167	Explore and calculate the volumes of prisms	3.8.3, 3.8.5, 4.8.8	E/S, E/S, W/L	L6
143	Explore and calculate the volumes of cylinders	3.8.3, 3.8.5, 4.8.8	E/S, E/S, W/L	BL

143	Explore and calculate the volumes of pyramids and cones	3.8.3, 3.8.5, 4.8.8	E/S, E/S, W/L	BL
144	Explore and calculate the volumes of spheres	3.8.3, 3.8.5, 4.8.8	E/S, E/S, W/L	BL
	Explore Linear Equations			
Section 13.2, 13.3, 13.4,13.5,13.9	Explore relationships with distance, midpoint, slope	4.8.5	I/S	PA