

*Nevada*  
**Curricular Standards**  
**Mathematics - Grade 8**  
*Correlations with Gourmet Curriculum Press, Inc.®*  
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<i>Benchmark Number</i>	<i>Benchmark • Instructional Target</i>	<i>Gourmet Resource</i>	<i>Taught</i>	<i>Tested</i>
<b>Numbers, Number Sense, and Computation</b>				
<b>1.0</b>	<b>To solve problems, communicate, reason, and make connections within and beyond the field of mathematics, students will accurately calculate and use estimation techniques, number relationships, operation rules, and algorithms; they will determine the reasonableness of answers and the accuracy of solutions.</b>			
<b>1.8.1</b>	<ul style="list-style-type: none"> <li><i>Read, write, add, subtract, multiply, and divide real numbers in various forms including radicals, exponential, and scientific notation.</i></li> </ul>	<b>Appetizers 1 A &amp; B; 2 E; 1 (Number Concepts); 2 (Mathematical Relations)</b>		
<b>1.8.2</b>	<ul style="list-style-type: none"> <li><i>Compute with rational and irrational numbers to solve a variety of problems including rates, recipes, unit costs, and percents (e.g., discounts, interest, sale, prices, commissions, taxes).</i></li> </ul>	<b>Appetizers 2 D, E, F, &amp; G; 2 (Mathematical Relations)</b>		
<b>1.8.3</b>	<ul style="list-style-type: none"> <li><i>Explain and apply number theory and the properties of real numbers to solve problems.</i></li> </ul>	<b>Appetizers 2 A; 2 (Mathematical Relations)</b>		
<b>1.8.6</b>	<ul style="list-style-type: none"> <li><i>Compare and order rational numbers.</i></li> </ul>	<b>Appetizers 1 C; 1 (Number Concepts)</b>		
<b>1.8.7</b>	<ul style="list-style-type: none"> <li><i>Estimate in problem-solving situations and in practical applications; determine the reasonableness of the answer and verify the results.</i></li> </ul>	<b>Appetizers 10 A; 13 A, B, &amp; C; 10 (Estimation); 13 (Reasonableness)</b>		
<b>1.8.9</b>	<ul style="list-style-type: none"> <li><i>Explain the relationship among fractions, decimals, and percents; translate among various representations of equal numbers (e.g., from fractions to decimals to percents, various forms of "1" such as 3/3 or 16/16) to solve problems efficiently.</i></li> </ul>	<b>Appetizers 1 E; 1 (Number Concepts)</b>		

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<b>Patterns, Functions, and Algebra</b>				
<b>2.0</b>	<b>To solve problems, communicate, reason, and make connections within and beyond the field of mathematics, students will use the 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.</b>			
<b>2.8.1</b>	<ul style="list-style-type: none"> <li>Use inductive reasoning to find the missing term in number and geometric patterns and to generalize basic patterns to the <math>n</math>th term, with and without calculators; use written, oral, and symbolic language to identify and describe patterns, sequences, and functions.</li> </ul>	<b>Appetizers 2 A &amp; B; 12 A; 2 (Mathematical Relations); 12 (Mathematical Representation)</b>		
<b>2.8.2</b>	<ul style="list-style-type: none"> <li>Translate among verbal descriptions, graphic, tabular, and algebraic representations of mathematical situations.</li> </ul>	<b>Appetizers 12 B; 12 (Mathematical Representation)</b>		
<b>2.8.3</b>	<ul style="list-style-type: none"> <li>Identify, model, describe, and evaluate relationships, including functions, using a variety of methods with and without technology.</li> </ul>	<b>Appetizers 1 E; 2 A; 3 I; 4 F &amp; H; 13 C; 1 (Number Concepts); 2 (Mathematical Relations); 3 (Geometry); 4 (Measurement); 13 (Reasonableness)</b>		
<b>2.8.4</b>	<ul style="list-style-type: none"> <li>Add and subtract binomials; describe the connection between the algebraic process and the arithmetic process.</li> </ul>	<b>Appetizers 2 G; 2 (Mathematical Relations)</b>		
<b>2.8.5</b>	<ul style="list-style-type: none"> <li>Describe how a change in one variable of a mathematical relationship affects the remaining variables using various tools and methods.</li> </ul>	<b>Appetizers 2 F; 3 I; 4 F &amp; H; 2 (Mathematical Relations); 3 (Geometry); 4 (Measurement)</b>		
<b>2.8.6</b>	<ul style="list-style-type: none"> <li>Model, identify, and solve linear equations and inequalities; relate this process to the order of operations.</li> </ul>	<b>Appetizers 2 A, F, &amp; G; 2 (Mathematical Relations)</b>		
<b>2.8.7</b>	<ul style="list-style-type: none"> <li>Solve simple linear equations and connect that process to the order of operations.</li> </ul>	<b>Appetizers 2 A, F, &amp; G; 12 A; 13 C; 2 (Mathematical Relations); 12 (Mathematical Representation); 13 (Reasonableness)</b>		

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<b>Measurement</b>				
<b>3.0</b>	<b>To solve problems, communicate, reason and make connections within and beyond the field of mathematics, students will use appropriate tools and techniques of measurement to determine, estimate, record, and verify direct and indirect measurements.</b>			
<b>3.8.2</b>	<ul style="list-style-type: none"> <li><i>Demonstrate an understanding of precision, error, and tolerance in measurement using the appropriate measurement tool to the required degree of accuracy.</i></li> </ul>	<b>Appetizers 4 G; 4 (Measurement)</b>		
<b>3.8.3</b>	<ul style="list-style-type: none"> <li><i>Select and apply appropriate formulas to solve problems; identify the relationship between changes in area and volume and changes in linear measures of figures.</i></li> </ul>	<b>Appetizers 3 I; 4 F &amp; H; 3 (Geometry); 4 (Measurement)</b>		
<b>3.8.5</b>	<ul style="list-style-type: none"> <li><i>Apply ratios and proportions to calculate rates and as a method of indirect measure (e.g., miles per hour, cost per unit).</i></li> </ul>	<b>Appetizers 2 D; 3 C &amp; E; 2 (Mathematical Relations); 3 (Geometry)</b>		
<b>Spatial Relationships and Geometry</b>				
<b>4.0</b>	<b>To solve problems, communicate, and make connections within and beyond the field of mathematics, students will identify, represent, verify, and apply spatial relationships and geometric properties.</b>			
<b>4.8.2</b>	<ul style="list-style-type: none"> <li><i>Apply the properties of equality and proportionality to solve problems involving congruent or similar shapes.</i></li> </ul>	<b>Appetizers 3 C &amp; E; 4 F; 3 (Geometry); 4 (Measurement)</b>		
<b>4.8.3</b>	<ul style="list-style-type: none"> <li><i>Use coordinate geometry and models to change scale (enlarge and reduce).</i></li> </ul>	<b>Appetizers 3 H; 3 (Geometry)</b>		
<b>4.8.5</b>	<ul style="list-style-type: none"> <li><i>Use coordinate geometry to represent and interpret relationships defined by equations and formulas (including distance, midpoint, and slope), with and without technology.</i></li> </ul>	<b>Appetizers 2 C; 2 (Mathematical Relations)</b>		

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4.8.6	<ul style="list-style-type: none"> <li>Form generalizations and validate conclusions about properties of geometric shapes including parallel lines, perpendicular lines, bisectors, triangles, and quadrilaterals.</li> </ul>	Appetizers 3 A, B, & G; 13 C; 3 (Geometry); 13 (Reasonableness)		
4.8.7	<ul style="list-style-type: none"> <li>Verify and explain the Pythagorean Theorem using various methods (e.g., using grid paper, applying it to a missing side of a right triangle); determine missing sides and angles of triangles based on properties of their sides and angles.</li> </ul>	Appetizers 3 C & D; 3 (Geometry)		
4.8.8	<ul style="list-style-type: none"> <li>Use hand tools, technology, and models to construct figures and bisect angles and line segments; distinguish among constructions, sketches and drawings.</li> </ul>	Appetizers 3 A, B, & G; 11 D; 3 (Geometry); 11 (Problem Solving)		
<b>Data Analysis</b>				
5.0	<b>To solve problems, communicate, reason, and make connections within and beyond the field of mathematics, students will collect, organize, display, interpret, and analyze data to determine statistical relationships and probability projections.</b>			
5.8.1	<ul style="list-style-type: none"> <li>Organize, display, read, and analyze data, with and without technology, using a variety of displays including box and whisker plots.</li> </ul>	Appetizers 12 B & C; 12 (Mathematical Representation)		
5.8.2	<ul style="list-style-type: none"> <li>Find the theoretical probability of an event using different counting methods (e.g., tree diagrams, sample spaces, and organized lists) and compare those results with actual (experimental) results, differentiating between the probability of an event and the odds of an event.</li> </ul>	Appetizers 5 A, B, & D; 5 (Probability/Statistics)		

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5.8.3	• Find the number of combinations possible in given situations using a variety of counting methods.	Appetizers 5 A; 5 (Probability/Statistics)		
5.8.5	• Evaluate arguments that are based on data analysis for accuracy and validity; analyze the effect a change of scale or a change of format will have on statistical charts and graphs.	Appetizers 3 H; 5 D; 3 (Geometry); 5 (Probability/Statistics)		
5.8.6	• Formulate reasonable inferences and projections based on interpolations and extrapolations of data to solve problems.	Appetizers 12 C; 13 A, B, & C; 12 (Mathematical Representation); 13 (Reasonableness)		
<b>Problem Solving</b>				
6.0	<b>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.</b>			
6.1	• Select, modify, develop, and apply strategies to solve a variety of mathematical and practical problems and to investigate and understand mathematical concepts.	Appetizers 11 A, B, C, D, & E; 12 A; 11 (Problem Solving); 12 (Mathematical Representation)		
6.2	• Apply previous experience and knowledge to new problem-solving situations.	All Appetizers		
6.5	• Verify, interpret, and evaluate results with respect to the original problem situation, determining an efficient strategy for the given situation.	Appetizers 11 A, B, C, D, & E; 13 A & C; 11 (Problem Solving); 13 (Reasonableness)		
6.6	• Try more than one strategy when the first strategy proves to be unproductive.	All Appetizers		
6.7	• Apply multi-step, integrated, mathematical problem-solving strategies, persisting until a solution is found or until it is clear that no solution exists.	All Appetizers		

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6.9	• <i>Generalize solutions and strategies from earlier problems to new problem situations.</i>	All Appetizers		
6.10	• <i>Interpret and solve a variety of mathematical problems by paraphrasing, identifying necessary and extraneous information, selecting and justifying efficient methods and/or strategies, and ensuring the answer is reasonable.</i>	All Appetizers require justification		
6.11	• <i>Apply combinations of proven strategies and previous knowledge to solve non-routine problems.</i>	12 B; 13 A & C; 12 (Mathematical Representation); 13 (Reasonableness)		
6.13	• <i>Use technology, including calculators, to solve problems and verify solutions.</i>			
6.14	• <i>Use technology, including calculators, to investigate, define, and describe quantitative relationships such as patterns and functions.</i>			
<b>Mathematical Communication</b>				
7.0	<b>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: translate this information into a mathematical language and symbols; process this information mathematically; and present results in written, oral and visual formats.</b>			
7.1	• <i>Discuss and exchange ideas about mathematics as a part of learning.</i>	All Appetizers		
7.2	• <i>Use inquiry techniques (e.g., discussion, questioning, research, data gathering) to solve mathematical problems.</i>	Interactive discussions throughout Appetizers		
7.3	• <i>Read expository text to learn about mathematics.</i>			
7.6	• <i>Interpret and solve word problems without the necessity of key words or phrases.</i>	Appetizers 11 A, B, C, D, & E; 12 A; 11 (Problem Solving); 12 (Mathematical Representation)		

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7.9	• <i>Model and explain mathematical relationships using oral, written, graphical, and algebraic methods.</i>	All Appetizers require justification		
7.10	• <i>Evaluate the effectiveness of written and oral presentations of mathematics.</i>	Interactive discussions throughout Appetizers		
7.11	• <i>Make conjectures and present arguments in discussions of mathematical ideas.</i>	Appetizers 11 F; 11 (Problem Solving)		
7.14	• <i>Explain and evaluate thinking about mathematical ideas and solutions based on the role of definitions, properties, common rules, and symbols in solving problems.</i>	Appetizers 2 F; 11 A, B, C, D, & E; 2 (Mathematical Relations); 11 (Problem Solving)		
7.15	• <i>Use everyday language to explain thinking about strategies and solutions to mathematical problems.</i>	Interactive discussions and written justification of Appetizers		
7.16	• <i>Express mathematical ideas and use them to define, compare, and solve problems orally and in writing.</i>	Appetizers 13 A, B, & C; 13 (Reasonableness)		
7.17	• <i>Use mathematical notation to communicate and explain mathematical situations.</i>	All Appetizers; emphasized in 13 B & C; 13 (Reasonableness)		

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	<b>Mathematical Reasoning</b>			
8.0	<b>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 and extend their logical reasoning abilities; reflect on and clarify their own thinking; and ask questions to extend their thinking.</b>			
8.3	<ul style="list-style-type: none"> <li>• <i>Construct, justify, and defend mathematical conclusions using logical arguments, in situations related to mathematics, science, and technology.</i></li> </ul>	Interactive discussions and written justification of Appetizers		
8.4	<ul style="list-style-type: none"> <li>• <i>Use patterns and relationships to analyze mathematical situations; draw logical conclusions about mathematical problems.</i></li> </ul>	Appetizers 2 B; 3 D & E; 4 F & H; 13 C; 2 (Mathematical Relations); 3 (Geometry); 4 (Measurement); 13 (Reasonableness)		
8.5	<ul style="list-style-type: none"> <li>• <i>Follow a logical argument and judge its validity.</i></li> </ul>	All Appetizers		
8.7	<ul style="list-style-type: none"> <li>• <i>Recognize and apply deductive and inductive reasoning in both concrete and abstract contexts.</i></li> </ul>	All Appetizers		
8.8	<ul style="list-style-type: none"> <li>• <i>Ask questions to reflect on, clarify, and extend thinking.</i></li> </ul>	Interactive discussions throughout Appetizers		
8.9	<ul style="list-style-type: none"> <li>• <i>Review and refine the assumptions and steps used to derive conclusions in mathematical arguments.</i></li> </ul>	Interactive discussions throughout Appetizers		
8.10	<ul style="list-style-type: none"> <li>• <i>Construct valid arguments; make and test conjectures about algebraic and geometric properties based on mathematical principles.</i></li> </ul>	Appetizers 2 B; 3 D & E; 4 F & H; 13 C; 2 (Mathematical Relations); 3 (Geometry); 4 (Measurement); 13 (Reasonableness)		
8.11	<ul style="list-style-type: none"> <li>• <i>Determine relevant, irrelevant, and/or sufficient information to solve mathematical problems.</i></li> </ul>	All Appetizers		

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<b>Mathematical Connections</b>				
9.0	Students will develop their 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 standards strands, and integrating mathematics with other disciplines, allowing the flexibility to approach problems in a variety of ways within and beyond the field of mathematics.			
9.1	• <i>Link new concepts to prior knowledge.</i>	All Appetizers		
9.2	• <i>Use mathematical ideas from one area of mathematics to explain an idea from another area of mathematics.</i>	All Appetizers		
9.3	• <i>Use models to explain the relationship of concepts to procedures.</i>	Appetizers 13 A; 13 (Reasonableness)		
9.4	• <i>Use the connections among mathematical topics to develop multiple approaches to problems.</i>	Appetizers 13 A & B; 13 (Reasonableness)		
9.6	• <i>Use and analyze the connections between Mathematics and other disciplines.</i>	All Appetizers		
9.7	• <i>Apply mathematical thinking and modeling to solve problems that arise in other disciplines (e.g., rhythm in music and motion in science).</i>	Appetizers 3 D; 3 (Geometry)		
9.8	• <i>Identify, explain, and use mathematics in everyday life.</i>	All Appetizers; emphasized in 3 D; 3 (Geometry)		