

**Wyoming Content Standard 1. Number Operations and Concepts**

**Skill 1. Understand the meaning of arithmetic operations and make reasonable estimates.**

<b>Benchmark</b>	<b>Where in CCSS</b>	<b>Content Limits:</b>
<p><b>06.1.4</b> Students explain their choice of estimation and problem solving strategies and justify results when performing number operations with fractions and decimals in problem-solving situations.</p> <p><b>06.1.6</b> Students demonstrate an understanding of fractions and decimals by:</p> <ul style="list-style-type: none"><li>• representing fractions as division of whole numbers;</li><li>• converting between mixed numbers and improper fractions;</li><li>• simplifying fractions and mixed numbers;</li><li>• writing fractions in equivalent forms;</li><li>• using parts of a set;</li><li>• rounding decimal numbers to 10ths, 100ths, and whole numbers (units) place; and</li><li>• converting between decimals (from .01 to .99), fractions and representing percentages.</li></ul>	<p><b>N1 is embedded in N2 and N3.</b></p>	

**Wyoming Content Standard 1. Number Operations and Concepts**

**Skill 2. Understand ways to represent numbers, relationships among numbers, and number systems.**

Benchmark	Where in CCSS	Content Limits:
<p><b>06.1.1</b> Students use the concept of place value to read and write decimals (to 1000ths) in words, standard, and expanded form.</p>	<p><b>4.NBT.2</b> (Read and write ... compare two multi-digit numbers) <b>4.NF.2</b> (Compare two fractions with different numerators and different denominators) <b>5.NB.3</b> (Read, write, and compare decimals to thousandths...)</p>	<ul style="list-style-type: none"> <li>• use of place value to read and write decimals (to thousandths) in word and standard form;</li> <li>• Items may compare whole numbers, fractions and decimals (tenths, hundredths, and thousandths) greater than zero or integers and include ordering numbers on a number line.</li> <li>• The data presented to students may be either precise values, a range of values, or a combination of precise values and estimates of other values.</li> <li>• Items may compare smaller or larger numbers, or compare the order of magnitude between numbers.</li> <li>• Words, number lines, drawings, numerals, or symbols (&lt;, &gt;, =, ≤, ≥) may be used.</li> <li>• An item may utilize one format or a variety of formats, such as fractions or decimals.</li> <li>• Items may include the relationships among whole numbers and decimals given a real-world context.</li> <li>• The place values of the fractional part of decimal numbers should range from tenths through thousandths.</li> <li>• Items may contain multiple forms of a given value.</li> <li>• Items will not include repeating decimals.</li> <li>• Some items should include word names as well as numerals.</li> <li>• Items should be set in either a real-world or mathematical context.</li> <li>• CR items may have students “Show your work or explain your answer.”</li> <li>• Graphics should be used in some of these items, as appropriate.</li> </ul>
<p><b>06.1.3</b> Students represent the number line using integers.</p>	<p><b>6.NS.5</b> (Understand that positive and negative numbers are used together to describe quantities having opposite directions or values. . . .) <b>6.NS.6</b> (Understand a rational number as a point on the number line. . . .)</p>	
<p><b>06.1.6</b> Students demonstrate an understanding of fractions and decimals by:</p> <ul style="list-style-type: none"> <li>• representing fractions as division of whole numbers;</li> </ul>	<p><b>5.NF.3</b> (Interpret a fraction as division of the numerator by the denominator)</p>	
<ul style="list-style-type: none"> <li>• converting between mixed numbers and improper fractions;</li> </ul>		
<ul style="list-style-type: none"> <li>• simplifying fractions and mixed numbers;</li> </ul>		
<ul style="list-style-type: none"> <li>• writing fractions in equivalent forms;</li> </ul>	<p><b>4.NF.1</b> (...recognize and generate equivalent fractions.)</p>	
<ul style="list-style-type: none"> <li>• using parts of a set;</li> </ul>		

<ul style="list-style-type: none"> <li>rounding decimal numbers to 10ths, 100ths, and whole numbers (units) place; and</li> </ul>	<b>5.NBT.4</b> (...round decimals to any place)	
<ul style="list-style-type: none"> <li>converting between decimals (from .01 to .99), fractions and representing percentages.</li> </ul>	<b>4.NF.6</b> (Use decimal notation for fractions) <b>6.RP.3</b> (Percent)	

Wyoming Content Standard 1. Number Operations and Concepts		
Skill 3. Develop the connection between conceptual understanding and computational proficiency.		
Benchmark	Where in CCSS	Content Limits:
<p><b>06.1.2</b> Students multiply decimals (10ths &amp; 100ths) and divide whole numbers by 2-digit divisors and divide decimals by whole numbers.</p>	<p><b>5.NBT.6</b> (Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors...) <b>5.NBT.7</b> (Add, subtract, multiply, and divide decimals to hundredths...)</p>	<ul style="list-style-type: none"> <li>• Items will assess the effects of the four basic operations on whole numbers and decimals (10ths and 100ths) to solve problems.</li> <li>• Items will be limited to multiplying/dividing decimals by whole numbers.</li> <li>• Items will not include a divisor more than two digits.</li> <li>• Items will assess the addition and subtraction of decimals.</li> <li>• Items will not include positive fractions with more than two-digit numerators and denominators, and/or decimals greater than thousandths.</li> <li>• Items should not involve division by a fraction.</li> <li>• Items should not assess abstract constructs.</li> <li>• Items should be set in either a real-world or a mathematical context.</li> <li>• Items involving estimation should be limited to use of whole numbers and decimals (tenths, hundredths, and thousandths) greater than zero only.</li> <li>• Item situations should require estimation to find the solution and should not lend themselves to the calculation of an exact amount.</li> <li>• CR items may have students “Show your work or explain your answer.”</li> <li>• Graphics should be used in some of these items, as appropriate</li> </ul>
<p><b>06.1.4</b> Students explain their choice of estimation and problem solving strategies and justify results when performing number operations with fractions and decimals in problem-solving situations.</p>	<p><b>5.NBT.7</b> (. . . relate the strategy to a written method and explain the reasoning used.) <b>Core Practice #6</b></p>	

**Wyoming Content Standard 2. Geometry**

**Skill 1. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.**

<b>Benchmark</b>	<b>Where in CCSS</b>	<b>Content Limits:</b>
<p><b>06.2.1</b> Students classify, describe, compare, and draw representations of 1- and 2-dimensional objects and angles.</p>	<p><b>3.G.1</b> (categorize into classes based on attributes) <b>4.G.1</b> (Points, lines, line segments, rays, angles) <b>4.G.2</b> (parallel lines, angles) <b>5. G.2</b> (Graph ordered pairs in the first quadrant) <b>5.G.3</b> (Categories and subcategories) <b>5.G.4</b> (Use hierarchy of properties)</p>	<ul style="list-style-type: none"><li>• Items will assess identifying basic properties of lines (parallel, perpendicular, and intersecting) and various types of angles (acute, right, and obtuse).</li><li>• Objects or points on the coordinate grid should be placed on the points of intersection of the grid lines.</li><li>• Items may assess understanding and application of perpendicularity and parallelism.</li><li>• Items should utilize only a single figure, with no comparisons to other figures or transformations.</li><li>• Items should assess only geometric concepts of two-dimensional figures.</li><li>• Items may use coordinate planes.</li><li>• Items should be set in either a real-world or mathematical context.</li><li>• CR items may have students “Show your work or explain your answer.”</li><li>• Graphics should be used in most of these items, as appropriate.</li></ul>

**Wyoming Content Standard 2. Geometry**

**Skill 2. Analyze characteristics and properties of two- and three-dimensional geometric shapes.**

<b>Benchmark</b>	<b>Where in CCSS</b>	<b>Content Limits:</b>
<p><b>06.2.1</b> Students classify, describe, compare, and draw representations of 1- and 2-dimensional objects and angles</p>	<p><b>3.G.1</b> (categorize into classes based on attributes) <b>4.G.1</b> (Points, lines, line segments, rays, angles) <b>4.G.2</b> (Parallel lines, angles) <b>4.G.3</b> (Lines of Symmetry) <b>5. G.2</b> (Graph ordered pairs in the first quadrant) <b>5.G.3</b> (Categories and subcategories) <b>5.G.4</b> (Use hierarchy of properties) <b>6.G.4.</b> Represent three-dimensional figures using nets made up of rectangles and triangles</p>	<ul style="list-style-type: none"><li>• Items will assess identifying basic properties and attributes of circles and polygons such as triangles, quadrilaterals, parallelograms, and, trapezoids, and regular polygons such as pentagons and hexagons.</li><li>• Items may assess properties of specific types of triangles including scalene, isosceles and equilateral.</li><li>• Items using three-dimensional figures will use various types of drawings and perspectives (e.g., flat patterns/nets, isometric drawings).</li><li>• Items may use coordinate planes.</li><li>• Items should be set in either a real-world or mathematical context.</li><li>• CR items may have students “Show your work or explain your answer.”</li><li>• Graphics should be used in most of these items, as appropriate.</li></ul>

**Wyoming Content Standard 2. Geometry**

**Skill 3. Apply transformations and use symmetry to analyze mathematical situations.**

Benchmark	Where in CCSS	Content Limits:
<p><b>06.2.2</b> Students identify and classify congruent objects by properties appropriate to grade level.</p>	<p><b>6.NS.8.</b> (... graphing points in all four quadrants of the coordinate plane)  <b>8.G.2</b> (Understand a two-dimensional figure is congruent to ...)  <b>8.G.3.</b> (Describe the effect of ...reflections on two-dimensional figures).</p>	<ul style="list-style-type: none"> <li>• Items may assess properties and relationships pertaining to regular two-dimensional shapes, and the concepts of symmetry, reflections, and congruency.</li> <li>• Items may assess understanding and application of symmetry, and congruency.</li> <li>• Items should assess only geometric concepts of two-dimensional figures.</li> <li>• Items may present a coordinate plane to locate and/or describe objects.</li> <li>• Items may be set in either a real-world or mathematical context.</li> <li>• CR items may have students “Show your work or explain your answer.”</li> <li>• Graphics should be used in most of these items, as appropriate.</li> </ul>
<p><b>06.2.3</b> Students communicate the reasoning used in identifying geometric relationships in problem-solving situations appropriate to grade level.</p>	<p><b>4.G.3</b> (Recognize a line of symmetry for a two-dimensional figure..)  <b>5.G.3</b> (Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories...)  <b>5.G.4</b> (Classify two-dimensional figures in a hierarchy based on properties.)  <b>Core Practice #6</b></p>	

Wyoming Content Standard 3. Measurement		
Skill 1. Understand measurable attributes of objects and the units, systems, and processes of measurement.		
Benchmark	Where in CCSS	Content Limits:
<p><b>06.3.1</b> Students apply estimation and measurement of length to content problems and express the results in metric units (centimeters and meters).</p>	<p><b>2.MD.1</b> (Measure length using appropriate tools) <b>2.MD.3</b> (Estimate lengths with inches, feet, centimeters and meters) <b>7.G.1</b> Solve problems involving scale drawings. . .</p>	<ul style="list-style-type: none"> <li>• Items involving length should involve the metric system of measurement.</li> <li>• Items involving converting units of length should use the metric system</li> <li>• Items involving converting weight and capacity should use U.S. Customary units.</li> <li>• Items involving weight and capacity should use metric units.</li> <li>• Items may require students to solve real-world problems, including distance, using a scale drawing.</li> <li>• Measurements may be in either metric or customary units.</li> <li>• All conversions of units must be within the same system of measurement (metric or customary).</li> <li>• Items may involve up to three-unit conversions.</li> <li>• Items should involve interpreting and applying various scales, including those based on models and maps.</li> <li>• Scales must use only whole number increments and measures</li> <li>• Items should be set in a real-world context.</li> <li>• CR items may have students “Show your work or explain your answer.”</li> <li>• Graphics should be used in most of these items, as appropriate.</li> </ul>
<p><b>06.3.2</b> Students apply estimation and measurement of weight to content problems and express the results in U.S. customary units (ounces, pounds, and tons).</p>	<p><b>4.MD.1</b> (Know relative sizes of measurement units within one system of units... Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit.)</p>	
<p><b>06.3.3</b> Students apply estimation and measurement of capacity to content problems and express the results in U.S. customary units (teaspoons, tablespoons, cups, pints, quarts, gallons).</p>	<p><b>4.MD.1</b> (Know relative sizes of measurement units within one system of units... Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit.)</p>	
<p><b>06.3.4</b> Students demonstrate relationships within the U.S. customary units for weight and capacity and within the metric system (centimeters to meters) in problem-solving situations.</p>	<p><b>5.MD.1</b> (Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.)</p>	



**Wyoming Content Standard 3. Measurement**

**Skill 2. Apply appropriate techniques, tools, and formulas to determine perimeter, area or volume.**

<b>Benchmark</b>	<b>Where in CCSS</b>	<b>Content Limits:</b>
<p><b>06.3.5</b> Students determine the area and perimeter of regular polygons and the area of parallelograms, with and without models.</p>	<p><b>3.MD.8</b> (Solve real world and mathematical problems involving perimeters of polygons...) <b>6.G.1</b> (Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; . . .) <b>7.G.1</b> (Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing)</p>	<ul style="list-style-type: none"><li>• Items involving area should be limited to triangles, rectangles, and parallelograms.</li><li>• The number of two-dimensional figures assessed in an item cannot exceed two.</li><li>• Items should use numbers that are easy to compute with so that meaning rather than computation is the major focus.</li><li>• Items may assess the relationship between the area or perimeter of an original figure and that of a newly created figure, or how perimeter or area is affected by changes in the dimensions of the figure.</li><li>• The changes in dimensions of a figure that are increases should use scale factors that are whole numbers.</li><li>• The changes in dimensions of a figure that are decreases should use scale factors that are common-unit fractions with denominators of 2, 3, or 4.</li><li>• Items may present two- or three-dimensional figures.</li><li>• Graphics should be used in most of these items, as appropriate.</li><li>• Items requiring three-dimensional graphics must be realistic and must include verbal descriptions.</li><li>• CR items may have students “Show your work or explain your answer.”</li><li>• Items should be set in either a real-world or mathematical context</li></ul>

Wyoming Content Standard 4. Algebra		
Skill 1. Understand patterns, relations, and functions.		
Benchmark	Where in CCSS	Content Limits:
<p><b>06.4.1</b> Students recognize, describe, extend, create, and generalize patterns, such as numeric sequences, by using manipulatives, numbers, graphic representations, including charts and graphs.</p>	<p><b>4.OA.5</b> (Generate and analyze number and shape patterns) <b>6.EE.9</b> (. . . Analyze the relationship between the dependent and independent variables using graphs and tables. . .)</p>	<ul style="list-style-type: none"> <li>• Items will assess numerical and graphic patterns.</li> <li>• Items may use pictures and graphics to present one-step linear equations.</li> <li>• Items should not use more than two variables or include more than one operation.</li> <li>• Items will use words, tables, symbols, variables, and graphs expressing equations or patterns.</li> <li>• Items are limited to non-negative values.</li> <li>• Operations in patterns such as function tables may include the effects of the four basic operations on whole numbers to solve problems</li> <li>• Items may include graphic representations of a pattern, sequence, relationship, or function.</li> <li>• Items may be set in either a real-world or mathematical context.</li> <li>• CR items may have students “Show your work or explain your answer.”</li> <li>• Graphics should be used in most of these items, as appropriate.</li> </ul>
<p><b>06.4.2</b> Students apply their knowledge of patterns to describe a constant rate of change when solving problems.</p>	<p><b>6.RP.3</b> (Use ratio and rate reasoning to solve real-world and mathematical problems . . .)</p>	

Wyoming Content Standard 4. Algebra		
Skill 2. Use mathematical models to represent and understand quantitative relationships.		
Benchmark	Where in CCSS	Content Limits:
<p><b>06.4.3</b> Students represent the idea of a variable as an unknown quantity, a letter, or a symbol within any whole number operation.</p>	<p><b>6.EE.6</b> (Use variables to represent numbers and write expressions . . .) <b>5.G.2</b> (Represent real world and mathematical problems by graphing points in the first quadrant...)</p>	<ul style="list-style-type: none"> <li>• Items may include only one variable limited to whole numbers.</li> <li>• Problem situations involving multiplication should represent the operation as <math>5 \cdot n</math> or <math>5n</math> when practical.</li> <li>• Problem situations involving division should represent the operation using the symbol "<math>\div</math>" or "/" (e.g., <math>5 \div n</math> or <math>5/n</math>).</li> <li>• Items involving graphing functions should be from the first quadrant and limited to plotting points with whole number coordinates.</li> <li>• Items should rely primarily on translating among written descriptions, expressions, and graphic representations.</li> <li>• Items may be assessed in either a real-world (including money) or mathematical context.</li> <li>• CR items may have students "Show your work or explain your answer."</li> <li>• Graphics should be used in most of these items, as appropriate</li> </ul>

**Wyoming Content Standard 5. Data Analysis and Probability**

**Skill 1. Collect, organize, and display relevant data to answer questions and use appropriate statistical methods to analyze the data.**

<b>Benchmark</b>	<b>Where in CCSS</b>	<b>Content Limits:</b>
<p><b>06.5.1</b> Students systematically collect, organize, and describe/represent numeric data using <b>line graphs</b>.</p>	<p><b>3.MD.3</b> (Draw a scaled picture graph and a scaled bar graph...) <b>6.SP.1—6.SP.5</b> (Recognize, use, and summarize statistical data ...)</p>	<ul style="list-style-type: none"><li>• Items may include <b>pictographs</b>, charts, <b>stem-and-leaf plots</b>, <b>bar graphs</b> and <b>single-line graphs</b>, and <b>Venn diagrams</b>.</li><li>• Histograms will not be assessed.</li><li>• The data displayed (i.e. bar and <b>line graphs</b> or charts) should represent 8 or fewer categories.</li><li>• Items will assess finding the range, mean or <b>mode</b> of a set of data presented in a chart, list, table, graph, or plot (<b>e.g., stem-and-leaf plot or line plot</b>).</li><li>• Items that assess understanding of these concepts may ask students to draw conclusions from an analysis of range and/or central tendency measures.</li><li>• No more than 10 pieces of data should be used for calculations of the mean and <b>mode</b>.</li><li>• No more than 10 items should be used in data sets.</li><li>• Data contained in these items need not be ordered.</li><li>• Items will assess:<ul style="list-style-type: none"><li>○ <b>interpreting and comparing information from bar graphs, single-line graphs, stem-and-leaf plots, or Venn diagrams;</b></li><li>○ <b>recognizing appropriate displays for different kinds of data;</b></li><li>○ <b>using and recognizing appropriate scale increments;</b></li><li>○ <b>choosing reasonable titles, labels, scales, and intervals for data on pictographs and bar or line graphs;</b></li><li>○ generating questions, collecting responses, and displaying data on graphs; and</li><li>○ analyzing and explaining in writing the implications of graphed data.</li></ul></li><li>• CR items may have students “Show your work or explain your answer.”</li><li>• Graphics should be used in most of these items, as appropriate.</li><li>• Items should be set in a real-world context.</li></ul>

**Wyoming Content Standard 5. Data Analysis and Probability**

**Skill 2. Develop and evaluate inferences and predictions that are based on data.**

<b>Benchmark</b>	<b>Where in CCSS</b>	<b>Content Limits:</b>
<p><b>06.5.2</b> Students, given a scenario, recognize and communicate the likelihood of events using concepts from probability (i.e., impossible, equally likely, certain) appropriate to grade level.</p>	<p><b>7.SP.5</b> (Understand probability expresses the likelihood of an event occurring and is expressed as a number between 0 and 1) <b>7.SP.6</b> (Predict relative frequency of various probabilities) <b>7.SP.7</b> (Develop a probability model and use it to find probabilities of events) <b>7.SP.8</b> (Find probabilities of compound events)</p>	<ul style="list-style-type: none"><li>• Items may include probabilities for independent and dependent events.</li><li>• In items involving the determination of all possible outcomes, the number of outcomes should not exceed 24.</li><li>• Mathematical expectations of probabilities will be assessed using simple empirical data or theoretical probabilities.</li><li>• Most items developed for this context should assess simple events.</li><li>• Probabilities should be based on whole numbers.</li><li>• Items will assess the likelihood or probability of an outcome occurring.</li><li>• Probabilities may be expressed as certain, most likely, equally likely, least likely, and impossible.</li><li>• Items should be set in a real-world context.</li><li>• Students may be presented with word problems and/or tables.</li><li>• CR items may have students "Show your work or explain your answer."</li><li>• Graphics should be used in most of these items, as appropriate.</li></ul>