

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p><b>Standard 2.0 Knowledge of Geometry</b></p> <p>A1 Analyze properties of plane geometric figures Grades 3 &amp; 5</p> <ul style="list-style-type: none"> <li>Identify polygons within a composite figure</li> </ul> <p>Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>Identify and describe relationships of lines and line segments</li> </ul> <p>Grades 3 – 6</p> <ul style="list-style-type: none"> <li>Identify, describe, and label points, lines, rays, vertices, angles, and planes using correct symbolic notation</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>Identify and describe the angles formed by intersecting lines, line segments, and rays including vertical, adjacent, complementary, and supplementary angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>Identify and describe the relationships between angles formed when parallel lines are cut by a transversal including alternate interior, alternate exterior, and corresponding angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>Identify and describe the relationship among the parts of a right triangle</li> </ul> <p>A2 Analyze geometric relationships</p> <p>Grade 4</p> <ul style="list-style-type: none"> <li>Compare and classify angles in geometric figures and pictures</li> </ul> <p>Grade 5</p> <ul style="list-style-type: none"> <li>Compare and classify quadrilaterals by length of sides and measures of angles</li> </ul> <p>Grade 6</p> <ul style="list-style-type: none"> <li>Compare and classify triangles by sides and angle measures</li> <li>Identify and compare the relationship between parts of a circle</li> </ul> <p>Grades 6 &amp; 7</p> <ul style="list-style-type: none"> <li>Determine a missing angle measure using the sum of the interior angles of a polygon</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>Determine the measure of angles formed by intersecting lines, line segments, and rays</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>Determine the measure of angles formed by parallel lines cut by a transversal</li> </ul> <p>B1 Analyze the properties of solid geometric figures Grades 3 – 5</p> <ul style="list-style-type: none"> <li>Identify and describe solid geometric figures using the number of edges, faces, vertices, or shape of base</li> </ul>	<p><b>2.1 The student will represent and analyze two- and three-dimensional figures using tools and technology when appropriate.</b></p> <p><b>2.1.1 The student will analyze the properties of geometric figures.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <p>➤ Essential properties, relationships, and geometric models include the following:</p> <ul style="list-style-type: none"> <li>congruence and similarity</li> <li>line/segment/plane relationships (parallel, perpendicular, intersecting, bisecting, midpoint, median, altitude)</li> <li>point relationships (collinear, coplanar)</li> <li>angles and angle relationships (vertical, adjacent, complementary, supplementary, obtuse, acute, right, interior, exterior)</li> <li>angle relationships with parallel lines</li> <li>polygons (regular, non-regular, composite, equilateral, equiangular)</li> <li>geometric solids (cones, cylinders, prisms, pyramids, composite figures)</li> <li>circle/sphere (tangent, radius, diameter, chord, secant, central/inscribed angle, inscribed, circumscribed).</li> </ul> <p style="text-align: center;"><u>Skill Statement</u></p> <p>The student describes and analyzes geometric figures.</p>	<p><b>Solid Geometric Figures</b></p> <ul style="list-style-type: none"> <li>The student will analyze the properties and relationships of geometric solids with bases other than rectangles, triangles, or circles.</li> <li>The student will analyze the properties and relationships of oblique solids.</li> <li>The student will analyze the properties and relationships of truncated three-dimensional solids.</li> </ul> <p><b>Radians</b></p> <ul style="list-style-type: none"> <li>The student will explore the relationship between the measure of the central angle and the arc length in a circle.</li> <li>The student will explore the relationship between radian measure and the corresponding degree measure from 0 to <math>2\pi</math>.</li> </ul> <p><b>Perspective Drawings</b></p> <ul style="list-style-type: none"> <li>The student will analyze the properties of perspective drawings including vanishing points, lines of sight, and hidden lines.</li> </ul>

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<p style="text-align: center;"><b>Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG</b></p>	<p style="text-align: center;"><b>Geometry Voluntary State Curriculum (VSC)</b></p>	
	<p><b>CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.</b></p>	<p style="text-align: center;"><b>Additional Topics Would Include</b></p>
<p>B2 Analyze the relationship between plane geometric figures and surfaces of solid geometric figures Grades 3 – 5</p> <ul style="list-style-type: none"> <li>• Compare plane figure to surfaces of solid geometric figures</li> </ul> <p>C1 Represent plane geometric figures Objective Grades 3 – 8</p> <ul style="list-style-type: none"> <li>• Sketch or draw plane geometric figures</li> </ul> <p>D1 Analyze and apply the properties of congruent and/or similar polygons Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of congruent polygons</li> </ul> <p>Grades 5 – 8</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of similar polygons</li> </ul>	<p><b>2.1 The student will represent and analyze two- and three-dimensional figures using tools and technology when appropriate.</b></p> <p><b>2.1.1 The student will analyze the properties of geometric figures.</b></p> <p style="text-align: center;"><u><b>Assessment Limits</b></u></p> <p>➤ Essential properties, relationships, and geometric models include the following:</p> <ul style="list-style-type: none"> <li>• congruence and similarity</li> <li>• line/segment/plane relationships (parallel, perpendicular, intersecting, bisecting, midpoint, median, altitude)</li> <li>• point relationships (collinear, coplanar)</li> <li>• angles and angle relationships (vertical, adjacent, complementary, supplementary, obtuse, acute, right, interior, exterior)</li> <li>• angle relationships with parallel lines</li> <li>• polygons (regular, non-regular, composite, equilateral, equiangular)</li> <li>• geometric solids (cones, cylinders, prisms, pyramids, composite figures)</li> <li>• circle/sphere (tangent, radius, diameter, chord, secant, central/inscribed angle, inscribed, circumscribed).</li> </ul> <p style="text-align: center;"><u><b>Skill Statement</b></u></p> <p>The student describes and analyzes geometric figures.</p>	

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<p><b>Standard 1.0 Knowledge of Algebra, Patterns, or Functions</b></p> <p>B2 Identify, write, solve, and apply equations and inequalities Grades 3 – 8 and Algebra/Data Analysis CLG 1.2.1</p> <ul style="list-style-type: none"> <li>• Solve linear equations from one-step to variables on both sides</li> </ul> <p>C1 Locate points on a number line and in a coordinate graph Grades 4 – 8</p> <ul style="list-style-type: none"> <li>• Graph ordered pairs in the coordinate plane</li> </ul> <p>C2 Analyze linear relationships Grades 7 &amp; 8 and Algebra/Data Analysis CLG 1.2.1</p> <ul style="list-style-type: none"> <li>• Graph linear equations in a coordinate plane</li> <li>• Determine the slope of a line</li> </ul> <p><b>Standard 2.0 Knowledge of Geometry</b></p> <p>A1 Analyze properties of plane geometric figures Grades 3 &amp; 5</p> <ul style="list-style-type: none"> <li>• Identify polygons within a composite figure</li> </ul> <p>Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>• Identify and describe relationships of lines and line segments</li> </ul> <p>Grades 3 – 6</p> <ul style="list-style-type: none"> <li>• Identify, describe, and label points, lines, rays, vertices, angles, and planes using correct symbolic notation</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Identify and describe the angles formed by intersecting lines, line segments, and rays including vertical, adjacent, complementary, and supplementary angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationships between angles formed when parallel lines are cut by a transversal including alternate interior, alternate exterior, and corresponding angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationship among the parts of a right triangle</li> </ul> <p>A2 Analyze geometric relationships Grade 4</p> <ul style="list-style-type: none"> <li>• Compare and classify angles in geometric figures and pictures</li> </ul>	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
	<p><b>2.1 The student will represent and analyze two- and three-dimensional figures using tools and technology when appropriate.</b></p> <p><b>2.1.2 The student will identify and/or verify properties of geometric figures using the coordinate plane and concepts from algebra.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ “Verify properties” means to justify solutions using definitions and/or mathematical principles.</li> <li>➤ Properties, relationships, and geometric models include the following:               <ul style="list-style-type: none"> <li>• congruence and similarity</li> <li>• line/segment relationships (parallel, perpendicular, intersecting, bisecting, midpoint, median, altitude)</li> <li>• point relationships (collinear)</li> <li>• angles and angle relationships (obtuse, acute, right)</li> <li>• polygons (regular, non-regular, equilateral, equiangular)</li> <li>• circle (tangent, radius, diameter, chord).</li> </ul> </li> <li>➤ Items for this indicator may be set on the coordinate plane or may just have coordinates identified with no grid.</li> <li>➤ Concepts from algebra include applications of the distance, midpoint, and slope formulas.</li> </ul>	<p><b>Polar Coordinates *</b></p> <ul style="list-style-type: none"> <li>• The student will locate points on the polar coordinate system including points with rotation greater than <math>360^\circ</math>.</li> <li>• The student will explore the relationship between a point on the coordinate plane with the same point on the polar coordinate system.</li> </ul> <p><b>Three-dimensional Coordinate Plane</b></p> <ul style="list-style-type: none"> <li>• The student will represent a point in space as an ordered triple.</li> <li>• The student will use the distance and midpoint formulas for segments in three-dimensional space.</li> <li>• The student will explore relationships given a set of points in space such as collinear, coplanar, and relative placement inside or outside a figure.</li> </ul>

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<p>Grade 5</p> <ul style="list-style-type: none"> <li>• Compare and classify quadrilaterals by length of sides and measures of angles</li> </ul> <p>Grade 6</p> <ul style="list-style-type: none"> <li>• Compare and classify triangles by sides and angle measures</li> <li>• Identify and compare the relationship between parts of a circle</li> </ul> <p>Grades 6 &amp; 7</p> <ul style="list-style-type: none"> <li>• Determine a missing angle measure using the sum of the interior angles of a polygons</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by intersecting lines, line segments, and rays</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by parallel lines cut by a transversal</li> </ul> <p>C1 Represent plane geometric figures Grades 3 – 8</p> <ul style="list-style-type: none"> <li>• Sketch or draw plane geometric figures</li> </ul> <p>Grade 6</p> <ul style="list-style-type: none"> <li>• Identify, describe, or draw a polygon on a coordinate plane</li> </ul> <p>D1 Analyze and apply the properties of congruent and/or similar polygons Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of congruent polygons</li> </ul> <p>Grades 5 – 8</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of similar polygons</li> </ul> <p><b>Standard 7.0 Processes of Mathematics</b></p> <p>B1 Justify ideas or solutions with mathematical concepts or proofs</p>	<p><b>2.1 The student will represent and analyze two- and three-dimensional figures using tools and technology when appropriate.</b></p> <p><b>2.1.2 The student will identify and/or verify properties of geometric figures using the coordinate plane and concepts from algebra.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ “Verify properties” means to justify solutions using definitions and/or mathematical principles.</li> <li>➤ Properties, relationships, and geometric models include the following: <ul style="list-style-type: none"> <li>• congruence and similarity</li> <li>• line/segment relationships (parallel, perpendicular, intersecting, bisecting, midpoint, median, altitude)</li> <li>• point relationships (collinear)</li> <li>• angles and angle relationships (obtuse, acute, right)</li> <li>• polygons (regular, non-regular, equilateral, equiangular)</li> <li>• circle (tangent, radius, diameter, chord).</li> </ul> </li> <li>➤ Items for this indicator may be set on the coordinate plane or may just have coordinates identified with no grid.</li> <li>➤ Concepts from algebra include applications of the distance, midpoint, and slope formulas.</li> </ul>	

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<p><b>Standard 1.0 Knowledge of Algebra, Patterns, or Functions</b></p> <p>C1 Locate points on a number line and in a coordinate graph Grades 4 – 8</p> <ul style="list-style-type: none"> <li>• Graph ordered pairs in the coordinate plane</li> </ul> <p><b>Standard 2.0 Knowledge of Geometry</b></p> <p>A1 Analyze properties of plane geometric figures Grades 3 &amp; 5</p> <ul style="list-style-type: none"> <li>• Identify polygons within a composite figure</li> </ul> <p>Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>• Identify and describe relationships of lines and line segments</li> </ul> <p>Grades 3 – 6</p> <ul style="list-style-type: none"> <li>• Identify, describe, and label points, lines, rays, vertices, angles, and planes using correct symbolic notation</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Identify and describe the angles formed by intersecting lines, line segments, and rays including vertical, adjacent, complementary, and supplementary angles</li> </ul> <p>A2 Analyze geometric relationships</p> <p>Grade 4</p> <ul style="list-style-type: none"> <li>• Compare and classify angles in geometric figures and pictures</li> </ul> <p>Grade 5</p> <ul style="list-style-type: none"> <li>• Compare and classify quadrilaterals by length of sides and measures of angles</li> </ul> <p>Grade 6</p> <ul style="list-style-type: none"> <li>• Compare and classify triangles by sides and angle measures</li> </ul> <p>C1 Represent plane geometric figures Grades 3 – 8</p> <ul style="list-style-type: none"> <li>• Sketch or draw plane geometric figures</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Construct geometric figures using a variety of construction tools</li> </ul>	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
	<p><b>2.1 The student will represent and analyze two- and three-dimensional figures using tools and technology when appropriate.</b></p> <p><b>2.1.3 The student will use transformations to move figures, create designs, and/or demonstrate geometric properties.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ Transformations include reflections, rotations, translations, and dilations.</li> <li>➤ Items should go beyond the identification of transformations.</li> <li>➤ Essential properties and relationships include the following: congruence, similarity, and symmetry.</li> <li>➤ The student’s explanation of a transformation must include the following:               <ul style="list-style-type: none"> <li>• translation – distance and direction</li> <li>• reflection – line of reflection</li> <li>• rotation – center of rotation, angle measure, direction (clockwise or counterclockwise)</li> <li>• dilation – center and scale factor.</li> </ul> </li> <li>➤ Paper folding and the use of Miras™ and mirrors are appropriate methods for performing transformations, and their use must be referenced.</li> </ul> <p style="text-align: center;"><u>Skill Statement</u></p> <p>Given one or more transformations, the student sketches the result of the transformation(s) and/or explains the geometric effect of the transformation(s) on the figure.</p>	<p><b>Matrices</b></p> <ul style="list-style-type: none"> <li>• The student will write and plot ordered pairs from matrix notation.</li> <li>• The student will find transformation images, including rotations, reflections, dilations and translations, using matrices.</li> </ul> <p><b>Vectors</b></p> <ul style="list-style-type: none"> <li>• The student will identify the distance and direction of a given vector.</li> <li>• The student will find resultant vectors.</li> <li>• The student will describe translations using vectors.</li> <li>• The student will find translation images using vector sums.</li> </ul>

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<p>D1 Analyze and apply the properties of congruence and/or similar polygons Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of congruent polygons</li> </ul> <p>Grades 5 – 8</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of similar polygons</li> </ul> <p>E1 Analyze a transformation Grades 3 – 5</p> <ul style="list-style-type: none"> <li>• Identify and describe the results of translations, reflections, and rotations</li> </ul> <p>Grades 6 – 8</p> <ul style="list-style-type: none"> <li>• Identify, describe, and plot transformations on a coordinate plane</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Identify and describe transformations that result in rotational and reflectional symmetry</li> </ul> <p><b>Standard 3.0 Knowledge of Measurement</b></p> <p>B1 Measure in customary and metric units Grades 3 – 6</p> <ul style="list-style-type: none"> <li>• Measure length in customary and metric unit</li> </ul> <p>B2 Measure angles in polygons Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>• Measure angles in a polygon</li> </ul> <p><b>Standard 7.0 Processes of Mathematics</b></p> <p>B1 Justify ideas or solutions with mathematical concepts or proofs</p>	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
	<p><b>2.1 The student will represent and analyze two- and three-dimensional figures using tools and technology when appropriate.</b></p> <p><b>2.1.3 The student will use transformations to move figures, create designs, and/or demonstrate geometric properties.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ Transformations include reflections, rotations, translations, and dilations.</li> <li>➤ Items should go beyond the identification of transformations.</li> <li>➤ Essential properties and relationships include the following: congruence, similarity, and symmetry.</li> <li>➤ The student’s explanation of a transformation must include the following:               <ul style="list-style-type: none"> <li>• translation – distance and direction</li> <li>• reflection – line of reflection</li> <li>• rotation – center of rotation, angle measure, direction (clockwise or counterclockwise)</li> <li>• dilation – center and scale factor.</li> </ul> </li> <li>➤ Paper folding and the use of Miras™ and mirrors are appropriate methods for performing transformations, and their use must be referenced.</li> </ul> <p style="text-align: center;"><u>Skill Statement</u></p> <p>Given one or more transformations, the student sketches the result of the transformation(s) and/or explains the geometric effect of the transformation(s) on the figure.</p>	

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<p><b>Standard 2.0 Knowledge of Geometry</b></p> <p>A1 Analyze properties of plane geometric figures Grades 3 &amp; 5</p> <ul style="list-style-type: none"> <li>• Identify polygons within a composite figure</li> </ul> <p>Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>• Identify and describe relationships of lines and line segments</li> </ul> <p>Grades 3 – 6</p> <ul style="list-style-type: none"> <li>• Identify, describe, and label points, lines, rays, vertices, angles, and planes using correct symbolic notation</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Identify and describe the angles formed by intersecting lines, line segments, and rays including vertical, adjacent, complementary, and supplementary angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationships between angles formed when parallel lines are cut by a transversal including alternate interior, alternate exterior, and corresponding angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationship among the parts of a right triangle</li> </ul> <p>A2 Analyze geometric relationships</p> <p>Grade 4</p> <ul style="list-style-type: none"> <li>• Compare and classify angles in geometric figures and pictures</li> </ul> <p>Grade 5</p> <ul style="list-style-type: none"> <li>• Compare and classify quadrilaterals by length of sides and measures of angles</li> </ul> <p>Grade 6</p> <ul style="list-style-type: none"> <li>• Compare and classify triangles by sides and angle measures</li> <li>• Identify and compare the relationship between parts of a circle</li> </ul> <p>Grades 6 &amp; 7</p> <ul style="list-style-type: none"> <li>• Determine a missing angle measure using the sum of the interior angles of a polygons</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by intersecting lines, line segments, and rays</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by parallel lines cut by a transversal</li> </ul>	<p><b>2.1 The student will represent and analyze two- and three-dimensional figures using tools and technology when appropriate.</b></p> <p><b>2.1.4 The student will construct and/or draw and/or validate properties of geometric figures using appropriate tools and technology.</b></p> <p style="text-align: center;"><u><b>Assessment Limits</b></u></p> <ul style="list-style-type: none"> <li>➤ “Validate properties” in this indicator, means justifying solutions using definitions, mathematical principles and/or measurement.</li> <li>➤ Students may use a compass, straightedge, patty paper, a Mira™, and/or a mirror as <u>construction tools</u>. Using a ruler or protractor <u>cannot</u> be part of the strategy.</li> <li>➤ Students may use a compass, ruler, patty paper, a Mira™, a mirror and/or a protractor as <u>drawing tools</u>.</li> <li>➤ It is acceptable to do a construction when the item asks for a drawing.</li> <li>➤ Paper folding and the use of Miras™ and mirrors are appropriate methods for representing, constructing, and/or analyzing figures, and their use must be referenced.</li> <li>➤ Constructions and drawings are limited to the two-dimensional relationships listed in 2.1.1.</li> </ul> <p style="text-align: center;"><u><b>Skill Statement</b></u></p> <p>The student draws and/or constructs geometric figures and/or justifies the solution.</p>	<p><b>Perspective Drawings</b></p> <ul style="list-style-type: none"> <li>• The student will use the properties of perspective drawings to draw two-dimensional or three-dimensional shapes using vanishing points, lines of sight, and hidden lines.</li> </ul>

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Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p>B1 Analyze the properties of solid geometric figures Grades 3 – 5</p> <ul style="list-style-type: none"> <li>• Identify and describe solid geometric figures using the number of edges, faces, vertices, or shape of base</li> </ul> <p>B2 Analyze the relationship between plane geometric figures and surfaces of solid geometric figures Grades 3 – 5</p> <ul style="list-style-type: none"> <li>• Compare plane figures to surfaces of solid geometric figures</li> </ul> <p>C1 Represent plane geometric figures Grades 3 – 8</p> <ul style="list-style-type: none"> <li>• Sketch or draw plane geometric figures</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Construct geometric figures using a variety of construction tools</li> </ul> <p>D1 Analyze and apply the properties of congruent and/or similar polygons Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of congruent polygons</li> </ul> <p>Grades 5 – 8</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of similar polygons</li> </ul> <p><b>Standard 3.0 Knowledge of Measurement</b></p> <p>B1 Measure in customary and metric units Grades 3 – 6</p> <ul style="list-style-type: none"> <li>• Measure length in customary and metric units</li> </ul> <p>B2 Measure angles in polygons Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>• Measure angles in a polygon</li> </ul> <p><b>Standard 7.0 Processes of Mathematics</b></p> <p>B1 Justify ideas or solutions with mathematical concepts or proofs</p>	<p><b>2.1 The student will represent and analyze two- and three-dimensional figures using tools and technology when appropriate.</b></p> <p><b>2.1.4 The student will construct and/or draw and/or validate properties of geometric figures using appropriate tools and technology.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ “Validate properties” in this indicator, means justifying solutions using definitions, mathematical principles and/or measurement.</li> <li>➤ Students may use a compass, straightedge, patty paper, a Mira™, and/or a mirror as <u>construction tools</u>. Using a ruler or protractor <u>cannot</u> be part of the strategy.</li> <li>➤ Students may use a compass, ruler, patty paper, a Mira™, a mirror and/or a protractor as <u>drawing tools</u>.</li> <li>➤ It is acceptable to do a construction when the item asks for a drawing.</li> <li>➤ Paper folding and the use of Miras™ and mirrors are appropriate methods for representing, constructing, and/or analyzing figures, and their use must be referenced.</li> <li>➤ Constructions and drawings are limited to the two-dimensional relationships listed in 2.1.1.</li> </ul> <p style="text-align: center;"><u>Skill Statement</u></p> <p>The student draws and/or constructs geometric figures and/or justifies the solution.</p>	

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p><b>Standard 1.0 Knowledge of Algebra, Patterns and Functions.</b></p> <p>B2 Identify, write, solve, and apply equations and inequalities Grades 3 – 8 and Algebra/Data Analysis CLG 1.2.1</p> <ul style="list-style-type: none"> <li>• Solve linear equations from one-step to variables on both sides</li> </ul> <p><b>Standard 2.0 Knowledge of Geometry</b></p> <p>A1 Analyze properties of plane geometric figures Grades 3 &amp; 5</p> <ul style="list-style-type: none"> <li>• Identify polygons within a composite figure</li> </ul> <p>Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>• Identify and describe relationships of lines and line segments</li> </ul> <p>Grades 3 – 6</p> <ul style="list-style-type: none"> <li>• Identify, describe, and label points, lines, rays, vertices, angles, and planes using correct symbolic notation</li> </ul> <p>Grades 7</p> <ul style="list-style-type: none"> <li>• Identify and describe the angles formed by intersecting lines, line segments, and rays including vertical, adjacent, complementary, and supplementary angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationships between angles formed when parallel lines are cut by a transversal including alternate interior, alternate exterior, and corresponding angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationship among the parts of a right triangle</li> </ul> <p>A2 Analyze geometric relationships</p> <p>Grade 4</p> <ul style="list-style-type: none"> <li>• Compare and classify angles in geometric figures and pictures</li> </ul> <p>Grade 5</p> <ul style="list-style-type: none"> <li>• Compare and classify quadrilaterals by length of sides and measures of angles</li> </ul> <p>Grade 6</p> <ul style="list-style-type: none"> <li>• Compare and classify triangles by sides and angle measures</li> <li>• Identify and compare the relationship between parts of a circle</li> </ul> <p>Grades 6 &amp; 7</p> <ul style="list-style-type: none"> <li>• Determine a missing angle measure using the sum of the interior angles of polygons</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by intersecting lines, line segments, and rays</li> </ul>	<p><b>2.2 The student will apply geometric properties and relationships to solve problems using tools and technology when appropriate.</b></p> <p><b>2.2.1 The student will identify and/or verify congruent and similar figures and/or apply equality or proportionality of their corresponding parts.</b></p> <p style="text-align: center;"><u><b>Assessment Limits</b></u></p> <ul style="list-style-type: none"> <li>➤ Students will demonstrate geometric reasoning and justify conclusions. Although the focus is on geometric theory, answers to some items may include a numeric answer.</li> <li>➤ Corresponding measurements include length, angle measure, perimeter, circumference, area, volume, surface area and lateral area.</li> </ul> <p style="text-align: center;"><u><b>Skill Statement</b></u></p> <ul style="list-style-type: none"> <li>➤ The student recognizes shapes as congruent or similar, calculates corresponding measurements, and/or justifies conclusions.</li> <li>➤ The student uses congruency and similarity statements to identify corresponding parts of figures.</li> </ul>	

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p>Grade 8</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by parallel lines cut by a transversal</li> </ul> <p>D1 Analyze and apply the properties of congruent and/or similar polygons</p> <p>Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of congruent polygons</li> </ul> <p>Grades 5 – 8</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of similar polygons</li> </ul> <p><b>Standard 3.0 Knowledge of measurement</b></p> <p>C1 Estimate and apply measurement formulas</p> <p>Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Estimate and determine area and perimeter of geometric figures</li> </ul> <p>Grade 6</p> <ul style="list-style-type: none"> <li>• Determine the missing dimension of rectangles</li> </ul> <p>Grades 6 – 8</p> <ul style="list-style-type: none"> <li>• Estimate and determine the surface area and volume of geometric solids including prisms, cylinders, cones, pyramids, and spheres</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Estimate and determine the area and circumference of a circle</li> </ul> <p>C2 Analyze measurement relationships</p> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Determine the missing dimension for a figure using a scale</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Use proportional reasoning to solve measurement problems</li> </ul>	<p><b>2.2 The student will apply geometric properties and relationships to solve problems using tools and technology when appropriate.</b></p> <p><b>2.2.1 The student will identify and/or verify congruent and similar figures and/or apply equality or proportionality of their corresponding parts.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ Students will demonstrate geometric reasoning and justify conclusions. Although the focus is on geometric theory, answers to some items may include a numeric answer.</li> <li>➤ Corresponding measurements include length, angle measure, perimeter, circumference, area, volume, surface area and lateral area.</li> </ul> <p style="text-align: center;"><u>Skill Statement</u></p> <ul style="list-style-type: none"> <li>➤ The student recognizes shapes as congruent or similar, calculates corresponding measurements, and/or justifies conclusions.</li> <li>➤ The student uses congruency and similarity statements to identify corresponding parts of figures.</li> </ul>	

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
<p><b>Standard 6.0 Knowledge of Number Relationships or Computation</b></p> <p>C3 Analyze ratios, proportions, or percents Grades 6 – 8</p> <ul style="list-style-type: none"> <li>• Determine or use ratios, unit rates, and percents, in the context of the problem</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Solve problems using proportional reasoning</li> </ul> <p><b>Standard 7.0 Processes of Mathematics</b></p> <p><b>B1 Justify ideas or solutions with mathematical concepts or proofs</b></p>	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
	<p><b>2.2 The student will apply geometric properties and relationships to solve problems using tools and technology when appropriate.</b></p> <p><b>2.2.1 The student will identify and/or verify congruent and similar figures and/or apply equality or proportionality of their corresponding parts.</b></p> <p style="text-align: center;"><u><b>Assessment Limits</b></u></p> <ul style="list-style-type: none"> <li>➤ Students will demonstrate geometric reasoning and justify conclusions. Although the focus is on geometric theory, answers to some items may include a numeric answer.</li> <li>➤ Corresponding measurements include length, angle measure, perimeter, circumference, area, volume, surface area and lateral area.</li> </ul> <p style="text-align: center;"><u><b>Skill Statement</b></u></p> <ul style="list-style-type: none"> <li>➤ The student recognizes shapes as congruent or similar, calculates corresponding measurements, and/or justifies conclusions.</li> <li>➤ The student uses congruency and similarity statements to identify corresponding parts of figures.</li> </ul>	

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p><b>Standard 1.0 Knowledge of Algebra, Patterns and Functions</b></p> <p>B2 Identify, write, solve, and apply equations and inequalities Grades 3 – 8 and Algebra/Data Analysis CLG 1.2.1</p> <ul style="list-style-type: none"> <li>• Solve linear equations from one-step to variables on both sides</li> </ul> <p><b>Standard 2.0 Knowledge of Geometry</b></p> <p>A2 Analyze geometric relationships</p> <p>Grade 4</p> <ul style="list-style-type: none"> <li>• Compare and classify angles in geometric figures and pictures</li> </ul> <p>Grade 5</p> <ul style="list-style-type: none"> <li>• Compare and classify quadrilaterals by length of sides and measures of angles</li> </ul> <p>Grade 6</p> <ul style="list-style-type: none"> <li>• Compare and classify triangles by sides and angle measures</li> <li>• Identify and compare the relationship between parts of a circle</li> </ul> <p>Grades 6 &amp; 7</p> <ul style="list-style-type: none"> <li>• Determine a missing angle measure using the sum of the interior angles of a polygon</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by intersecting lines, line segments, and rays</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by parallel lines cut by a transversal</li> <li>• Use the Pythagorean Theorem to solve problems</li> </ul> <p><b>Standard 6.0 Knowledge of Number Relationships or Computation</b></p> <p>C1 Analyze number relationships and compute Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Calculate powers of integers and square roots of perfect square whole numbers</li> </ul>	<p><b>2.2 The student will apply geometric properties and relationships to solve problems using tools and technology.</b></p> <p><b>2.2.2 The student will solve problems using two-dimensional figures and/or right-triangle trigonometry.</b></p> <p style="text-align: center;"><u><b>Assessment Limits</b></u></p> <ul style="list-style-type: none"> <li>➤ Students will demonstrate geometric reasoning and justify conclusions.</li> <li>➤ Trigonometric functions may be used to find sides or angles.</li> <li>➤ Trigonometric functions will be limited to sine, cosine, and tangent and their inverses.</li> </ul> <p style="text-align: center;"><u><b>Skill Statement</b></u></p> <p>The student solves a problem involving missing parts of two-dimensional figures, which may require the use of right-triangle trigonometry, the Pythagorean theorem, or special right triangle relationships.</p>	<p><b>Trigonometry</b></p> <ul style="list-style-type: none"> <li>• The student will apply the Law of Sines and the Law of Cosines to solve problems involving oblique triangles.</li> <li>• The student will solve problems using the secant, cosecant, and cotangent functions.</li> </ul> <p><b>Similarity/Right Triangles</b></p> <ul style="list-style-type: none"> <li>• The student will use geometric mean and relationships between parts of a right triangle and the altitude drawn to the hypotenuse to find missing parts of right triangles.</li> </ul>

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p><b>Standard 2.0 Knowledge of Geometry</b></p> <p>A1 Analyze properties of plane geometric figures Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>• Identify and describe relationships of lines and line segments</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Identify and describe the angles formed by intersecting lines, line segments, and rays including vertical, adjacent, complementary, and supplementary angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationships between angles formed when parallel lines are cut by a transversal including alternate interior, alternate exterior, and corresponding angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationship among the parts of a right triangle</li> </ul> <p>A2 Analyze geometric relationships</p> <p>Grade 4</p> <ul style="list-style-type: none"> <li>• Compare and classify angles in geometric figures and pictures</li> </ul> <p>Grade 5</p> <ul style="list-style-type: none"> <li>• Compare and classify quadrilaterals by length of sides and measures of angles</li> </ul> <p>Grade 6</p> <ul style="list-style-type: none"> <li>• Compare and classify triangles by sides and angle measures</li> <li>• Identify and compare the relationship between parts of a circle</li> </ul> <p>Grades 6 &amp; 7</p> <ul style="list-style-type: none"> <li>• Determine a missing angle measure using the sum of the interior angles of a polygon</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by intersecting lines, line segments, and rays</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by parallel lines cut by a transversal</li> <li>• Use the Pythagorean Theorem to solve problems</li> </ul> <p>B1 Analyze the properties of solid geometric figures Grades 3 – 5</p> <ul style="list-style-type: none"> <li>• Identify and describe solid geometric figures using the number of edges, faces, vertices, or shape of base</li> </ul>	<p><b>2.2 The student will apply geometric properties and relationships to solve problems using tools and technology when appropriate.</b></p> <p><b>2.2.3 The student will use inductive or deductive reasoning.</b></p> <p style="text-align: center;"><u><b>Assessment Limits</b></u></p> <ul style="list-style-type: none"> <li>➤ Students are expected to demonstrate their geometric reasoning and justify conclusions. Although the focus is on geometric theory, answers to some questions may include a numeric answer.</li> <li>➤ Items may include geometric applications, patterns, and logic, including syllogisms.</li> <li>➤ Narrative, flow chart, or two-column proof may be used as a valid argument.</li> </ul> <p style="text-align: center;"><u><b>Skill Statement</b></u></p> <p>Given a situation, the student arrives at or justifies a conclusion using inductive or deductive reasoning.</p>	<p><b>Algebraic Proofs</b></p> <ul style="list-style-type: none"> <li>• The student will write algebraic proofs.</li> </ul>

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p>D1 Analyze and apply the properties of congruent and/or similar polygons Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of congruent polygons</li> </ul> <p>Grades 5 – 8</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of similar polygons</li> </ul> <p><b>Standard 7.0 Processes of Mathematics</b></p> <p>B1 Justify ideas or solutions with mathematical concepts or proofs</p>	<p><b>2.2 The student will apply geometric properties and relationships to solve problems using tools and technology when appropriate.</b></p> <p><b>2.2.3 The student will use inductive or deductive reasoning.</b></p> <p style="text-align: center;"><u><b>Assessment Limits</b></u></p> <ul style="list-style-type: none"> <li>➤ Students are expected to demonstrate their geometric reasoning and justify conclusions. Although the focus is on geometric theory, answers to some questions may include a numeric answer.</li> <li>➤ Items may include geometric applications, patterns, and logic, including syllogisms.</li> <li>➤ Narrative, flow chart, or two-column proof may be used as a valid argument.</li> </ul> <p style="text-align: center;"><u><b>Skill Statement</b></u></p> <p>Given a situation, the student arrives at or justifies a conclusion using inductive or deductive reasoning.</p>	

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
<p><b>Standard 1.0 Knowledge of Algebra, Patterns, or Function</b></p> <p>B2 Identify, write, solve, and apply equations and inequalities Grades 3 – 8 and Algebra/Data Analysis CLG 1.2.1</p> <ul style="list-style-type: none"> <li>• Solve linear equations from one-step to variables on both sides</li> </ul> <p>Grades 6 – 8 and Algebra/Data Analysis CLG 1.2.2</p> <ul style="list-style-type: none"> <li>• Solve linear inequalities</li> </ul> <p>Grades 6 – 8 and Algebra/Data Analysis CLG 1.2.5</p> <ul style="list-style-type: none"> <li>• Apply given formulas in a problem-solving situation</li> </ul> <p><b>Standard 2.0 Knowledge of Geometry</b></p> <p>A2 Analyze geometric relationships Grades 6 &amp; 7</p> <ul style="list-style-type: none"> <li>• Determine a missing angle measure using the sum of interior angles of a polygon</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by parallel lines cut by a transversal</li> <li>• Use the Pythagorean Theorem to solve problems</li> </ul> <p>D1 Analyze and apply the properties of congruent and/or similar polygons Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of congruent polygons</li> </ul> <p>Grades 5 – 8</p> <ul style="list-style-type: none"> <li>• Analyze and apply the properties of similar polygons</li> </ul> <p><b>Standard 3.0 Knowledge of Measurement</b></p> <p>B1 Measure in customary and metric units Grades 3 – 6</p> <ul style="list-style-type: none"> <li>• Measure length in customary and metric units</li> </ul>	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
	<p><b>2.3 The student will apply concepts of measurement using tools and technology when appropriate.</b></p> <p><b>2.3.1 The student will use algebraic and/or geometric properties to measure indirectly.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ “Measure indirectly” means to use mathematical concepts such as congruence, similarity, and ratio and proportion to calculate measurements.</li> <li>➤ Similarity and congruence will be directly stated or implied (scale drawings, enlargements.)</li> <li>➤ Items may require the student to make comparisons.</li> <li>➤ This indicator may incorporate measuring.</li> <li>➤ This indicator does not include right-triangle trigonometry.</li> </ul> <p style="text-align: center;"><u>Skill Statement</u></p> <p>The student calculates measurements indirectly by using mathematical concepts.</p>	

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p>B2 Measure angles in polygons Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>• Measure angles in polygons</li> </ul> <p>C1 Estimate and apply measurement formulas Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Estimate and determine the area and perimeter of geometric figures</li> </ul> <p>Grades 6 – 8</p> <ul style="list-style-type: none"> <li>• Estimate and determine the surface area and volume of geometric solids including prisms, cylinders, cones, pyramids, and spheres</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Estimate and determine the area and circumference of a circle</li> </ul> <p>C2 Analyze measurement relationships Grade 7</p> <ul style="list-style-type: none"> <li>• Determine a missing dimension for a figure using a scale</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Use proportional reasoning to solve measurement problems</li> </ul> <p><b>Standard 6.0 Knowledge of Number Relationships or Computation</b></p> <p>C3 Analyze ratios, proportions, or percents Grades 6 – 8</p> <ul style="list-style-type: none"> <li>• Determine or use ratios, unit rates, and percents, in the context of the problem</li> </ul>	<p><b>2.3 The student will apply concepts of measurement using tools and technology when appropriate.</b></p> <p><b>2.3.1 The student will use algebraic and/or geometric properties to measure indirectly.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ “Measure indirectly” means to use mathematical concepts such as congruence, similarity, and ratio and proportion to calculate measurements.</li> <li>➤ Similarity and congruence will be directly stated or implied (scale drawings, enlargements.)</li> <li>➤ Items may require the student to make comparisons.</li> <li>➤ This indicator may incorporate measuring.</li> <li>➤ This indicator does not include right-triangle trigonometry.</li> </ul> <p style="text-align: center;"><u>Skill Statement</u></p> <p>The student calculates measurements indirectly by using mathematical concepts.</p>	

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p><b>Standard 1.0 Knowledge of Algebra, Patterns, or Functions</b></p> <p>B2 Identify, write, solve, and apply equations and inequalities Grades 3 – 8 and Algebra/Data Analysis CLG 1.2.1</p> <ul style="list-style-type: none"> <li>• Solve linear equations from one-step to variables on both sides</li> </ul> <p>Grades 6 – 8 and Algebra/Data Analysis CLG 1.2.2</p> <ul style="list-style-type: none"> <li>• Solve linear inequalities</li> </ul> <p>Grades 6 – 8 and CLG 1.2.5</p> <ul style="list-style-type: none"> <li>• Apply given formulas in a problem-solving situation</li> </ul> <p><b>Standard 2.0 Knowledge of Geometry</b></p> <p>A1 Analyze properties of plane geometric figures Grades 3 &amp; 5</p> <ul style="list-style-type: none"> <li>• Identify polygons within a composite figure</li> </ul> <p>Grades 5 &amp; 6</p> <ul style="list-style-type: none"> <li>• Identify and describe relationships of lines and line segments</li> </ul> <p>Grades 3 – 6</p> <ul style="list-style-type: none"> <li>• Identify, describe, and label points, lines, rays, vertices, angles, and planes using correct symbolic notation</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Identify and describe the angles formed by intersecting lines, line segments, and rays including vertical, adjacent, complementary, and supplementary angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationships between angles formed when parallel lines are cut by a transversal including alternate interior, alternate exterior, and corresponding angles</li> </ul> <p>Grades 7 &amp; 8</p> <ul style="list-style-type: none"> <li>• Identify and describe the relationship among the parts of a right triangle</li> </ul> <p>A2 Analyze geometric relationships Grade 4</p> <ul style="list-style-type: none"> <li>• Compare and classify angles in geometric figures and pictures</li> </ul> <p>Grade 5</p> <ul style="list-style-type: none"> <li>• Compare and classify quadrilaterals by length of sides and measures of angles</li> </ul>	<p><b>2.3 The student will apply concepts of measurement using tools and technology when appropriate.</b></p> <p><b>2.3.2 The student will use techniques of measurement and will estimate, calculate, and/or compare perimeter, circumference, area, volume, and/or surface area of two- and three-dimensional figures and their parts.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ Two-dimensional shapes include polygons, circles, and composite figures.</li> <li>➤ Three-dimensional shapes include cubes, prisms, pyramids, cylinders, cones, spheres, and composite figures.</li> <li>➤ Formulas will be provided.</li> <li>➤ No oblique solids will be used.</li> <li>➤ Items may involve applications of geometric properties and relationships.</li> <li>➤ Students may be required to make comparisons which do not require calculations.</li> </ul> <p style="text-align: center;"><u>Skill Statement</u></p> <p>The student solves a problem involving perimeter, area, surface area, lateral area, circumference, and/or volume expressing solutions with appropriate units.</p>	<p><b>Circles</b></p> <ul style="list-style-type: none"> <li>• The student will determine the area of a sector.</li> <li>• The student will determine the length of an arc.</li> </ul> <p><b>Solid Geometric Figures</b></p> <ul style="list-style-type: none"> <li>• The student will determine properties of oblique solid geometric figures. *</li> <li>• The student will determine properties of pyramids that have non-square bases.</li> </ul>

## Voluntary State Curriculum – Geometry

Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p>Grade 6</p> <ul style="list-style-type: none"> <li>• Compare and classify triangles by sides and angle measures</li> <li>• Identify and compare the relationship between parts of a circle</li> </ul> <p>Grades 6 &amp; 7</p> <ul style="list-style-type: none"> <li>• Determine a missing angle measure using the sum of the interior angles of a polygon</li> </ul> <p>Grade 7</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by intersecting lines, line segments, and rays</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Determine the measure of angles formed by parallel lines cut by a transversal</li> </ul> <p>B1 Analyze the properties of solid geometric figures Grades 3 – 5</p> <ul style="list-style-type: none"> <li>• Identify and describe solid geometric figures using the number of edges, faces, vertices, or shape of base</li> </ul> <p>B2 Analyze the relationship between plane geometric figures and surfaces of solid geometric figures Grades 3 – 5</p> <ul style="list-style-type: none"> <li>• Compare a plane figure to surfaces of solid geometric figures</li> </ul> <p>C1 Represent plane geometric figures Grades 3 – 8</p> <ul style="list-style-type: none"> <li>• Sketch or draw plane geometric figures using a variety of tools</li> </ul> <p><b>Standard 3.0 Knowledge of Measurement</b></p> <p>C1 Estimate and apply measurement formulas Grades 3 – 7</p> <ul style="list-style-type: none"> <li>• Estimate and determine the area and perimeter of geometric figures</li> </ul> <p>Grades 6 – 8</p> <ul style="list-style-type: none"> <li>• Estimate and determine the surface area and volume of geometric solids including prisms, cylinders, cones, pyramids, and spheres</li> </ul> <p>Grade 8</p> <ul style="list-style-type: none"> <li>• Estimate and determine the area and circumference of a circle</li> </ul>	<p><b>2.3 The student will apply concepts of measurement using tools and technology when appropriate.</b></p> <p><b>2.3.2 The student will use techniques of measurement and will estimate, calculate, and/or compare perimeter, circumference, area, volume, and/or surface area of two- and three-dimensional figures and their parts.</b></p> <p style="text-align: center;"><u>Assessment Limits</u></p> <ul style="list-style-type: none"> <li>➤ Two-dimensional shapes include polygons, circles, and composite figures.</li> <li>➤ Three-dimensional shapes include cubes, prisms, pyramids, cylinders, cones, spheres, and composite figures.</li> <li>➤ Formulas will be provided.</li> <li>➤ No oblique solids will be used.</li> <li>➤ Items may involve applications of geometric properties and relationships.</li> <li>➤ Students may be required to make comparisons which do not require calculations.</li> </ul> <p style="text-align: center;"><u>Skill Statement</u></p> <p>The student solves a problem involving perimeter, area, surface area, lateral area, circumference, and/or volume expressing solutions with appropriate units.</p>	

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Pre-requisites Summarized from Voluntary State Curriculum Mathematics Grades 3 – 8 and Algebra/Data Analysis CLG	Geometry Voluntary State Curriculum (VSC)	
	CLG 2 The student will demonstrate the ability to solve mathematical and real-world problems using measurement and geometric models and will justify solutions and explain processes used.	Additional Topics Would Include
<p><b>Standard 6.0 Knowledge of Number Relationships or Computation</b></p> <p>C2 Apply estimation strategies Grades 3 – 8 Use estimation to determine the reasonableness of an answer</p>	<p><b>2.3 The student will apply concepts of measurement using tools and technology when appropriate.</b></p> <p><b>2.3.2 The student will use techniques of measurement and will estimate, calculate, and/or compare perimeter, circumference, area, volume, and/or surface area of two- and three-dimensional figures and their parts.</b></p> <p style="text-align: center;"><u><b>Assessment Limits</b></u></p> <ul style="list-style-type: none"> <li>➤ Two-dimensional shapes include polygons, circles, and composite figures.</li> <li>➤ Three-dimensional shapes include cubes, prisms, pyramids, cylinders, cones, spheres, and composite figures.</li> <li>➤ Formulas will be provided.</li> <li>➤ No oblique solids will be used.</li> <li>➤ Items may involve applications of geometric properties and relationships.</li> <li>➤ Students may be required to make comparisons which do not require calculations.</li> </ul> <p style="text-align: center;"><u><b>Skill Statement</b></u></p> <p>The student solves a problem involving perimeter, area, surface area, lateral area, circumference, and/or volume expressing solutions with appropriate units.</p>	