

**Grs. 9, 10, 11, 12 Geometry Curriculum**

Curriculum Standards	Student Learning Goals	Skills from FHS Rubric (Problem Solver)	Suggested Instructional Strategies	Suggested Assessment Techniques
<p><b>LS G. G.1</b> Recognize special types of polygons (e.g., isosceles triangles, parallelograms, and rhombuses). Apply properties of sides, diagonals, and angles in special polygons; identify their parts and special segments (e.g., altitudes, mid segments); determine interior angles for regular polygons. Draw and label sets of points such as line segments, rays, and circles. Detect symmetries of geometric figures.</p>	<p>Demonstrate mastery of property of special types of polygons</p> <p>Apply properties of sides, diagonals and angles Identify their parts and special segments</p> <p>Find interior angles of regular polygons</p>	<p><b>Skill 5</b> Recognizes and analyzes unlikely or subtle similarities and differences</p> <p><b>Skill 7</b> Selects, justifies, and evaluates a sophisticated solution</p>	<ul style="list-style-type: none"> <li>• ORQ's</li> <li>• Worksheets</li> <li>• Group work</li> <li>• Graph boards</li> <li>• Overheads</li> <li>• Manipulatives</li> </ul>	<ul style="list-style-type: none"> <li>• Tests</li> <li>• Quizzes</li> <li>• Homework</li> <li>• Projects</li> <li>• Group work</li> </ul>
<p><b>LS G. G.2</b> Write simple proofs of theorems in geometric situations, such as theorems about congruent and similar figures, parallel or perpendicular lines. Distinguish between postulates and theorems. Use inductive and deductive reasoning, as well as proof by contradiction. Given a conditional statement, write its inverse, converse, and contra positive.</p>	<p>Write Simple proofs</p> <p>Distinguish between postulates and theorems</p> <p>Use Inductive reasoning in proofs</p> <p>Write conditional statements, their inverse and converse</p>	<p><b>Skill 2</b> Identifies a variety of possible important information; gathers sophisticated, apt. or valid information, organizes information in novel ways</p> <p><b>Skill 3</b> Independently creates and carries out to completion a complex multi-step task</p> <p><b>Skill 7</b> Selects, justifies, and evaluates a sophisticated solution</p>	<ul style="list-style-type: none"> <li>• Technology</li> <li>• Manipulatives</li> <li>• List formulas</li> <li>• Guided practice</li> <li>• Board work</li> </ul>	<ul style="list-style-type: none"> <li>• Tests</li> <li>• Quizzes</li> <li>• Homework</li> <li>• Projects</li> <li>• Group work</li> </ul>

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<p><b>LS G. G.4</b> Draw congruent and similar figures using a compass, straightedge, protractor, or computer software. Make conjectures about methods of construction. Justify the conjectures by logical arguments.</p>	<p>Draw congruent and similar figures with geometric tools</p>	<p><b>Skill 3</b> Independently creates and carries out to completion a complex multi-step task</p>	<ul style="list-style-type: none"> <li>• Hands on technological computer program</li> <li>• Traditional geometric tools</li> <li>• Patty paper</li> </ul>	<ul style="list-style-type: none"> <li>• Tests</li> <li>• Quizzes</li> <li>• Homework</li> <li>• Projects</li> <li>• Group work</li> <li>• Hands-on activities</li> </ul>
<p><b>LS G. G.5</b> Apply congruence and similarity correspondences (e.g., <math>\triangle ABC \cong \triangle XYZ</math>) and properties of the figures to find missing parts of geometric figures, and provide logical justification.</p>	<p>Apply congruent and similar triangle relationships to find missing parts and provide logical justification</p>	<p><b>Skill 2</b> Identifies a variety of possible important information; gathers sophisticated, apt. or valid information, organizes information in novel ways</p> <p><b>Skill 3</b> Independently creates and carries out to completion a complex multi-step task</p> <p><b>Skill 5</b> Recognizes and analyzes unlikely or subtle similarities and differences</p>	<ul style="list-style-type: none"> <li>• Manipulatives</li> <li>• Group work</li> <li>• ORQ's</li> <li>• Overhead</li> <li>• 2-Column Proofs</li> </ul>	<ul style="list-style-type: none"> <li>• Tests</li> <li>• Quizzes</li> <li>• Homework</li> <li>• Projects</li> <li>• Group work</li> </ul>
<p><b>LS G. G.6</b> Apply properties of angles, parallel lines, arcs, radii, chords, tangents, and secants to solve problems.</p>	<p>Apply properties of angles, parallel lines, circles, and segments in circles to solve problems</p>	<p><b>Skill 2</b> Identifies a variety of possible important information; gathers sophisticated, apt. or valid information, organizes information in novel ways</p> <p><b>Skill 5</b> Recognizes and analyzes unlikely or subtle similarities and differences</p>	<ul style="list-style-type: none"> <li>• Technology</li> <li>• Manipulatives</li> <li>• List formulas</li> <li>• Guided practice</li> <li>• Board work</li> </ul>	

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		<b>Skill 7</b> Selects, justifies, and evaluates a sophisticated solution		
<b>LS G. G.7</b> Solve simple triangle problems using the triangle angle sum property, and/or the Pythagorean theorem.	Demonstrates mastery of triangle problems using triangle-sum property and/or Pythagorean Theorem	<b>Skill 3</b> Independently creates and carries out to completion a complex multi-step task  <b>Skill 5</b> Recognizes and analyzes unlikely or subtle similarities and differences	<ul style="list-style-type: none"> <li>• ORQ's</li> <li>• Worksheets</li> <li>• Group work</li> <li>• Graph boards</li> <li>• Overheads</li> </ul>	<ul style="list-style-type: none"> <li>• Tests</li> <li>• Quizzes</li> <li>• Homework</li> <li>• Projects</li> <li>• Group work</li> </ul>
<b>LS G. G.8</b> Use the properties of special triangles (e.g., isosceles, equilateral, 30°–60°–90°, 45°–45°–90°) to solve problems.	Use properties of 30-60-90 and 45-45-90 triangles to solve problems	<b>Skill 2</b> Identifies a variety of possible important information; gathers sophisticated, apt. or valid information, organizes information in novel ways  <b>Skill 5</b> Recognizes and analyzes unlikely or subtle similarities and differences	<ul style="list-style-type: none"> <li>• Board explanation</li> <li>• Group work</li> <li>• Worksheets</li> </ul>	
<b>LS G. G.9</b> Define the sine, cosine, and tangent of an acute angle. Apply to the solution of problems.	Use trig ratios of acute angles  Apply trig ratios to solve problems	<b>Skill 3</b> Independently creates and carries out to completion a complex multi-step task  <b>Skill 7</b> Selects, justifies, and evaluates a sophisticated solution  <b>Skill 8</b> Tests, analyzes, and adapts solutions	<ul style="list-style-type: none"> <li>• Technology</li> <li>• List formulas</li> <li>• Guided practice</li> <li>• Board work</li> </ul>	
<b>LS G. G.10</b> Apply the triangle inequality and other inequalities associated with triangles (e.g., the longest	Use triangle inequality to solve problems	<b>Skill 4</b> Distinguishes subtle differences between fact and opinion; recognizes and gives evidence of subtle bias/point	<ul style="list-style-type: none"> <li>• List formulas</li> <li>• Guided practice</li> <li>• Board work</li> </ul>	

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side is opposite the greatest angle) to prove theorems and solve problems.		of view  <b>Skill 5</b> Recognizes and analyzes unlikely or subtle similarities and differences		
<b>LS G. G.11</b> Demonstrate an understanding of the relationship between various representations of a line. Determine a line’s slope and x- and y-intercepts from its graph or from a linear equation that represents the line. Find a linear equation describing a line from a graph or a geometric description of the line, e.g., by using the “point-slope” or “slope y-intercept” formulas. Explain the significance of a positive, negative, zero, or undefined slope.	Determine slope, and x & y intercepts from a graph or linear equation  Explain the significance of +/- /0 or undefined slopes	<b>Skill 2</b> Identifies a variety of possible important information; gathers sophisticated, apt. or valid information, organizes information in novel ways  <b>Skill 3</b> Independently creates and carries out to completion a complex multi-step task  <b>Skill 5</b> Recognizes and analyzes unlikely or subtle similarities and differences	<ul style="list-style-type: none"> <li>• Graphing Calculators</li> <li>• List formulas</li> <li>• Guided practice</li> <li>• Board work</li> </ul>	<ul style="list-style-type: none"> <li>• Tests</li> <li>• Quizzes</li> <li>• Homework</li> <li>• Projects</li> <li>• Group work</li> </ul>
<b>LS G. G.12</b> Using rectangular coordinates, calculate midpoints of segments, slopes of lines and segments, and distances between two points, and apply the results to the solutions of problems.	Demonstrates Mastery of Knowledge and use of formulas for distance, midpoint and slope and their application.	<b>Skill 2</b> Identifies a variety of possible important information; gathers sophisticated, apt. or valid information, organizes information in novel ways  <b>Skill 3</b> Independently creates and carries out to completion a complex multi-step task	<ul style="list-style-type: none"> <li>• Technology</li> <li>• Manipulatives</li> <li>• List formulas</li> <li>• Guided practice</li> <li>• Board work</li> </ul>	

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<p><b>LS G. G.13</b> Find linear equations that represent lines either perpendicular or parallel to a given line and through a point, e.g., by using the “point-slope” form of the equation.</p>	<p>Demonstrates Mastery of similarities and differences of parallel and perpendicular ideas and apply them to linear equations in point-slope form</p>	<p><b>Skill 2</b> Identifies a variety of possible important information; gathers sophisticated, apt. or valid information, organizes information in novel ways</p> <p><b>Skill 3</b> Independently creates and carries out to completion a complex multi-step task</p>	<ul style="list-style-type: none"> <li>• List similarities and differences between parallel and perpendicular slope</li> <li>• Give point-slope equation formula</li> <li>• Graph boards</li> <li>• Worksheets</li> </ul>	<ul style="list-style-type: none"> <li>• Tests</li> <li>• Quizzes</li> <li>• Homework</li> <li>• Projects</li> <li>• Group work</li> </ul>
<p><b>LS G. G.15</b> Draw the results, and interpret transformations on figures in the coordinate plane, e.g., translations, reflections, rotations, scale factors, and the results of successive transformations. Apply transformations to the solution of problems.</p>	<p>Draw the results and interpret transformations on figures in the coordinate plane, eg., translations, reflections, rotations, scale factors, and the results of successive transformations</p> <p>Apply transformations to the solutions of problems</p>	<p><b>Skill 2</b> Identifies a variety of possible important information; gathers sophisticated, apt. or valid information, organizes information in novel ways</p> <p><b>Skill 3</b> Independently creates and carries out to completion a complex multi-step task</p> <p><b>Skill 5</b> Recognizes and analyzes unlikely or subtle similarities and differences</p>	<ul style="list-style-type: none"> <li>• Demonstrate and practice using coordinate plane</li> <li>• Manipulatives</li> <li>• Technology</li> </ul>	
<p><b>LS G. M.1</b> Calculate perimeter, circumference, and area of common geometric figures such as parallelograms, trapezoids, circles, and triangles.</p>	<p>Demonstrates Mastery of formulas of perimeter, circumference, and area and the ability to find each for a variety of geometric figures</p>	<p><b>Skill 7</b> Selects, justifies, and evaluates a sophisticated solution</p> <p><b>Skill 8</b> Tests, analyzes, and adapts solutions</p>	<ul style="list-style-type: none"> <li>• Manipulatives</li> <li>• List formulas</li> <li>• ORQ’s</li> <li>• Work sheets</li> <li>• Guided practice</li> <li>• Activity work sheets</li> </ul>	
<p><b>LS G. M.2</b> Given the formula, find the lateral area, surface area, and volume of prisms, pyramids, spheres, cylinders,</p>	<p>Find lateral area, surface area and volumes of solids</p>	<p><b>Skill 5</b> Recognizes and analyzes unlikely or subtle similarities and differences</p>	<ul style="list-style-type: none"> <li>• Technology</li> <li>• Manipulatives</li> <li>• List formulas</li> <li>• Guided practice</li> </ul>	

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and cones, e.g., find the volume of a sphere with a specified surface area.		<p><b>Skill 7</b> Selects, justifies, and evaluates a sophisticated solution</p> <p><b>Skill 8</b> Tests, analyzes, and adapts solutions</p>	<ul style="list-style-type: none"> <li>• Board work</li> </ul>	