

GEOMETRY SCOPE AND SEQUENCE

MONTH	UNIT	STANDARDS	RESOURCES
September/ October/November	Unit 1: Points, Lines, Planes, and Angles 9 weeks	<p>G.G.1. Know correct geometric notation, including the notation for line segment \overline{AB} and angle $\angle ABC$.</p> <p>G.G.4. Draw and label sets of points such as line segments, rays, and circles.</p> <p>G.G.7. Use properties and theorems about congruent and similar figures and about perpendicular and parallel lines to solve problems.</p> <p>G.G.9. 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 contrapositive.</p> <p>G.G.13. Apply properties of angles, parallel lines, arcs, radii, chords, tangents, and secants to solve problems.</p> <p>G.G.17. 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.</p> <p>G.G.18. 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.</p> <p>G.G.19. 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>Textbook: McDougal-Littell: <i>Geometry: Concepts and Skills</i> Chap. 1, pp. 1-65 Chap. 2, pp. 69-123 Chap. 3, pp. 127-183 Skills Review pp. 793-795 Extra Practice pp. 803-808 Algebra Review pp. 124-125 Postulates p. 827 Theorems pp. 828</p> <p>Additional Resources: Prentice Hall <i>Geometry</i> pp. 83-88 (graph of a line and slope) for G.G.17 & G.G.19 McDougal-Littell: <i>Geometry, Technology Activity</i> p. 150-151; Teacher Resource for G.G.19 Algebra Review p. 299 for G.G.17</p> <p>For G.G.17:</p> <ol style="list-style-type: none"> www.seeingmath.concord.org/resources (click on linear transformer and/or function analyzer), www.math.com (select algebra as the subject and graphing equations and inequalities as the topic), www.terragon.com/tkobrien/algebra (This site has great crossword and find word puzzles). <p>For G.G.9:</p> <ol style="list-style-type: none"> www.sparknotes.com/math/geometry3/logicstatements/summary.html www.sparknotes.com/math/geometry3/logicstatements/problems3.rhtml <p>For G.G.17: McDougal-Littell: <i>Algebra 1</i>, Chap. 4, pp. 210-233; Chap. 5, pp. 270-314</p> <p>For G.G.19: McDougal-Littell: <i>Algebra 1</i>, Chap. 4, pp. 241-247 McDougal-Littell: <i>Electronic Teacher Tools</i> McDougal-Littell: <i>Interactive Games</i>, "Deep Sea Diver," "Bike Racer," and "Flying Acrobats," www.classzone.com</p>

MONTH	UNIT	STANDARDS	RESOURCES
September/ October/November	Unit 1: Points, Lines, Planes, and Angles (continued) 9 weeks		<p>For G.G.19: <i>SpringBoard</i>, "Riddle Me This"</p> <p>For G.G.18: <i>SpringBoard</i>, "Halftime Salute" Part I</p> <p>For G.G. 7 and 9: <i>SpringBoard</i>, "Patios by Madeline"</p>
November/ December	Unit 2: Polygons with Emphases on Triangles and Quadrilat- erals 6 weeks	<p>G.G.2. Recognize special types of polygons (e.g., isosceles triangles, parallelograms, and rhombuses).</p> <p>G.G.3. Apply properties of sides, diagonals, and angles in special polygons; identify their parts and special segments (e.g., altitudes, midsegments); determine interior angles for regular polygons.</p> <p>G.G.6. Apply the triangle inequality and other inequalities associated with triangles (e.g., the longest side is opposite the greatest angle) to prove theorems and to solve problems.</p> <p>G.G.7. Use properties and theorems about congruent and similar figures and about perpendicular and parallel lines to solve problems.</p> <p>G.G.8. Write simple proofs of theorems in geometric situations, such as theorems about triangles, congruent and similar figures, and perpendicular and parallel lines (e.g., the longest side is opposite the greatest angle, two lines parallel to a third are parallel to each other; perpendicular bisectors of line segments are the set of all points equidistant from the two end points).</p> <p>G.G.10. Apply formulas for a rectangular coordinate system to justify theorems.</p> <p>G.G.11. Draw congruent and similar figures using a compass, straightedge, or protractor. Justify the constructions by logical argument.</p> <p>G.G.12. Apply congruence and similarity correspondences (e.g., $\triangle ABC \cong \triangle XYZ$) and properties of the figures to find missing parts of geometric figures, and provide logical justification.</p> <p>G.G.14. Solve simple triangle problems using the triangle angle sum property and/or the Pythagorean theorem; study and understand more than one proof of this theorem.</p> <p>G.G.18. 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.</p>	<p>Textbook: McDougal-Littell: <i>Geometry: Concepts and Skills</i> Chap. 11, pp. 661-668 Chap. 4, pp. 191-257 Chap. 5, pp. 261-313 Chap. 6, pp. 319-385 Extra Practice pp. 809-814; 823: 1-15</p> <p>Electronic Teacher Tools Technology Activity p. 228; Teacher Resource Technology Activity p. 286; Teacher Resource Technology Activity p. 294; Teacher Resource Technology Activity p. 329; Teacher Resource</p> <p>Interactive Games, "Mummy Chase," "Triangle Factory," and "Shapes in Space," www.classzone.com</p> <p>Additional Resources: For G.G.2, 3, 7: <i>SpringBoard</i>, "Plenty of Polygons" For G.G.7, 11, 12: <i>SpringBoard</i>, "Truss Your Judgment" For G.G.3: <i>SpringBoard</i>, "What's the Point" For G.G.3: <i>SpringBoard</i>, "HalfTime Salute" Parts II and II</p>

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January	<p>Unit 3: Similarity 3 weeks</p>	<p>G.G.7. Use properties and theorems about congruent and similar figures and about perpendicular and parallel lines to solve problems.</p> <p>G.G.8. Write simple proofs of theorems in geometric situations, such as theorems about triangles, congruent and similar figures, and perpendicular and parallel lines (e.g., the longest side is opposite the greatest angle, two lines parallel to a third are parallel to each other; perpendicular bisectors of line segments are the set of all points equidistant from the two end points).</p> <p>G.G.11. Draw congruent and similar figures using a compass, straightedge, or protractor. Justify the constructions by logical argument.</p> <p>G.G.12. Apply congruence and similarity correspondences (e.g., $\triangle ABC \cong \triangle XYZ$) and properties of the figures to find missing parts of geometric figures, and provide logical justification.</p>	<p>Textbook: McDougal-Littell: <i>Geometry: Concepts and Skills</i> Chap. 8, pp. 455-505 Skills Review p. 788 Extra Practice pp. 817-818 #1-45 End of Course Test p. 699 #54-60 Electronic Teacher Tools <i>Geometry</i>, Technology Activity p. 514; Teacher Resource Interactive Games, "Car Jam," www.classzone.com</p> <p>Additional Resources: For G.G.11: http://whistleralley.com/construction/reference.htm For G.G.12: <i>SpringBoard</i>, "Picture This" For G.G.12: <i>SpringBoard</i>, "Mirror, Mirror on the Floor"</p>
February	<p>Unit 4: Area, Surface Area, and Volume 4 weeks</p>	<p>G.G.21. Demonstrate the ability to visualize solid objects and recognize their projections, cross sections, and graph points in 3-D.</p> <p>G.G.22. Find and use measures of perimeter, circumference, and area of common geometric figures such as parallelograms, trapezoids, circles, and triangles.</p> <p>G.G.23. Find and use measures of lateral areas, surface areas, and volumes of prisms, pyramids, spheres, cylinders, and cones, and relate these measures to each other using formulas (e.g., find the volume of a sphere with a specified surface area).</p> <p>G.G.24. Relate changes in the measurement (including units) of one attribute of an object to changes in other attributes (e.g., how changing the radius or height of a cylinder affects its surface area or volume).</p> <p>G.G.25. Describe the effects of approximate error in measurement and rounding on measurements and on computed values from measurements.</p> <p>G.G.26. Use dimensional analysis for unit conversion and to confirm that expressions and equations make sense.</p>	<p>Textbook: McDougal-Littell: <i>Geometry: Concepts and Skills</i> Chap. 6, pp. 371-385 Chap. 11, pp. 676-681; 683-698 Chap. 12, pp. 717-777 Appendix 3, pp. 871-873 for G.G.24, G.G.25 and G.G.26. Skills Review p. 843 Extra Practice pp. 814: 47-49; 824: 30-43; 825-826 Electronic Teacher Tools Interactive Games, "Operation Clean Beach" and "Clown House," www.classzone.com</p> <p>Additional Resources: For G.G.21: www.scienceu.com/geometry/facts/solids/java/dodeca.html For G.G.21: www.mathsnet.net/geometry/solid/platonic.html For G.G.23: <i>SpringBoard</i>, "Crystal Globe" For G.G.23: <i>SpringBoard</i>, "Filling Up"</p>

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March	Unit 5: Right Triangles and Trigo- nometry 3 weeks	<p>G.G.14. Solve simple triangle problems using the triangle angle sum property and/or the Pythagorean theorem; study and understand more than one proof of this theorem.</p> <p>G.G.15. Use the properties of special triangles (e.g., isosceles, equilateral, 30°-60°-90°, 45°-45°-90°) to solve problems.</p> <p>G.G.16. Define the sine, cosine, and tangent of an acute angle. Apply to the solution of problems.</p>	<p>Textbook: McDougal-Littell: <i>Geometry: Concepts and Skills</i> Chap. 9, pp. 525-572 Algebra Review pp. 522-523 Skills Review pp. 668-669 Extra Practice pp. 819-820: 22-37 Squares Et Square Roots Table p. 844 Trigonometric Ratios Table p. 845 Electronic Teacher Tools Interactive Games, "Frog Swamp," www.classzone.com</p> <p>Additional Resources: For G.G.15: <i>SpringBoard</i>, "Community Quilting Project" For G.G.16: <i>SpringBoard</i>, "The Right Angle"</p>
April	Unit 6: Circles 3 weeks	<p>G.13. Apply properties of angles, parallel lines, arcs, radii, chords, tangents, and secants to solve problems.</p>	<p>Textbook: McDougal-Littell: <i>Geometry: Concepts and Skills</i> Chapter 10, pp. 593-647 Extra Practice pp. 693-694 Electronic Teacher Tools Interactive Game, "Pinball," www.classzone.com</p> <p>Additional Resources: For G.G.13: <i>SpringBoard</i>, "Coming Full Circle"</p>

MONTH	UNIT	STANDARDS	RESOURCES
May	Unit 7: Transformations 2 weeks	G.G.5. Detect symmetries of geometric figures. G.G.20. Draw the results and interpret transformations on figures in the coordinate plane such as translations, reflections, rotations, scale factors, and the results of successive transformations. Apply transformations to the solution of problems.	Textbook: McDougal-Littell: <i>Geometry: Concepts and Skills</i> Chap. 7, pp. 393-436 "Dilations," Chap. 8, pp. 506-514 Extra Practice pp. 815-816: 1-36, p. 818: 46-49 Electronic Teacher Tools Technology Activity p. 514; Teacher Resource Brain Games and Interactive Games, www.classzone.com Additional Resources: For G.G.20: www.illuminations.nctm.org/index.asp (Click on lessons and select grades 9-12 and standards geometry and then select the lessons: Reflect on This and Symmetries and the Properties parts 1-4). For G.G.20: <i>SpringBoard</i> , "Half Time Salute" For G.G.5: <i>SpringBoard</i> , "Tracking the Migration"