

Instructional Guide

Grade Level Tenth Grade

Subject Geometry

School System Pickens County

School Year 2011-2012

| Time Period (Pacing – when) | AHSGE ACT Correlations | Standards/ Components (Pacing – what) | Resources/ Activities (Pacing – how) Curricular Alignment | Date of Common Formative Assessment (Pacing – how well) | Mapping Comments (What works what needs adjustment) |
|---------------------------------------|------------------------------|--|--|---|--|
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| 1 st 9 weeks 2 days | ACT | Estimate or calculate the length of a line segment based on the other lengths given on a geometric figure. | Text/Teaching Materials: Glencoe Geometry: 1-2, 1-3 Vocabulary: distance formula, midpoint, congruent, segment bisector | | |
| 1 st 9 weeks 1 day | 12 | Geo.12.g. Determine perimeters of regular polygons given the coordinates of vertices. Geo.12.h. Determine perimeters of regular polygons given other characteristics. | Text/Teaching Materials: Glencoe Geometry: Section 1-6 Vocabulary: dodecagon, concave, convex | | |

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|---------------------------------------|------------------------------|--|--|---|--|
| 1 st 9 weeks 3 days | 13 | Geo.13.a. Apply distance formula to solve problems. Geo.13.b. Apply distance formula to confirm properties of polygons. Geo.13.c. Apply midpoint formula to solve problems. Geo.13.d. Apply midpoint formula to confirm properties of polygons. Geo.13.e. Apply slope formula to solve problems. Geo.13.f. Apply slope formula to confirm properties of polygons. | Text/Teaching Materials: <u>Glencoe Geometry</u> : Section 1-3,1-4,1-5,1-6,3-3,3-4,3-5,3-6,4-1,4-4, 6-4,8-2,8-3,8-4,8-5,8-6,8-7,11-1 Vocabulary: midpoint, segment bisector, opposite rays, interior, exterior, angle bisector, adjacent angles, vertical angles, linear pair, complementary angles, supplementary angles, perpendicular, concave, convex, n-gon, dodecagon, slope, rate of change, slope-intercept form, point-slope form, equidistant, equiangular triangle, included angle, parallelogram, rhombus, trapezoid | | |

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| 1 st 9 weeks 3 days | 2 | Geo.2.a. Prove theorems related to pairs of vertical angles. Geo.2.b. Prove theorems related to pairs of adjacent angles. Geo.2.c. Prove theorems related to pairs of complementary angles. Geo.2.d. Prove theorems related to pairs of supplementary angles. Geo.2.e. Prove theorems related to pairs of angles formed by parallel lines cut by a transversal. Geo.2.f. Prove theorems related to pairs of angles formed by perpendicular lines | Text/Teaching Materials: <u>Glencoe Geometry</u> : Section 1-3,1-4,1-5,1-6,3-3,3-4,3-5,3-6,4-1,4-4, 6-4,8-2,8-3,8-4,8-5,8-6,8-7,11-1 Vocabulary: midpoint, segment bisector, opposite rays, interior, exterior, angle bisector, adjacent angles, vertical angles, linear pair, complementary angles, supplementary angles, perpendicular, concave, convex, n-gon, dodecagon, slope, rate of change, slope-intercept form, point-slope form, equidistant, equiangular triangle, included angle, parallelogram, rhombus, trapezoid | | |

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| 1 st 9 weeks 4 days | 10 | Geo.10.a. Use inductive reasoning to make conjectures. Geo.10.b. Use deductive reasoning to justify conclusions. Geo.10.B.1. Recognizing limitations of a conclusion through inductive reasoning. Geo.10.B.2. Using deductive reasoning to prove theorems. Geo.10.B.3. Using proof by negation to prove theorems Geo.10.B.4. Writing conditional statements of a given conjecture. | Text/Teaching Materials: Glencoe Geometry: Section 2-1,2-2,2-3,2-4,2-5,2-6,2-7,2-8 Vocabulary: inductive reasoning, counterexample, negation, conjunction, disjunction, converse, inverse, contrapositive, hypotheses, conclusion, deductive reasoning, Law of Detachment, Law of Syllogism, postulate, theorem, paragraph proof, informal proof, two-column proof, formal proof | | |
| 1 st 9 weeks 2 days | ACT | ACT: Use angle properties to find an unknown angle measure. ACT: Exhibit knowledge of basic angle properties and special sums of angle measures (e.g. 90°, 180°, and 360°) | Text/Teaching Materials: Glencoe Geometry: 3-1 Vocabulary: alternate interior, alternate exterior, vertical angles, consecutive interior angles, adjacent angles, corresponding angles, complementary angles, supplementary angles | | |

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| 1 st 9 weeks 1 day | ACT | ACT: Exhibit knowledge of the angles associated with parallel lines. ACT: Find the measure of an angle using properties of parallel lines. | Text/Teaching Materials: Glencoe Geometry: 3-2 Vocabulary: alternate interior, alternate exterior, vertical angles, consecutive interior angles, adjacent angles, corresponding angles | | |
| 1 st 9 weeks 2 days | 1 | Geo. 1.a. Determine the equation of a line given two points Geo. 1.b. Determine the equation of a line given a point and a slope. Geo. 1.c. Determine the equation of a line given a table of values. Geo. 1.d. Determine the equation of a line given a graph. Geo. 1.e. Determine the equation of a line parallel to another line through a given point. Geo. 1.f. Determine the equation of a line perpendicular to another line through a given point. | Text/Teaching Materials: Glencoe Geometry: Section 3-4 Vocabulary: slope-intercept form, point-slope form, standard form | | |

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| 1 st 9 weeks 2 days | 5 | Geo.5.a. Determine the measure of interior angles associated with polygons. Geo.5.b. Determine the measure of exterior angles associated with polygons. Geo.5.B.1.a. Verifying formulas for measures of interior angles of polygons inductively. Geo.5.B.1.b. Verifying formulas for measures of interior angles of polygons deductively. Geo.5.B.1.c. Verifying formulas for measures of exterior angles of polygons inductively. Geo.5.B.1.d. Verifying formulas for measures of exterior angles of polygons deductively. | Text/Teaching Materials: <u>Glencoe Geometry</u> : Sections 4-2,8-1 Vocabulary: exterior angles, interior angles, diagonal | | |

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| 1 st 9 weeks 4 days | 9 | Geo.9.a. Determine relationships between two triangles. Geo.9.b. Determine relationships between two triangles proving congruence of the triangles from given information. Geo.9.c. Determine relationships between two triangles proving similarity of the triangles from given information. Geo.9.d. Determine relationships between two triangles using the relationships to solve problems. Geo.9.e. Determine relationships between two triangles using the relationships to establish other relationships. | Text/Teaching Materials: <u>Glencoe Geometry</u> : Section 4-2,4-3,4-4,4-5,4-7,6-2,6-3,6-5,7-1 Vocabulary: exterior angles, interior angles, remote interior angle, transformations, included angle, included side, base angles, vertex angle, scale factor, geometric mean | | |

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| 1 st 9 weeks 5 days | 6 | <p>Geo.6.i. Solve problems using properties related to other geometric shapes.</p> <p>Geo.6.j. Solve problems using theorems related to other geometric shapes.</p> <p>Geo.6.k. Solve application-based problems using properties related to other geometric shapes.</p> <p>Geo.6.l. Solve application-based problems using theorems related to other geometric shapes.</p> | <p>Text/Teaching Materials: <u>Glencoe Geometry</u>: Sections 4-1,4-2,4-3,4-4,4-5,4-6,4-7,6-2,6-3,6-4,6-5,7-1,7-2,7-3,7-4,7-5,7-6,7-7,8-1,11-2,11-3,11-4</p> <p>Vocabulary: equiangular triangle, transformations, included angle, included side, geometric mean, Pythagorean triple, trigonometry, trigonometric ratios, sine; cosine, tangent, angle of elevation, angle of depression. Law of Sines, Law of Cosines, adjacent side, opposite side, hypotenuse</p> | | |

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| 1 st 9 weeks 5 days | 3 | Geo.3.a. Justify relationships among different classes of polygons by using their properties. | Text/Teaching Materials: <u>Glencoe Geometry</u> : Sections 1-6,4-6,4-7,8-2,8-3,8-4,8-5,8-6,8-7,9-4 Vocabulary: dodecagon, n-gon, vertex angle, base angles, trapezoid, rhombus, parallelogram, isosceles trapezoid, tessellation (regular and semi-regular), concave, convex | | |

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| 1 st 9 weeks 4 days | 4 | Geo.4.a. Apply proportional reasoning to determine missing lengths of sides of similar polygons. Geo.4.b. Apply proportional reasoning to determine missing measures of angles of similar polygons. Geo.4.c. Apply proportional reasoning to determine ratios of perimeters of similar polygons. Geo. 4.d. Apply proportional reasoning to determine ratios of areas of similar polygons. | Text/Teaching Materials: Glencoe Geometry: Sections 6-2,6-3,6-4,6-5 Vocabulary: scale factor | | |
| 1 st 9 weeks 1 day | 9 | Geo. 9.B.1. Calculating the geometric mean to find missing lengths in right triangles. | Text/Teaching Materials: Glencoe Geometry: Section 7-1 Vocabulary: geometric mean | | |

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| 2 nd 9 weeks 3 days | 7 | Geo.7.a. Apply the Pythagorean Theorem to solve application problems. Geo.7.b. Apply the Pythagorean Theorem to solve application problems expressing answers in simplified radical form or decimal approximations. Geo.7.c. Apply the Pythagorean Theorem to solve application problems using Pythagorean triples where applicable. Geo.7.d. Apply the Pythagorean Theorem converse to solve application problems. Geo.7.e. Apply the Pythagorean Theorem converse to solve application problems expressing answers in simplified radical form or decimal approximations Geo.7.f. Apply the Pythagorean Theorem converse to solve application problems using Pythagorean triples where applicable. Geo.7.B.1. Proving the Pythagorean Theorem. | Text/Teaching Materials: Glencoe Geometry: Section 7-2 Vocabulary: Pythagorean triple, hypotenuse, legs | | |

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| 2 nd 9 weeks 3 days | 8 | Geo.8.a. Apply properties of a 30-60-90 triangle to find the missing side lengths. Geo.8.b. Apply properties of a 45-45-90 triangle to find the missing side lengths. | Text/Teaching Materials: <u>Glencoe Geometry</u> : Section 7-3 | | |
| 2 nd 9 weeks 3 days | 11 | Geo.11.a. Solve for missing measures of sides and angles in right triangles by applying the right triangle ratios of sine, cosine, and tangent. | Text/Teaching Materials: <u>Glencoe Geometry</u> : Section 7-4,7-5 Vocabulary: trigonometry, trigonometric ratios, sine; cosine, tangent, angle of elevation, angle of depression. adjacent side, opposite side, hypotenuse | | |
| 2 nd 9 weeks 3 days | 6 | Geo.6.e. Solve problems using properties related to quadrilaterals. Geo.6.f. Solve problems using theorems related to quadrilaterals. Geo.6.g. Solve application-based problems using properties related to quadrilaterals. Geo.6.h. Solve application-based problems using theorems related to quadrilaterals. | Text/Teaching Materials: <u>Glencoe Geometry</u> : Sections 8-2,8-3,8-4,8-5,8-6,8-7,11-1,11-2 Vocabulary: rhombus, parallelogram, trapezoid, | | |

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| 2 nd 9 weeks 3 days | 6 | Geo.6.a. Solve problems using properties related to circles. Geo.6.b. Solve problems using theorems related to circles. Geo.6.c. Solve application-based problems using properties related to circles. Geo.6.d. Solve application-based problems using theorems related to circles. | Text/Teaching Materials: Glencoe Geometry: Sections 10-1,10-2,10-3,10-4,10-5,10-6,10-7,11-3 Vocabulary: center, chord, circumference, Pi, central angle, arc (minor and major), semicircle, inscribed, circumscribed, intercepted, tangent, point of tangency, secant, apothem | | |
| 2 nd 9 weeks 1 day | ACT | ACT: compute the circumference of a circle after identifying necessary information | Text/Teaching Materials: Glencoe Geometry: 10-1 Vocabulary: chord, circumference, Pi | | |
| 2 nd 9 weeks 3 days | 16 | Geo.16.a. Calculate measures of arcs of a circle from given information. Geo.16 b. Calculate measures of sectors of a circle from given information. | Text/Teaching Materials: Glencoe Geometry: 10-2,10-3,10-4,10-6 Vocabulary: central angle, arc (minor and major), semicircle, inscribed, circumscribed, intercept, secant, tangent of a circle | | |

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| 2 nd 9 weeks 2 days | 6 | Geo.6.B.1. Determining the center and radius of a circle given its equation. Geo.6.B.2. Determining the equation of a circle given its center and radius. | Text/Teaching Materials: Glencoe Geometry: Section 10-8 | | |
| 2 nd 9 weeks 4 days | 12 | Geo.12.a. Determine areas of regular polygons given the coordinates of vertices. Geo.12.b. Determine areas of regular polygons given other characteristics. Geo.12.c. Determine areas of regular polygons with inscribed polygons given the coordinates of the vertices. Geo.12.d. Determine areas of regular polygons with inscribed polygons given other characteristics. Geo.12.e. Determine areas of regular polygons with circumscribed polygons given the coordinates of the vertices. Geo.12.f. Determine areas of regular polygons with circumscribed polygons given other characteristics. | Text/Teaching Materials: Glencoe Geometry: Section 11-1,11-2,11-3,11-4,11-5 Vocabulary: parallelogram, rhombus, apothem, irregular figure, irregular polygon, geometric probability, sector | | |

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| 2 nd 9 weeks 2 days | 18 | Geo.18.a. Calculate probabilities arising in geometric contexts. | Text/Teaching Materials: <u>Glencoe Geometry:</u> 11-5 Vocabulary: geometric probability, sector | | |
| 2 nd 9 weeks 2 days | 15 | Geo.15.a. Classify polyhedra according to properties. Geo.15.b. Classify polyhedra according to properties using the number of faces. Geo.15.B.1. Identifying Euclidean solids. | Text/Teaching Materials: <u>Glencoe Geometry:</u> 12-1 Vocabulary: polyhedron, face, edges, prism, bases, pyramid, Platonic (Euclidean) solids, cylinder, cone, sphere, cross-section | | |

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| 2 nd 9 weeks 3 days | 17 | Geo.17.a. Calculate surface area of solid figures. Geo.17.b. Calculate surface area of spheres. Geo.17.c. Calculate surface area of cones. Geo.17.d. Calculate surface area of pyramids. Geo.17.B.1.a. Deriving formula for surface area of spheres. Geo.17.B.1.b. Deriving formula for surface area of cones. Geo.17.B.1.c. Deriving formula for surface area of pyramids. Geo.17.B.2.a. Calculating specific missing dimensions of solid figures from surface area. Geo.17.B.3.a. Determining the relationship between surface areas of similar figures. | Text/Teaching Materials: <u>Glencoe Geometry:</u> 12-2,12-3,12-4,12-5,12-6,12-7 Vocabulary: surface area, lateral faces, lateral edges, lateral area, right cylinder, oblique cylinder, pyramid, slant height, circular cone, right cone, oblique cone, sphere, hemisphere, great circle | | |

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| 2 nd 9 weeks 3 days | 17 | Geo.17.e. Calculate volume of solid figures. Geo.17.f. Calculate volume of spheres. Geo.17.g. Calculate volume of cones. Geo.17.h. Calculate volume of pyramids. Geo.17.B.1.d. Deriving formula for volume of spheres. Geo.17.B.1.e. Deriving formula for volume of cones. Geo.17.B.1.f. Deriving formula for volume of pyramids. Geo.17.B.2.b. Calculating specific missing dimensions of solid figures from volume. Geo.17.B.3.b. Determining the relationship between volumes of similar figures. | Text/Teaching Materials: <u>Glencoe Geometry</u> : 13-1,13-2,13-3,13-4 Vocabulary: volume, similar solids, congruent solids | | |