Arkansas Mathematics Curriculum Framework, Geometry, Correlated to *Cord Geometry*

Standards and Student Learner Expectations		Student Edition Lesson(s)
Language of Geometry		
Content Standard 1. ***Students will develop the language of geometry including specialized vocabulary, reasoning, and application of theorems, properties, and postulates.***		
LG.1.G.1	Define, compare and contrast *inductive reasoning* and *deductive reasoning* for making predictions based on real world situations • *venn diagrams* • *matrix logic* • *conditional statements* (statement, *inverse, converse*, and *contrapositive*)	2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.Labs, 2.Aps
LG.1.G.2	Represent *points*, *lines*, and *planes* pictorially with proper identification, as well as basic concepts derived from these undefined terms, such as segments, rays, and *angles*	1.1
LG.1.G.3	Describe relationships derived from geometric figures or figural patterns	1.4, 1.5, 2.7, 2.8, 3.3
LG.1.G.4	Apply, with and without appropriate technology, definitions, *theorems*, properties, and *postulates* related to such topics as *complementary, supplementary, vertical angles*, *linear pairs*, and angles formed by *perpendicular* lines	1.4, 1.5, 2.7, 2.8, 3.2, 3.3
LG.1.G.5	Explore, with and without appropriate technology, the relationship between angles formed by two lines cut by a *transversal* to justify when lines are *parallel*	3.2, 3.3
LG.1.G.6	Give justification for conclusions reached by deductive reasoning	2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8

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Triangles		
Content Standard 2. ***Students will identify and describe types of triangles and their special segments. They will use logic to apply the properties of congruence, similarity, and inequalities. The students will apply the*** **Pythagorean Theorem** ***and trigonometric ratios to solve problems in real world situations.***		
T.2.G.1	Apply *congruence* (SSS …) and *similarity* (AA ...) correspondences and properties of figures to find missing parts of geometric figures and provide logical justification	4.1, 4.2, 4.3, 6.2, 6.3
T.2.G.2	Investigate the measures of segments to determine the existence of triangles (*triangle inequality theorem*)	3.5, 3.6
T.2.G.3	Identify and use the special segments of triangles (*altitude*, *median*, angle *bisector*, *perpendicular bisector*, and *midsegment*) to solve problems	4.5, 6.3, 6.5
T.2.G.4	Apply the *Pythagorean Theorem* and its converse in solving practical problems	6.6
T.2.G.5	Use the *special right triangle* relationships (30˚-60˚-90˚ and 45˚-45˚-90˚) to solve problems	6.7
T.2.G.6	Use *trigonometric ratios* (sine*, cosine, tangent*) to determine lengths of sides and measures of angles in right triangles including *angles of elevation* and *angles of depression*	6.8, 6.9
Measurement		
Content Standard 3. ***Students will measure and compare, while using appropriate formulas, tools, and technology to solve problems dealing with length, perimeter, area and volume.***		
M.3.G.1	Calculate probabilities arising in geometric contexts (Ex. Find the probability of hitting a particular ring on a dartboard.)	8.7
M.3.G.2	Apply, using appropriate units, appropriate formulas (*area, perimeter, surface area*, *volume*) to solve application problems involving *polygons*, *prisms, pyramids, cones, cylinders, spheres* as well as composite figures, expressing solutions in both exact and approximate forms	8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.Aps, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.Aps
M.3.G.3	Relate changes in the measurement of one *attribute* of an object to changes in other attributes (Ex. How does changing the *radius* or height of a cylinder affect its surface area or volume?)	8.6, 10.8
M.3.G.4	Use (given similar geometric objects) proportional reasoning to solve practical problems (including scale drawings)	6.1, 6.2, 6.3, 6.4
M.3.G.5	Use properties of parallel lines and proportional reasoning to find the lengths of segments	6.5

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Relationships between two- and three- dimensions		
Content Standard 4. ***Students will analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.***		
R.4.G.1	Explore and verify the properties of *quadrilaterals*	5.3, 5.4, 5.5, 5.6, 5.Aps
R.4.G.2	Solve problems using properties of polygons: • sum of the measures of the *interior angles of a polygon* • interior and *exterior angle measure of a regular polygon* or *irregular polygon* • number of sides or angles of a polygon	3.4, 3.5, 3.6, 3.Aps, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.Aps
R.4.G.3	Identify and explain why figures *tessellate*	11.5
R.4.G.4	Identify the attributes of the five *Platonic Solids*	10.1, 10.3, 10.4, 10.5, 10.6, 10.7
R.4.G.5	Investigate and use the properties of angles (*central* and *inscribed*) *arcs, chords, tangents*, and *secants* to solve problems involving *circles*	9.2, 9.3, 9.4, 9.5, 9.Labs, 9.Aps
R.4.G.6	*Solve problems using inscribed and* circumscribed *figures*	8.Lab3, 9.2, 9.3
R.4.G.7	*Use* orthographic drawings *(top, front, side) and* isometric drawings *(corner) to represent three-dimensional objects*	10.1
R.4.G.8	*Draw, examine, and classify* cross-sections *of three-dimensional objects*	10.9
Coordinate Geometry and Transformations		
Content Standard 5. ***Students will specify locations, apply transformations and describe relationships using coordinate geometry.***		
CGT.5.G.1	Use *coordinate geometry* to find the distance between two points, the *midpoint of a segment*, and the *slopes* of parallel, perpendicular, horizontal, and vertical lines	7.1, 7.3, 7.4
CGT.5.G.2	Write equations of lines in *slope-intercept form* and use slope to determine parallel and perpendicular lines	7.4
CGT.5.G.3	Determine, given a set of points, the type of figure based on its properties (*parallelogram, isosceles triangle,* trapezoid)	7.5
CGT.5.G.4	Write, in standard form, the equation of a circle given a graph on a coordinate plane or the center and radius of a circle	9.1
CGT.5.G.5	Draw and interpret the results of transformations and successive *transformations* on figures in the coordinate plane • *translations* • *reflections* • *rotations* (90˚, 180˚, clockwise and counterclockwise about the origin) • *dilations* (scale factor)	11.1, 11.2, 11.3, 11.4, 11.6, 11.7