Computer Science Academy
FRANCIS TUTTLE TECHNOLOGY CENTER

Oklahoma Academic Standards for Pre AP Geometry

Essentials of Geometry	
Identify Points, Lines, Planes, Rays, and Segments.	5.1
Use Midpoint and Distance Formulas.	5.1
Measure and Classify Angles- acute, right, obtuse, straight, congruent.	2.1
Constructions- congruent angles and segments; angle and segment bisectors.	2.1
Describe Angle Pair Relationships- complementary, supplementary, adjacent, linear, and vertical.	2.2
Classify Polygons- convex, concave, equilateral, equiangular, regular, triangle, quadrilateral...n-gon.	2.3a
Find Perimeter, Circumference, and Area- use to determine unknown values using correct units of measure.	2.3d
Euclidean vs. non-Euclidean geometries.	1.3
Reasoning Proof	
Use Inductive Reasoning- conjectures, counterexamples, logical arguments.	1.1
Analyze Conditional Statements- if-then forms, hypothesis, conclusion, negation, converse, inverse, contrapositive, biconditional.	1.1, 1.2
Use Deductive Reasoning.	1.1
Use Postulates and Diagrams.	1.1, 1.2
Parallel and Perpendicular Lines	
Identify Pairs of Lines and Angles- parallel and skew lines; corresponding, alternate interior, alternate exterior, and consecutive angles.	2.2a, 2.2c
Use Pairs of Lines and Angles- prove lines are parallel deductively and algebraically.	2.2a, 2.2c
Use Parallel lines, Transversals, and Angles- solve various real-life problems Find and Use Slopes of Lines.	2.2b, 2.2c, 5.1, 5.2a
Write and Graph Equations of Lines.	2.2b, 2.2c, 5.1, 5.2a
Congruent Triangles	
Apply Triangle Sum Properties- use interior and exterior sums to solve problems.	2.3b
Apply Congruence and Triangles- determine and verify relationships using algebraic and deductive methods.	2.5a
Prove Triangles Congruent by SSS, SAS, ASA, AAS, and HL.	2.5a
Use Congruent Triangles- determine unknown values such as angles, side lengths, perimeter or circumference, and area.	2.5b
Use Isosceles and Equilateral Triangles.	2.3a, 2.3b, 2.3d
Perform Congruence Transformations.	5.2b
Relationships within Triangles	

Midsegment Theorem and Coordinate Proof.	5.2a
Construct and Use Perpendicular Bisectors.	2.1, 2.3d
Construct and Use Angle Bisectors of Triangles.	2.1, 2.3d
Construct and Use Medians and Altitudes.	2.1, 2.3d
Similarity	
Ratios, Proportions, and the Geometric Mean.	2.4a
Use Proportions to Solve Geometry Problems.	2.4b
Problem Solving with Similar Polygons.	2.4b
Prove Triangles Similar by AA, SSS, SAS- use algebraic and deductive proofs.	2.4a, 2.4b
Perform Similarity Transformations.	5.2b
Right Triangles and Trigonometry	
Apply the Pythagorean Theorem- use to find missing side lengths.	3.1
Use the Converse of the Pythagorean Theorem- use to determine acute, right and obtuse triangles and verify using algebraic and deductive proofs.	3.1, 3.2
Use Similar Right Triangles.	2.4a
Special Right Triangles - use 45-45-90 and 30-60-90 right triangles to solve problems and verify using algebraic and deductive proofs.	3.2
Apply the Sine, Cosine, and Tangent Ratio- use to solve real-world problems.	3.
Quadrilaterals	
Find Angle Measures In Polygons- use to solve problems and verify using algebraic and deductive proofs.	2.3a, 2.3b, 2.3c, 2.3d
Use Properties of Parallelograms- use to solve real-world problems.	2.3a, 2.3c
Show that a Quadrilateral is a Parallelogram.	2.3a, 2.3c
Properties of Rhombuses, Rectangles, and Squares- use to solve various problems.	2.3a, 2.3c
Use Properties of Trapezoids and Kites.	2.3a, 2.3c
Identify Special Quadrilaterals.	2.3a, 2.3c
Properties of Transformation	
Translate Figures- use to solve problems in coordinate geometry.	5.2b
Perform Reflections and Rotations- use to solve problems in coordinate geometry.	5.2b
Apply Compositions of Transformations.	5.2b
Properties of Circles	
Properties of Tangents- use to solve problems.	2.6a, 2.6b
Find Arc Measures.	2.6a, 2.6b
Apply Properties of Chords.	2.6a, 2.6b
Use Inscribed Angles and Polygons.	2.6a, 2.6b
Apply Other Angle Relationships in Circles.	2.6a, 2.6b
Find Segment Lengths in Circles.	2.6a, 2.6b
Write and Graph Equations of Circles.	5.2a
Measuring Length and Area	
Areas of Triangles and Parallelograms- use to determine unknown values and identify appropriate unit of measure.	2.3c, 2.3d
Areas of Trapezoids, Rhombuses, and Kites- use to determine unknown values and identify appropriate unit of measure.	2.6a, 2.6b
Perimeter and Area of Similar Figures.	2.6a, 2.6b
Circumference and Arc Length- use to determine unknown values and identify appropriate unit of measure.	2.6a, 2.6b
Areas of Circles and Sectors- use to determine unknown values and identify appropriate unit of measure.	2.6a, 2.6b

Areas of Regular Polygons- use to determine unknown values and identify appropriate unit of measure.	2.6a, 2.6b
Surface Area and Volume of Solids	
Explore Models- use model of a 30 figure from a 20 drawing; nets, blueprints, perspective drawings.	4.3
Explore Solids- identify, describe, and analyze polyhedral.	4.1a
Surface Area of Prisms and Cylinders- use to determine unknown values and correctly identify appropriate unit of measure.	4.1a, 4.1b
Surface Area of Pyramids and Cones- use to determine unknown values .and correctly identify appropriate unit of measure.	4.1a, 4.lb
Volume of Prisms and Cylinders- use to determine unknown values and correctly identify appropriate unit of measure.	4.1a, 4.lb
Volume of Pyramids and Cones- use to determine unknown values and correctly identify appropriate unit of measure.	4.1a, 4.lb
Surface Area and Volume of Spheres- use to determine unknown values and correctly identify appropriate unit of measure.	4.1a, 4.lb
Explore Similar Solids- use ratios to determine unknown values such as angles, side lengths, perimeter or circumference of a face, area of a face, and volume.	4.2