Geometry Syllabus, First Semester (correlation with STAAR/EOC)

Legend:

Example **3[R]-G.5(B)**

- 3, The reporting category
- [R], Either Readiness or Supporting
- G.5, The TEKS
- (B) Expectation

[P], indicates a prerequisite skill

Unit 1: Algebra review

Lesson 01: Solving linear equations and inequalities **[P]**

Lesson 02: Solving systems of two linear equations **[P]**

Lesson 03: Trinomial factoring **[P]**

Lesson 04: Special factoring formulas **[P]**
$a^2 - b^2$; $a^2 \pm 2ab + b^2$

Lesson 05: Solving quadratic equations **[P]**

Unit 1 review
Unit 1 test

Unit 2: Basic definitions & concepts (points, lines, and planes)

Lesson 01: Definitions & conventions **2[S]-G.4(A)**

Lesson 02: Postulates concerning points, lines, & planes **1[R]-G.2(B)**
Practice with points, lines, and planes

Lesson 03: Distance on a number line **1[R]-G.2(B); 3[S]-G.7(A)**
Length of a line segment **3[R]-G.7(C)**

Lesson 04: Midpoint of a line segment (midpoint formula) **1[R]-G.2(B); 3[S]-G.7(A); 3[R]-G.7(C)**

Lesson 05: Line segment bisectors **1[R]-G.2(B); 3[S]-G.7(A); 3[R]-G.7(C)**

Unit 2 review
Unit 2 test

Unit 3: Angles

Lesson 01: Angle fundamentals **1[R]-G.2(B); 2[R]-G.5(A,B)**

Lesson 02: Special angle pairs, perpendicular lines **1[R]-G.2(B); 2[R]-G.5(A,B)**
Supplementary and complementary angles **4[S]-G.9(A)**

Lesson 03: Angle word problems **1[R]-G.2(B); 2[S]-G.4(A)**

Lesson 04: Construction fundamentals **1[S]-G.2(A)**
Copying segments & angles; bisecting segments & angles

Cumulative review, unit 3
Unit 3 test

Unit 4: Parallel lines & planes and transversals

Lesson 01: Parallel lines & planes fundamentals **4[S]-G.9(A)**
Definitions of transversal angle pairs

Lesson 02: Parallel lines cut by a transversal. **2[R]-G.5(A); 4[S]-G.9(A)**

Lesson 03: More practice with parallel lines and transversals
Same-side angles **2[R]-G.5(A); 4[S]-G.9(A)**

Lesson 04: Parallel line construction **1[S]-G.2(A); 4[S]-G.9(A)**
Parallel lines: multiple variable problems

Cumulative review
Unit 4 review
Unit 4 test

Unit 5: Triangles & other Polygons

Lesson 01: Triangle fundamentals
Sum of the interior angles (180^{o}) **4[S]-G.9(B)**

Lesson 02: Triangle inequalities
Constructing a triangle **1[S]-G.2(B)**

Lesson 03: Polygons (interior angles) **4[S]-G.9(B)**

Lesson 04: Exterior angles of a polygon **4[S]-G.9(B)**

Cumulative review
Unit 5 review
Unit 5 test

Unit 6: Quadrilaterals
Parallelograms & Trapezoids

Lesson 1: Parallelogram fundamentals **1[R]-G.2(B); 4[S]-G.9(B)**

Lesson 2: Rectangles **1[R]-G.2(B); 4[S]-G.9(B)**

Lesson 3: Rhombi & squares **1[R]-G.2(B); 4[S]-G.9(B)**

Lesson 4: Trapezoids **1[R]-G.2(B); 4[S]-G.9(B)**

Cumulative review
Unit 6 review
Unit 6 test

Unit 7: Right triangles
Trigonometric ratios (sine, cosine, & tangent)

Lesson 1: The Pythagorean Theorem **2[R]-G.5(D); 4[R]-G.8(C)**

Lesson 2: Pythagorean triples **2[R]-G.5(D); 4[R]-G.8(C)**
Converse of the Pythagorean Theorem **2[R]-G.5(A,B); 4[R]-G.8(C)**

Lesson 3: A special triangle (45-45-90) **2[R]-G.5(D)**
Introduction to trig ratios

Lesson 4: Another special triangle (30-60-90) **2[R]-G.5(D)**

Lesson 5: Trig ratios in right-triangles **2[R]-G.5(D)**
Word problems using trig **2[S]-G.4(A)**

Lesson 6: Solutions of non-right-triangles
Sine Law, Cosine Law, and Area Formula

Cumulative review
Unit 7 review
Unit 7 test

Unit 8: Ratios, Proportional Parts
Similar Polygons, Dilations

Lesson 1: Practice with ratios and proportions
Associated word problems **1[R]-G.2(B); 2[S]-G.4(A)**

Lesson 2: Similar polygons **1[R]-G.2(B); 2[R]-G.5(A,B); 5[S]-G.11(A,B,C)**

Lesson 3: Similar triangles **1[R]-G.2(B); 2[R]-G.5(A,B); 5[S]-G.11(A,B,C)**
AA, SAS, & SSS similarity

Lesson 4: Dilations **3[S]-G.7(A); 5[S]-G.11(A, B)**

Lesson 5: Indirect measurement word problems **2[R]-G.5(A,B); 5[S]-G.11(A,B,C)**

Lesson 6: Proportional parts produced by parallel lines **5[S]-G.11(A,B,C)**

Lesson 7: More parallel lines and proportional segments **5[S]-G.11(A,B,C)**
Line joining midpoints of triangle sides

Cumulative review
Unit 8 review
Unit 8 test

Unit 9: Area and perimeter

Lesson 1: Rectangle area, perimeter, and diagonal **4[R]-G.8(A)**

Lesson 2. Parallelogram area and perimeter **4[R]-G.8(A)**

Lesson 3: Triangle area and perimeter **4[R]-G.8(A)**

Lesson 4: Rhombus area and perimeter **4[R]-G.8(A)**

Lesson 5: Trapezoid area and perimeter **4[R]-G.8(A)**

Cumulative review
Unit 9 review
Unit 9 test

Semester summary

Semester review
Semester test

In-depth Topics

Topic A: Sign rules **[P]**

Topic B: Derivation of the quadratic formula **[P]**

Topic C: Conic section applications and equation derivations **3[S]-G.6(A)**

Topic D: Euclidean/non-Euclidean geometry **1[S]-G.1(B,C)**

Topic E: Constructions **1[S]-G.2(A)**

Topic F: Exterior Angle Sum Theorem **1[R]-G.2(B)**

Topic G: Interior Angle Sum Theorem **1[R]-G.2(B)**

Topic H: Derivation of the Sine Law

Topic I: Derivation of the Cosine Law

Topic J: Derivation of a triangle area formula **4[R]-G.8(A)**

Topic K: Analytic Geometry and the use of equations in geometry **1[R]-G.2(B); 3[S]-G.7(A); 3[R]-G.7(B,C)**

Topic L: Density and measurement system conversions **4[S]-G.8(F)**

Topic M: Deductive and inductive reasoning **1[S]-G.3(D,E)**

Topic N: Area of regular polygons by apothem-perimeter **1[R]-G.2(B); 4[R]-G.8(A)**

Topic O: Tessellations **2[R]-G.5(C)**

Topic P: Fractals **2[R]-G.5(C)**