GEOMETRY — 8-MONTH SYLLABUS

2 Classes per Week • 8 Months • Approximately 64 Classes

Course Length	8 Months
Class Frequency	2 classes per week
Approx. Total	64 classes (8 months × 8 weeks)
Course Level	High School Geometry
Focus	Concepts • Proof • Problem Solving • Applications • Review

MONTH 1 • Geometry Foundations & Reasoning

• Week 1 — Class 1: Points, lines, planes, segments and rays. | Class 2: Geometric notation, intersections and basic constructions.

• Week 2 — Class 1: Distance and midpoint. | Class 2: Segment addition and coordinate geometry.

• Week 3 — Class 1: Angles, angle measurement and classification. | Class 2: Complementary, supplementary, vertical and adjacent angles.

• Week 4 — Class 1: Inductive and deductive reasoning. | Class 2: Conditional statements, converse, inverse and contrapositive; review.

MONTH 2 • Proofs, Parallel & Perpendicular Lines

• Week 5 — Class 1: Properties of equality and congruence. | Class 2: Algebraic proofs.

• Week 6 — Class 1: Two-column proofs. | Class 2: Paragraph proofs and geometric justification.

• Week 7 — Class 1: Parallel lines and transversals. | Class 2: Corresponding, alternate and consecutive interior angles.

• Week 8 — Class 1: Proving lines parallel. | Class 2: Perpendicular lines, slopes and coordinate applications; Unit 2 assessment.

MONTH 3 • Transformations & Congruent Triangles

• Week 9 — Class 1: Translations. | Class 2: Reflections and symmetry.

• Week 10 — Class 1: Rotations. | Class 2: Composition of transformations.

• Week 11 — Class 1: Triangle classification and congruence. | Class 2: SSS and SAS.

• Week 12 — Class 1: ASA, AAS and HL. | Class 2: CPCTC and congruence proofs; Unit assessment.

MONTH 4 • Triangle Relationships & Quadrilaterals

• Week 13 — Class 1: Isosceles and equilateral triangle theorems. | Class 2: Triangle inequalities and exterior angles.

• Week 14 — Class 1: Midsegment theorem. | Class 2: Perpendicular and angle bisectors.

• Week 15 — Class 1: Polygon angle sums. | Class 2: Parallelograms and their properties.

• Week 16 — Class 1: Rectangles, rhombi and squares. | Class 2: Trapezoids and kites; Unit review/test.

MONTH 5 • Similarity & Proportional Reasoning

• Week 17 — Class 1: Ratios and proportions. | Class 2: Similar polygons and scale factors.

• Week 18 — Class 1: AA similarity. | Class 2: SAS and SSS similarity.

• Week 19 — Class 1: Similarity in coordinate geometry. | Class 2: Indirect measurement and real-world applications.

• Week 20 — Class 1: Geometric mean and proportional segments. | Class 2: Similarity review and assessment.

MONTH 6 • Right Triangles & Trigonometry

• Week 21 — Class 1: Pythagorean theorem. | Class 2: Converse and applications.

• Week 22 — Class 1: 45°–45°–90° triangles. | Class 2: 30°–60°–90° triangles.

• Week 23 — Class 1: Sine, cosine and tangent. | Class 2: Finding missing sides.

• Week 24 — Class 1: Finding missing angles. | Class 2: Real-world trigonometry, review and assessment.

MONTH 7 • Circles

• Week 25 — Class 1: Parts of a circle and central angles. | Class 2: Arc measure and arc length.

• Week 26 — Class 1: Chords and perpendicular bisectors. | Class 2: Inscribed angles and intercepted arcs.

• Week 27 — Class 1: Tangents and secants. | Class 2: Angles formed by chords, secants and tangents.

• Week 28 — Class 1: Segment relationships and circle equations. | Class 2: Circle applications and unit assessment.

MONTH 8 • Measurement, 3D Geometry & Final Review

• Week 29 — Class 1: Perimeter and area of polygons. | Class 2: Area of circles and composite figures.

• Week 30 — Class 1: Surface area of prisms and cylinders. | Class 2: Volume of prisms and cylinders.

• Week 31 — Class 1: Pyramids, cones and spheres. | Class 2: Composite 3D figures and applications.

• Week 32 — Class 1: Complete Geometry review and proof practice. | Class 2: Final assessment/project and error analysis.

Assessment & Class Structure

Component	Recommended Approach
Every Class	5–10 min warm-up/review • concept instruction • worked examples • guided practice • independent problems
Weekly	Short practice assignment or mastery check; corrections and feedback
Monthly	Unit quiz/test and targeted review
Mid-Course	Cumulative assessment after Month 4
Final Month	Comprehensive review + final exam/project + error analysis

Learning Outcomes

- Understand and apply fundamental geometric definitions, postulates and theorems.
- Construct clear geometric arguments and proofs using correct mathematical reasoning.
- Use coordinates, transformations and algebra to verify geometric relationships.
- Apply congruence and similarity to solve multi-step problems.
- Use the Pythagorean theorem and trigonometric ratios in right-triangle problems.
- Analyze circles, polygons, area, surface area and volume in mathematical and real-world contexts.
- Communicate solutions using diagrams, equations, notation and written explanations.

Pacing Note

This plan is designed specifically for two classes per week over eight months. Each week contains two focused lessons, with review and assessment built into the sequence. The exact number of weeks may be adjusted for holidays, student pace, school calendar and individual learning needs.