

# GEOMETRY – Unit Plan and Syllabus

This is the course of study for Geometry. This course should take about one school year to complete, but some students may take more time or less time to do so. Each number represents one class period (or one quiz) and the skills that students should master – as demonstrated in class or on a quiz. Students will have “completed” a topic when they have demonstrated said mastery. Students will have passed Geometry when they have completed everything on this list.

Date Completed, Grade

## Unit I – Tools of Geometry

1. Use inductive reasoning to recognize patterns. \_\_\_\_\_
2. Identify points, lines, planes, etc. Use midpoint formula. \_\_\_\_\_
3. Calculate perimeter, circumference, area, surface area, and volume. \_\_\_\_\_
4. Practice and review. \_\_\_\_\_
5. Take the Unit I test. \_\_\_\_\_

## Unit II – Reasoning and Proof

6. Use logic: induction, deduction, reasoning, and proof. \_\_\_\_\_
7. Write statements as conditional, converse, inverse, and contra positive. \_\_\_\_\_
8. Use logic to reach conclusions and solve problems. \_\_\_\_\_
9. Use reasoning and proof to answer geometric questions. \_\_\_\_\_
10. Practice and review. \_\_\_\_\_
11. Take the Unit II test. \_\_\_\_\_

## Unit III – Parallel and Perpendicular Lines

12. Understand and use angle postulates. \_\_\_\_\_
13. Use geometric proofs, theorems and postulates. \_\_\_\_\_
14. Prove lines to be parallel or perpendicular. \_\_\_\_\_
15. Identify types of triangles. Use triangle sum theorems. \_\_\_\_\_
16. Graph shapes on a coordinate plane. \_\_\_\_\_
17. Practice and review. \_\_\_\_\_
18. Take the Unit III test. \_\_\_\_\_

## Unit IV – Congruent Triangles

19. Prove that two polygons are congruent. \_\_\_\_\_
20. Prove triangles to be congruent using SAS, ASA, AAS, and SSS. \_\_\_\_\_
21. Construct proofs with “congruent parts of congruent triangles.” \_\_\_\_\_
22. Solve word problems with reasoning and proof. \_\_\_\_\_
23. Practice and review. \_\_\_\_\_
24. Take the Unit IV test. \_\_\_\_\_

Unit V – Relationships within Triangles

- 25. Identify mid segments in triangles.
- 26. Find perpendicular bisectors in triangles.
- 27. Solve word problems involving triangles.
- 28. Practice and review.
- 29. Take the Unit V test.

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Unit VI – Quadrilaterals

- 30. Know the key qualities of various quadrilaterals.
- 31. Determine angle measure and side length.
- 32. Prove that a figure is a parallelogram, square, rectangle, or rhombus.
- 33. Find side and angle measures for trapezoids and kites.
- 34. Construct figures on a coordinate plane.
- 35. Construct proofs with coordinate geometry.
- 36. Practice and review.
- 37. Take the Unit VI test.

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Unit VII – Area

- 38. Calculate area of parallelograms and triangles.
- 39. Use Pythagorean Theorem to find measures of sides.
- 40. Become familiar with special right triangles.
- 41. Find arc lengths on a circle.
- 42. Find areas of circles and sectors of circles.
- 43. Calculate geometric probability.
- 44. Practice and review.
- 45. Take the Unit VII test.

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Unit VIII – Similarity

- 46. Solve ratios and proportions.
- 47. Use ratios and proportions to compare similar figures.
- 48. Use theorems to prove pairs of triangles to be similar.
- 49. Find the area and perimeter of similar figures.
- 50. Practice and review.
- 51. Take the Unit VIII test.

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52. Final Exam/Project/Make-Up Work

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Unit IX – Trigonometry

- 53. Know what trigonometry is.
- 54. [Trigonometry units are in the Pre-Calculus syllabus.]

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