



Course Curriculum Outline

Course Name: **Geometry**

Grade Level(s): **9-12**

Course Description: The focus of this course is primarily on geometric concepts. This course is a requirement to enter college and many technical school programs. This course applies the concepts learned in Algebra to the study of properties and measurements of figures in 2 and 3 dimensions. Topics include parallel and perpendicular lines, polygons, area and volume, similarity, congruence, right triangle trigonometry, and circles. It also emphasizes using logic and writing proofs to justify conjectures.

Wisconsin State Standards

Learning Priority (Essential Standard)	Essential Questions
Congruence	<ul style="list-style-type: none">• I can experiment with transformations in the plane.• I understand congruence in terms of rigid motions.• I can prove geometric theorems.• I can make geometric constructions.
Similarity, Right Triangles and Trigonometry	<ul style="list-style-type: none">• I understand similarity in terms of similarity transformations.• I can prove theorems involving similarity.• I can define trigonometric ratios and solve problems involving right triangles.• I can apply trigonometry to general triangles.
Circles	<ul style="list-style-type: none">• I can understand and apply theorems about circles.• I can find arc lengths and areas of sectors of circles.
Expressing Geometric Properties with Equations	<ul style="list-style-type: none">• I can translate between the geometric description and the equation for a conic section.• I can use coordinates to prove simple geometric theorems algebraically.



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Geometric Measurement and Dimension	<ul style="list-style-type: none">• I can explain volume formulas and use them to solve problems.• I can visualize relationships between two-dimensional and three-dimensional objects.
Modeling with Geometry	<ul style="list-style-type: none">• I can apply geometric concepts in modeling situations

Textbook/Other resources:

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments, and appreciate and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.