

Sanborn Regional High School
Course Competencies Syllabus



Course Title: Geometry	Level(s): Honors and CP
Course Description: <p>The goal of the geometry program is to teach students to reason mathematically (using deductive and inductive reasoning) and inspire an awareness of the geometric world in which we live. This course demonstrates the usefulness and vitality of geometry. A large portion of this class is known as “formal” geometry or the writing of proofs, based on the theorems, postulates, and axioms that become known. Strategies include analysis, interpreting, recall and transfer, applying concepts, classification, spatial perception, and synthesis. Topics include points, lines, planes, angles, triangle (congruency, similarity, area), polygons, transformations, right triangles, trigonometry, circles, planar measurements and spatial measurements, both area and volume.</p>	
Text/Major Resources: Geometry by Larson, Boswell, Kanold, and Stiff (McDougal Littell 2004). Geometer’s Sketchpad Software	
Course Content Competencies: <ol style="list-style-type: none">1. Students will understand geometric reasoning, proof, and representations<ul style="list-style-type: none">• Makes conjectures, defends conjectures, constructs geometric arguments, uses geometric properties, and/or uses theorems to solve problems within mathematics or across other disciplines involving:<ul style="list-style-type: none">○ Angles○ Lines○ Polygons○ Circles○ Right triangle ratios (sine, cosine, tangent)• Demonstrates conceptual understanding of spatial reasoning and visualization by<ul style="list-style-type: none">○ Sketching or using dynamic geometric software to generate three-dimensional objects from two-dimensional perspectives○ Sketching or using dynamic geometric software to generate two-dimensional perspectives from three-dimensional objects○ Solving problems related to spatial reasoning and visualization○ Creating and justifying constructions with a compass and straightedge or using dynamic geometric software2. Students will understand congruence and rigid transformations<ul style="list-style-type: none">• Solves problems using concepts of congruency within mathematics or across other disciplines• Solves problems by applying the concepts of congruency to:<ul style="list-style-type: none">○ Reflections○ Translations○ Rotations3. Students will understand similarity and indirect measurement<ul style="list-style-type: none">• Applies concepts of similarity by solving problems within mathematics or across other disciplines• Solves problems by applying the concepts of similarity in order to:<ul style="list-style-type: none">○ Define the trigonometric functions as ratios of sides of right triangles○ Use the ratios of the sides of special right triangles (30°-60°-90° and 45°-45°-90°) to determine the sine, cosine and tangent of 30°, 45°, and 60°○ Solve application problems involving similarity and trigonometric functions4. Students will understand direct measurement on and off the coordinate plane<ul style="list-style-type: none">• Solves problems within mathematics or across disciplines involving<ul style="list-style-type: none">○ Perimeter, circumference, or area of two-dimensional figures (including composite figures)○ Surface area or volume of three-dimensional figures (including composite figures).• Uses units of measure<ul style="list-style-type: none">○ Knows how to use measures appropriately and consistently when solving problems. This includes:<ul style="list-style-type: none">▪ Choosing the appropriate unit of measure▪ Making correct measures▪ Making correct calculations involving units of measure○ Can make conversions within or across systems of measure○ Can make decisions concerning an appropriate degree of accuracy in problem situations involving	

measurement

- Solves problems on and off the coordinate plane involving:
 - Distance
 - Midpoint
 - Perpendicular and parallel lines
 - Slope

Instructional Practices:

Lecture, Demonstrations, Research, Independent Learner, Reading, Writing, Education By Design, Essential Questions, Class Discussions, Cooperative Learning, Investigations, Constructed Response Questions, Test-Taking Strategies, Differentiated Instruction, and Other Practices as Needed

Assessment Strategies:

Class Participation, Portfolios/Notebooks, Quizzes & Tests, Presentations, Projects & Labs, Homework & Classwork, Midterm & Final Exam, NWEA Map Goal Area Assessments, NECAP, Reading and Writing Assignments, Writing Portfolios & Journals, and Other Strategies as Needed

Sanborn Regional High School Mission Statement

The mission of the Sanborn Regional High School community is to provide a safe, supportive, and respectful learning environment where every student is empowered to become a responsible citizen with the skills, knowledge, values, and ambition to contribute with pride to society.

- Responsibility*** Inspire students to take ownership of their learning and hold themselves accountable for their performance.
Ambition Challenge all students to succeed in one's goals and dreams in academic, social, and civic endeavors.
Pride Nurture respect and dignity in every student as they positively contribute to their school community and beyond.

Academic Expectations

- Develop a proficiency in the communication skills of reading, writing, speaking, viewing and listening
- Demonstrate a proficiency in problem solving skills and critical thinking skills
- Demonstrate knowledge and application of technology skills

GRADEQUICK: Parents and students may access grades and course information on EDLINE:
<https://www.edline.net/index.page>. ***Student grades are updated every two weeks.***