

## Course Syllabus

### Text:

### Geometry B Syllabus

Prentice Hall Geometry (2004) by Bass, Charles, Johnson, and Kennedy

Student Text ISBN: [0130625604](#)

Enhanced online edition ISBN: [0131157116](#)

Other Required Learning Materials:  
The Geometer's Sketchpad, v.4, Key Curriculum Press

ISBN: 1-55953-528-8

A folder or similar method of organizing work

Ruled and graph paper and pencils

A compass and straightedge

A calculator or graphing calculator

### Course Description:

Geometry B is the second semester of a Geometry course. During this eight-unit course students will become familiar with perimeter, area, surface area, and volume; solving right triangles; similar triangles; transformations; circle theorems; and, the effect that change has on perimeter, area, and volume measurements.

### Learning Outcomes:

At the end of this course students will be able to:

1. Construct and judge the validity of a logical argument and give counterexamples to disprove a statement.
2. Prove basic theorems involving similarity.  
Prove that triangles are similar.
3. Know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.
4. Compute the volumes and surface areas of prisms, pyramids, cylinders, cones, and spheres; and students commit to memory the formulas for prisms, pyramids, and cylinders.
5. Compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.
6. Determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.  
Prove the Pythagorean theorem.  
Use the Pythagorean theorem to determine distance and find missing lengths of sides of right

triangles.

7. Know the definitions of the basic trigonometric functions defined by the angles of a right triangle. They also know and are able to use elementary relationships between them. For example,  $\tan(x) = \sin(x)/\cos(x)$ ,  $(\sin(x))^2 + (\cos(x))^2 = 1$ .

8. Use trigonometric functions to solve for an unknown length of a side of a right triangle, given an angle and a length of a side.

9. Know and are able to use angle and side relationships in problems with special right triangles, such as  $30^\circ$ ,  $60^\circ$ , and  $90^\circ$  triangles and  $45^\circ$ ,  $45^\circ$ , and  $90^\circ$  triangles.

10. Prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.

11. Know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.

### Description of Course Structure

Geometry B is a course that will help the learner develop problem solving and reasoning abilities. This course is **student centered**, which means that the student is responsible for generating knowledge about geometry via textbook and online readings, synchronous and asynchronous discussion with other students and the teacher, interaction with online tutorials and animations, completion of weekly assignments, and the development of a semester project.

Your teacher will act as a facilitator, an events planner, and a resource advisor. Always remember, you are the learner here! You are the one who needs to actively construct and acquire knowledge and this can be achieved by participation and completion of all readings and activities. This course requires your **ACTIVE** participation!

Both formal and informal assessments methods will be used in the course. Informal assessment will include an evaluation of the quality and timeliness of participation in class activities. Formal assessment will involve multiple-choice tests and weekly assignments. A final exam will be given at the end of week 8.

### Activity Guide

Week	Topics	Activities	Text Chapter
1	Introduction to Course and Area	Course Orientation Diagnostic Exam Required Reading (Text, Check Understanding, Additional Examples) Discussions (Prompts and Project) Chat Geometer's Sketchpad Activities (2) Interactivities (7.1, 7.2)	7

		Start Project	
2	Area	<p>Required Reading (Text, Check Understanding, Additional Examples)</p> <p>Discussions (Prompts and Project)</p> <p>Chat</p> <p>Geometer's Sketchpad Activities (4)</p> <p>Interactivities (7.8)</p> <p>Continue working on project</p> <p>Chapter 7 Test</p>	7
3	Similarity	<p>Required Reading (Text, Check Understanding, Additional Examples)</p> <p>Discussions (Prompts and Project)</p> <p>Chat</p> <p>Geometer's Sketchpad Activities (4)</p> <p>Interactivities (8.2, 8.4, 8.6)</p> <p>Continue working on project</p> <p>Chapter 8 Test</p>	8
4	Right Triangle Trigonometry	<p>Required Reading (Text, Check Understanding, Additional Examples)</p> <p>Discussions (Prompts and Project)</p> <p>Chat</p> <p>Interactivities (9.1, 9.2, 9.4)</p> <p>Continue working on project</p> <p>Chapter 9 Test</p>	9
5	Surface Area and Volume	<p>Required Reading (Text, Check Understanding, Additional Examples)</p> <p>Discussions (Prompts and Project)</p> <p>Chat</p> <p>Interactivities (10.2, 10.5, 10.6)</p>	10

		Continue working on project	
		Chapter 10 Test	
6	Circles	Required Reading (Text, Check Understanding, Additional Examples)  Discussions (Prompts and Project)  Chat  Geometer's Sketchpad Activities (2)  Interactivities (11.2, 11.3, 11.5)  Continue working on project	11
		Chapter 11 Test	
7	Transformations	Required Reading (Text, Check Understanding, Additional Examples)  Discussions (Prompts and Project)  Chat  Geometer's Sketchpad Activities (8)  Interactivities (12.1, 12.2, 12.7)  Continue working on project	12
		Chapter 12 Test	
8	Completing the Course	Discussions (Prompts and Project)  Chat  Final Exam  Finish and submit Project	

### Time Management

Since this full-semester course is completed in eight weeks, you should expect to spend 12-15 hours per week on the readings, discussion (synchronous and asynchronous), text assignments, Geometer's Sketchpad assignments, Interactivities, tests or exams, and your project. The course will cover the material in chapters 7-9 by the end of week 4 and the material in chapters 10-12 by the end of the course. KEEP A REGULAR SCHEDULE!

### Assessment

Students will be graded on the following criteria:

- Unit Discussion Forums - 5 points each

- Project Discussion Forums - 5 points each
- Assignments - 5 points each
- Chapter Tests - 40 points each
- Final Exam - 100 points
- Project - 100 points

Grading Scale

Letter Grade	Percentage Earned
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	59% and lower

The curriculum is based on the California State Board of Education Mathematics Content Standards, which can be viewed at: <http://www.cde.ca.gov/be/st/ss/mthgeometry.asp> and the National Council of Teachers of Mathematics Standards for School Mathematics, which are listed here:

1. Number and Operations

2. Algebra

3. Geometry

4. Measurement

5. Data Analysis and Probability

6. Problem Solving

7. Reasoning and Proof

8. Communication

9. Connections

10. Representation.

**NUVHS  
Expected  
Schoolwide  
Learning  
Results  
(ESLRs)**

**NUVHS Expected Schoolwide Learning Results (ESLRs):**

It is anticipated that NUVHS students will be:

**Engaged Learners**

1. Demonstrate self-directed learning skills such as time management, and personal responsibility through the completion of course requirements
2. Develop an understanding of their own preferred learning styles to enhance their overall academic potential
3. Incorporate effective and relevant internet and multimedia resources in their learning process to broaden their knowledge base

**Critical Thinkers**

1. Effectively analyze and articulate sound opinions on a variety of complex concepts
2. Illustrate a variety of problem-solving strategies that strengthen college preparation and workforce readiness
3. Formulate a framework for applying a variety of technology and internet-based research to enhance information literacy and collaborative thinking



### **Effective Communicators**

1. Demonstrate awareness and sensitivity to tone and voice in multiple forms of communication
2. Express concepts and ideas in a variety of forms
3. Enhance communication skills through the use of media rich or other technology resources

### **Global Citizens**

1. Appreciate the value of diversity
  2. Understand the range of local and international issues facing today's global community
  3. Demonstrate awareness of the importance of cultural sensitivity and social responsibility in the 21st century
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