



Basic Geometry B: Full Course Summary

Note: If this course is intended to be a Credit Recovery course, the following assumptions apply:

- This course is a core course at the “Basic” level in Connections Academy’s system, which titles courses as Basic, Standard, Honors, or Advanced Placement (AP).
- The student has previously taken this or a similar course but did not achieve a passing grade based on his/her school’s grading scale.
- This course will be modified by the teacher in order to skip over areas in which the student shows understanding of the material, leaving more time to focus on gaps in the student’s knowledge or understanding.
- Because Credit Recovery courses will be shortened and/or modified based on individual student needs, these courses are generally **not** appropriate for students who have **not** previously taken this or a similar course, nor for students wishing to accelerate their high school studies.

If a student wishes to take this course for the first time he/she will be expected to cover all material in the course without the above-noted modifications. Students must discuss this option with the NaCA Admission and Support Representative prior to enrolling in the course for the first time.

Course Summary

This is the second of two courses that comprise Geometry. In this course, the student will continue to build upon knowledge gleaned from the previous course. The student will learn to find area, surface area, and volume, and study the concept of similarity as it relates to various figures. Then the student will focus on right triangles and the trigonometric ratios. Next the student will study circles and the unique nature of those figures. Finally, the student will study transformations.

Connections Academy’s Basic Geometry B consists of varied curriculum that provides students the opportunity to develop an understanding of key concepts through expanded lessons and differentiated assessments.

Prerequisites: Algebra 1

Unit 1: Area

In this unit, you will find the area formulas of various figures and learn how area relates in different figures. You will use the 30° - 60° - 90° triangles as well as the 45° - 45° - 90° triangles to explore new triangle relationships. You will also use the Pythagorean Theorem to find areas of triangles, quadrilaterals, and regular polygons.

Lessons

1. Areas of Parallelograms and Triangles: 1
2. Areas of Parallelograms and Triangles: 2
3. Pythagorean Theorem and its Converse: 1
4. Pythagorean Theorem and its Converse: 2
5. Special Right Triangles: 1
6. Special Right Triangles: 2
7. Areas of Trapezoids, Rhombuses, and Kites: 1
8. Areas of Trapezoids, Rhombuses, and Kites: 2
9. Areas of Regular Polygons
10. Circles and Arcs: 1
11. Circles and Arcs: 2
12. Areas of Circles and Sectors
13. Review

14. Unit Test

Unit 2: Similarity

In this unit, you will learn about similar polygons and how some polygons, although they look similar, are not the same size. By using the similar polygons definitions you will learn how to prove triangles similar. Finally, you will take a look at perimeters and angles and determine how they relate to one another.

Lessons

1. Ratios and Proportions
2. Similar Polygons: 1
3. Similar Polygons: 2
4. Proving Triangles Similar: 1
5. Proving Triangles Similar: 2
6. Similarity in Right Triangles
7. Proportions in Triangles: 1
8. Proportions in Triangles: 2
9. Perimeters and Areas of Similar Figures
10. Review
11. Unit Test

Unit 3: Right Triangle Trigonometry

In this unit, the sine, cosine, and tangent trigonometric ratios will be introduced and used extensively in order to develop a new way of thinking about geometry and right triangles. Finally, you will examine ratios in order to find missing variables, such as lengths and angle measurements.

Lessons

1. The Tangent Ratio
2. Sine and Cosine Ratios
3. Angles of Elevation and Depression
4. Review
5. Unit Test

Unit 4: Surface Area and Volume

In this unit, you will examine nets that describe various solid shapes. Using the nets you will notice the commonalities between two and three-dimensional figures. With the nets you will be able to create space figures and drawing that will help you measure lengths and areas of solid figures. The most important skill you will develop during this unit is the ability to find the surface areas and volumes of various figures.

Lessons

1. Space Figures and Nets
2. Space Figures and Drawings: 1
3. Space Figures and Drawings: 2
4. Surface Areas of Prisms and Cylinders: 1
5. Surface Areas of Prisms and Cylinders: 2
6. Surface Areas of Pyramids and Cones: 1
7. Surface Areas of Pyramids and Cones: 2
8. Volumes of Prisms and Cylinders: 1

9. Volumes of Prisms and Cylinders: 2
10. Volumes of Pyramids and Cones: 1
11. Volumes of Pyramids and Cones: 2
12. Surface Areas and Volumes of Spheres
13. Areas and Volumes of Similar Solids
14. Review
15. Unit Test

Unit 5: Circles

In this unit, you will expand the skills you have acquired in this course regarding circles. You will find tangent lines, chords and arcs, inscribed angles, and angle measures and segment lines.

Lessons

1. Tangent Lines: 1
2. Tangent Lines: 2
3. Chords and Arcs: 1
4. Chords and Arcs: 2
5. Inscribed Angles: 1
6. Inscribed Angles: 2
7. Angle Measures and Segment Lengths: 1
8. Angle Measures and Segment Lengths: 2
9. Circles in the Coordinate Plane: 1
10. Circles in the Coordinate Plane: 2
11. Circles Unit Review
12. Circles Unit Test

Unit 6: Transformations

In this unit, you will conclude your study of geometry. At this point, you will have a solid understanding of the different ways geometry can be applied to real-life situations. You will examine the geometric plane and the different transformations on the plane. Finally, you will identify and perform reflections, translations, and rotations.

Lessons

1. Reflections: 1
2. Reflections: 2
3. Translations: 1
4. Translations: 2
5. Rotations
6. Symmetry
7. Tessellations: 1
8. Tessellations: 2
9. Review
10. Unit Test

Unit 7: Final

In this unit, you will have the opportunity to prepare for and take the final exam. Since this is a comprehensive exam, it may be helpful to organize your notes in the order of the course outline before you begin to review. Using the test-taking strategies that you have previously learned can help you be successful with both objective and essay questions.

Lessons

1. Basic Geometry B Final Review
2. Basic Geometry B Final

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