

### **Course Description**

Geometry helps students to develop problem-solving skills using both inductive and deductive reasoning. Students learn to make conjectures, draw conclusions, and ask purposeful questions. Students will learn to think analytically, and reason mathematically. Students learn to use the language of Geometry to communicate about mathematics. The application of skills in solving real-world problems is integrated into the major units of study. The use of TI-84 graphing calculators and web-based graphing calculators, such as GeoGebra, to facilitate problem solving and deepen understanding is an important part of the course of study.

### **Topics covered in the course**

Deductive and inductive reasoning  
Right Triangle Trigonometry  
Mathematical Proofs  
Properties of Triangles, Quadrilaterals and other Polygons  
Congruence of Plane Figures  
Similarity of Plane Figures  
Properties of Circles  
Area and perimeter of Plane Figures  
Volume and Surface Area of Solid Figures (if time allows)  
Introduction to Statistics and Probability (If time allows)

### **Overarching Goals of the course**

- To prepare students for future mathematics courses such as pre-calculus and physics.
- To help students develop mathematical skills to be successful on standardized tests, such as the SAT and ACT

### **Goals of the course**

- Describe figures such as points, lines, planes accurately; visualize and draw plane figures in a coordinate system; draw conclusions based on midpoints, angle bisectors, perpendicular bisectors and medians.
- Draw conclusions based on inductive and deductive reasoning; recognize different logic statements; determine the validity of logic statements; construct a logical argument based on

mathematical facts

- Determine the congruence of triangles based on various methods of proof; Using corresponding parts of congruent triangles to draw conclusions
- Examine properties of parallel and perpendicular lines and related angles.
- Extend ability to set up ratios and solve proportions; determine proportionality among segments based on similarity; solve for lengths indirectly using similar figures; use scale factors to create a scale diagram and scale model.
- Extend knowledge about right triangles and their unique properties; examine relationships among special right triangles; develop the ability to set up trigonometric ratios in right triangles; solve for lengths indirectly using trigonometric equations.
- Examine properties of quadrilaterals; investigate special types of quadrilaterals and their diagonals; investigate parallelograms and their properties.
- Examine properties of circles; investigate chords, tangents, diameters, radii; investigate sectors, arc length and semi circles.
- Determine area and perimeter for plane figures; develop formulas for area and perimeter algebraically; apply formulas for area and perimeter to real world problems.
- Determine volume and surface area for solid figures; develop formulas for volume and surface area algebraically; apply formulas for volume and surface area to real world problems.
- Study the basic laws of probability; Investigate data analysis methods through basic statistical approaches

### **Textbook and Supplemental Resources**

Holt McDougal Larson Geometry, 2012

CK-12 Geometry <https://www.ck12.org/c/geometry/>

GeoGebra <https://www.ck12.org/c/geometry/>

Khan Academy <https://www.khanacademy.org/math/geometry>

## Units

UNIT	TITLE
1A	Geometry Basics
1B	Right Triangle Trigonometry
2	Reasoning and Proof
3	Parallel and Perpendicular Lines
4	Congruent Triangles
5	Segments Related to Triangles
6	Similarity
7	Right Triangles
8	Quadrilaterals
10	Properties of Circles
11	Measurements of Plane Figures & Solids (if time allows)
12	Introduction to Statistics and Probability (if time allows)

### Grading:

Grading is based on a points system. Each assessment will have a specific point value. To determine the quarter grade, the ratio is simply: points earned / total points possible.

Grades are assigned according to the SBA grading scale- see SBA website for details.

*If we transition to a virtual learning environment, then class policies and grading may be adjusted as needed.*

### Teams Class Code:

Please join our class on Microsoft Teams using the following code:

Fiquuzd

### CK12 directions to join:

To join:

1. Go to [www.ck12.org](http://www.ck12.org).
2. Click join to create an account, or Sign in.
3. Click Classes.
4. Click Join a Class. (If you are a teacher, Click on the Plus Sign and choose 'Join a Class')
5. Enter code: 6niaf

You can also join the class by using this link: <https://www.ck12.org/join/group/?accessCode=6niaf>

## **Class Expectations:**

1. Be prepared for class each day. Have all necessary materials with you- notebook, pencil, pen, graphing calculator, charged laptop and a positive attitude 😊.
2. Maintain a positive learning environment- be respectful, communicative, kind and non-judgmental.
3. Be involved in class. Do not be passive in your learning. Participate in the learning experience.
4. All course work (weekly posts, assignments, syllabus, unit PowerPoints, etc.) will be posted on Microsoft Teams. Check our class Team frequently to keep on top of course content, assignments and upcoming assessments.
5. Absences. If you are absent the day of a test, you must make it up promptly. Please see me as soon as you return to school to schedule a make-up test. This class is fast paced, and it is important to stay current with the material. If you are absent from a class, you will need to complete the work missed. Check our class Team for all announcements and assignments.
6. All daily homework must be submitted through Teams by 11:59 pm. On Remote learning days, classwork will be posted by 8:00 am that day. All remote work must be submitted through Teams by 4:00 pm that same day. Please email me during my office hours if you have a question or need help with the coursework. My email is [mariabrown@stbasilacademy.org](mailto:mariabrown@stbasilacademy.org) and my office hours on Remote days are 7th period, 2:05 to 2:45 pm.

## **Contact information:**

1. Email: [mariabrown@stbasilacademy.org](mailto:mariabrown@stbasilacademy.org)
2. 2. Stop by my classroom at the end of the day. Room 12.

Please read the syllabus/expectations carefully, share it with your parent(s) and/or guardian(s), then submit the form on our class Microsoft Teams by Wednesday 9/16/20.