Geometry

**"I have never let my schooling interfere with my education” –Mark Twain**

**Essential understanding**

Geometry brings math to life with many real-life applications. Examples of mathematics in sports, engineering, and carpentry will be shown throughout this unit. Three key aspects of geometry that will be emphasized are measuring, reasoning, and applying geometrical ideas. As you explore the applications presented in this quarter, try to make connections between mathematics and the world around you.

**Overview**

**Lessons** will be given in class. You will have multiple mini lessons throughout the week. If you are struggling with a concept, it is your responsibility to review the lessons and ask questions. I will answer any questions you have during the lesson but after that we will follow the “three before me” principle. You must ask three of your peers before you ask me for help.

**Quizzes** will be given every Tuesday to assess what you have completed in the past five class periods. I will give you warning well in advance in the case of exceptions. If we have enough time, the day prior to quizzes will be review days, which will be your opportunity to clarify concepts or ask last minute questions.

**Materials**

**Math Journal:** I encourage use of your math journal during lessons and work time. I advise you to use your math journal to take notes during lessons and to work on assignments. Make sure it is neat and organized. Any and all important information from the lessons should be kept in this journal.

**Three Prong Folder/Binder:** For organizational purposes, please bring a folder or binder in to file supplementary material and worksheets which may be handed out over the course of this quarter. Quizzes and assessments will be handed out on loose paper, so it is extremely important to hold onto them for review!

**Calculator:** I recommend purchasing a scientific calculator for class period and tests. There will be a number of problem sets throughout the year which may require numerous calculations. Cell phones WILL NOT be permitted to be used as an alternative.

**Ruler/Compass/Protractor:** In addition to the standard lessons and problem sets, we will be deriving concepts with a straight edge and compass through a process called construction. This will empower you with a historical understanding of the development of Geometry.

**General Guidelines:**

**Problem Sets –** 0% of your grade is based on completing each homework assignment. **Homework Assignments Are Recommended Problems For Learning.** The completion of homework assignments will not impact your grade positively or negatively. It is recommended that you do the assignments or similar math problems in order for you to understand and retain the concepts. Use the work period to ask for help from your peers and teacher.

**Quizzes –** Quizzes make up 30% of your grade and you must complete each quiz prior or on the date it is scheduled. **Remember: you can always use your notebook on quizzes and exams.** You must make at least 80% to “pass” the quiz. If you do not pass a quiz, you may retest using a similar exam.

**Assessments–** Exams make up 30% of your grade. If you do not pass an exam, you may retest using a similar exam. You must have passed the quizzes prior to taking the corresponding exam. If you do not take the exam on the scheduled date (which is subject to change of course), it will be marked as missing in Power School.

**Final Assessment** – The final will make up 40% of your grade. You will not be able to make up the final exam. That is why it is important that you record the notes from the lessons and you do the suggested homework assignments. Practice the concepts in order to master them. **Your final project is also a part of your final assessment grade.**

**Lessons: Basics of Geometry, Reasoning and Proof, Perpendicular and Parallel Lines.**

**Big Ideas**

1. How to measure segments and angles.
2. Write a two-column proof and a paragraph proof.
3. Properties of parallel and perpendicular lines.

**Vocabulary**

1. Postulate
2. Point, Line, Plane
3. Theorem
4. Converse
5. Biconditional statement
6. Vertical angles
7. Transversal
8. Alternate angle

**Individual work**

**Guiding question 1:**

**How can you use geometry to solve a real-life problem, such as finding the distances along a diagonal city street?**

1. ***1.1 Patterns and Inductive Reasoning:***

\_\_\_\_\_ p.6 #’s 3 through 31 (odds)

\_\_\_\_\_ Mixed Review: p.9 #’s 53 through 71 (odds)

1. ***1.2 Points, Lines, and Planes:***

\_\_\_\_\_ p.13 #’s 1 through 51 (odds)

\_\_\_\_\_ Mixed Review: p. 16 #’s 77 through 91 (odds)

1. ***1.3 Segments and Their Measures:***

\_\_\_\_\_ p.21 #’s 3 through 39 (odds)

\_\_\_\_\_ Mixed Review: p.24 #’s 61 through 71 (odds)

**\_\_\_\_\_ QUIZ FOR LESSONS 1.1 - 1.3 (SEPTEMBER 7TH)**

1. ***1.4 Angles and Their Measures:***

\_\_\_\_\_ p.29 #’s 1 through 27 (odds)

\_\_\_\_\_ Mixed Review: p.32 #’s 61 through 79 (odds)

1. ***1.5 Segment and Angle Bisector:***

\_\_\_\_\_ p.38 #’s 5 through 49 (odds)

\_\_\_\_\_Mixed Review: p.42 #’s 61 through 71 (odds)

**\_\_\_\_\_ QUIZ FOR LESSONS 1.4 - 1.5 (SEPTEMBER 13TH)**

1. ***1.6 Angle Pair Relationship:***

\_\_\_\_\_ p. #’s 9 through 41 (odds)

\_\_\_\_\_ Mixed Review: p.50 #’s 61 through 75 (odds)

1. ***1.7 Introduction to Perimeter, Circumference, and Area:***

\_\_\_\_\_ p.55 #’s 3 through 35 (odds)

\_\_\_\_\_ Mixed Review: p.58 #’s 51 through 61 (odds)

**\_\_\_\_\_ QUIZ FOR LESSONS 1.6 – 1.7 (SEPTEMBER 20ST)**

1. **CHAPTER 1 ASSESSMENT (SEPTEMBER 21ST)**

**Guiding question 2:**

**How can you use biconditional statements to help analyze geographic relations?**

1. ***2.1 Conditional Statements:***

\_\_\_\_\_ p.75 #’s 1 through 37 (odds)

\_\_\_\_\_ Mixed Review p.78 #’s 61 through 73 (odds)

1. ***2.2 Definitions and Biconditional Statements:***

\_\_\_\_\_ p.82 #’s 3 through 37 (odds)

\_\_\_\_\_ Mixed Review p.85 #’s 59 through 67 (odds)

1. ***2.3 Deductive Reasoning:***

\_\_\_\_\_ p.91 #’s 1 through 41 (odds)

\_\_\_\_\_ Mixed Review p.94 #’s 57 through 63 (odds)

**\_\_\_\_\_ QUIZ FOR LESSONS 2.1 – 2.3 (SEPTEMBER 27TH)**

1. ***2.4 Reasoning with Properties from Algebra:***

\_\_\_\_\_ p.99 #’s 1 through 23 (odds)

\_\_\_\_\_ Mixed Review p.101 #’s 35 through 49 (odds)

1. ***2.5 Proving Statements about Segments:***

\_\_\_\_\_ p.104 #’s 1 through 21 (odds)

\_\_\_\_\_ Mixed Review p.107 #’s 29 through 35 (odds)

1. ***2.6 Proving Statements about Angles:***

\_\_\_\_\_ p.112 #’s 1 through 25 (odds)

\_\_\_\_\_ Mixed Review p.116 #’s 39 through 45 (odds)

**\_\_\_\_\_ QUIZ FOR LESSONS 2.4 – 2.6 (OCTOBER 4TH)**

1. **Chapter 2 ASSESSMENT (OCTOBER 6TH)**

**Guiding question 3:**

**How can properties of parallel lines help you predict the paths of boats sailing into the wind?**

1. ***3.1 Lines and Angles:***

\_\_\_\_\_ p.132 #’s 1 through 31 (odds)

\_\_\_\_\_ Mixed Review p.134 #’s 47 through 61 (odds)

1. ***3.2 Proof and Perpendicular Lines:***

\_\_\_\_\_ p.138 #’s 1 through 19 (odds)

\_\_\_\_\_ Mixed Review p.141 #’s 29 through 35 (odds)

1. ***3.3 Parallel Lines and Transversal:***

\_\_\_\_\_ p.146 #’s 1 through 27 (odds)

\_\_\_\_\_ Mixed Review p.149 #’s 33 through 43 (odds)

**\_\_\_\_\_ QUIZ FOR LESSONS 3.1 – 3.3 (OCTOBER 11TH)**

1. ***3.4 Proving Lines Are Parallel:***

\_\_\_\_\_ p.153 #’s 1 through 27 (odds)

\_\_\_\_\_ Mixed Review p.156 #’s 41 through 47 (odds)

1. ***3.5 Using Properties of Parallel Lines:***

\_\_\_\_\_ p.160 #’s 1 through 23 (odds)

\_\_\_\_\_ Mixed Review p.163 #’s 43 through 51 (odds)

1. ***3.6 Parallel Lines in the Coordinate Plane:***

\_\_\_\_\_ p.168 #’s 1 through 41 (odds)

\_\_\_\_\_ Mixed Review p.171 #’s 59 through 73 (odds)

1. ***3.7 Perpendicular Lines in the Coordinate Plane:***

\_\_\_\_\_ p.175 #’s 1 through 35 (odds)

\_\_\_\_\_ Mixed Review p.178 #’s 55 through 61 (odds)

**\_\_\_\_\_ QUIZ FOR LESSONS 3.6 – 3.7 (OCTOBER 18TH)**

1. **CHAPTER 3 ASSESSMENT (OCTOBER 21ST)**
2. **Reviews (Week of Oct.24TH)**

\_\_\_\_\_ Chapter 1, Chapter 2, and Chapter 3 review sheets

**FINAL ASSESSMENT Week of October 24th*:***

\_\_\_\_\_ Chapter 1, 2 and 3 Final

\_\_\_\_\_ Final Project

**Links:**

**Euclid The Father of Geometry**

https://www.khanacademy.org/math/geometry/intro\_euclid/v/euclid-as-the-father-of-geometry