

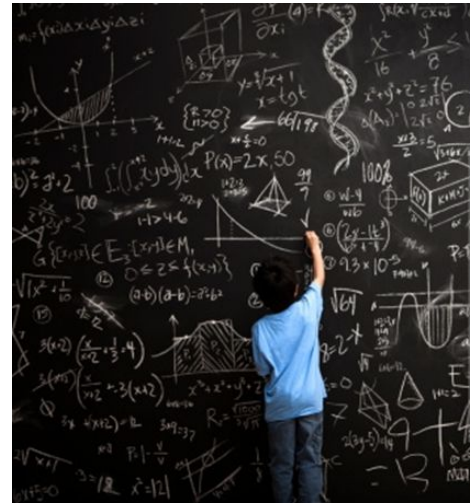
Name: \_\_\_\_\_

# Algebra II

## Unit 1: Investigations and Functions

“Do not worry about your difficulties in Mathematics. I can assure you mine are still greater.”

– Albert Einstein



### Overview:

Welcome back from summer break! I hope you had more than enough time to relax before we continue with the next step in our Mathematical journey: Algebra II. The topics and concepts we will investigate this year will give us a greater understanding of different types of functions and how they can be used to model a myriad of phenomena in the world around us. The math will become more complex as the year progresses, so it is important to keep up with the coursework!

In this first unit, we will cover the fundamental structures and routines that will become the norms of the classroom for this school year. We are going to take some time to familiarize ourselves with the layout of the online textbook as well as practice the expectations which lead to successful learning and mastery of mathematical skills. You will work with your table team to develop skills and techniques to use a graphing calculator, visually exploring functions and intersections. You will then find multiple ways to represent a geometric relationship, and ultimately will investigate linear (and some non-linear!) functions. By the end of this unit, you will have the tools to analyze functions and clearly communicate your reasoning to your classmates.

### Lessons:

#### Content Lesson Themes

\_\_\_ 1.1.1 Functions

\_\_\_ 1.1.2 Linear Equations

\_\_\_ 1.1.3: Domain and Range

\_\_\_ 1.1.4: Solving a Quadratic Equation

**Google Classroom Code: dq5fehr**

Assignments	Due Date (Beginning of Class)
<p><b>8/26-8/30:</b></p> <p><b>Learning Objective:</b> I will work with my partners to interpret functions through graphs and algebra.</p> <p>___ <b>1) Group Activity: <i>What is the Story?</i></b> - With your group mates, arrange function pieces to create a single continuous function to tell a story.</p> <p>___ <b>Lesson Notes - <i>Functions</i></b> - See google classroom for video. Take notes in your notebook for full credit.</p> <p>___ <b>2) Group Activity (1.1.1): <i>Function Machines</i></b> - Using “function machines,” work with your group mates to get a specific output by putting them in the order so that one machine’s output becomes the next machine’s input.</p> <p>___ <b>3) Individual Work (1.1.1):</b> 1-4 to 1-9. (These problems can be found at the bottom of 1.1.1)</p>	<p style="text-align: center;"><b>Fri, 8/30</b></p> <p style="text-align: center;"><b>Tues, 9/3</b></p>
<p><b>9/2-9/6:</b></p> <p><b>Learning Objective:</b> I will use a graphing calculator to sketch complete graphs of functions, identifying possible inputs, outputs, and key points for describing them.</p> <p>___ <b>4) Group Activity (1.1.2): <i>Desmos and Graphing Functions</i></b> - Use desmos to graph your assigned function. Answer the provided discussion questions and create a poster to present your findings to the class.</p> <p>___ <b>Lesson Notes - <i>Linear Equations</i></b> - See google classroom for video. Take notes in your notebook for full credit.</p> <p>___ <b>5) Individual Work (1.1.2)</b> - 1-12 to 1-21, 1-23</p>	<p style="text-align: center;"><b>Fri, 9/6</b></p> <p style="text-align: center;"><b>Fri, 9/6</b></p>
<p><b>9/9-9/13:</b></p> <p><b>Learning Objective:</b> I will find points of intersection of multiple functions through graph, table, and algebra and how these functions can be limited by their domain and range.</p> <p>___ <b>Lesson Notes - <i>Domain and Range</i></b> - See google classroom for video. Take notes in your notebook for full credit.</p> <p>___ <b>6) Group Problem Solving (1.1.3)</b> - 1-26, 1-27, 1-28, 1-29, 1-31, 1-32</p> <p>___ <b>7) Individual Work (1.1.3)</b> - 1-34 to 1-38</p> <p>___ <b>Lesson Notes - <i>Solving a Quadratic Equation</i></b> - See google classroom for video. Take notes in your notebook for full credit.</p> <p>___ <b>8) Group Problem Solving (1.1.4)</b> -</p> <p>___ <b>a.</b> With your group mates, complete questions 1-42, 1-43, and 1-44</p> <p>___ <b>b.</b> Complete the “Intersection Investigation” task (1-41)</p> <p>___ <b>9) Individual Work (1.1.4)</b> - 1-46 to 1-51</p>	<p style="text-align: center;"><b>Fri, 9/13</b></p> <p style="text-align: center;"><b>Fri, 9/13</b></p> <p style="text-align: center;"><b>Tues, 9/17</b></p> <p style="text-align: center;"><b>Tues, 9/17</b></p>