

# Math Models Parent Guide

## Unit 1 Concepts:

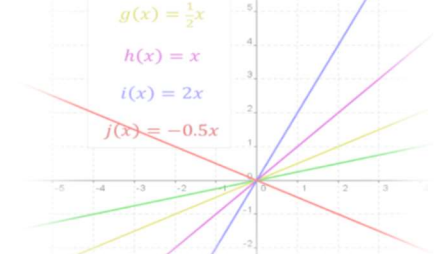
In this unit students will use multiple representations of linear functions to solve problems involving personal finance and social science. Slope, Properties of Parallel Lines, Linear Functions in Reference to Finance, Systems of Equations in Reference to Finance and Science.

## Learning Goals:

Students will be able to communicate data regarding wages, interest earned, and proportional growth. They will also investigate how to analyze and interpret data presented as a graph, table, equation, or verbal description.

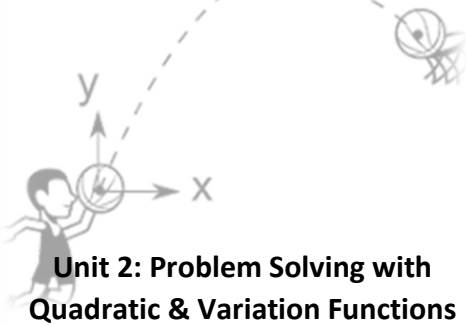
**Why?** – This unit will teach students to be knowledgeable consumers and producers in society.

## 1<sup>st</sup> Six Weeks



### Unit 1: Linear Function Models & Problem Solving

## 2<sup>nd</sup> Six Weeks



### Unit 2: Problem Solving with Quadratic & Variation Functions

## Unit 2 Concepts:

Unit 2 focuses on quadratic applications in science and how to recognize direct variation used to solve problems.

## Learning Goals:

Students will be able to identify reasonable domain & range for the path of projectiles and to calculate minimum and maximum values of height and time. They will use graph and equations to determine where a projectile is located along a path. Students will identify if a set of data represent a direct or inverse variation and be able to make predictions about the future of that situation.

**Why?** – Students will make predictions about their surroundings and be better prepared for unknown situations.

## Unit 3 Concepts:

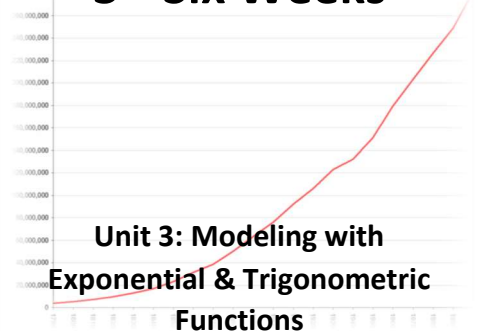
In unit 3, students will describe the increase and decrease of money, populations of cities, and quantities in science experiments.

## Learning Goals:

Students will identify growth and decay factors, create multiple representations of exponential functions, and interpret the meaning of exponential functions. They will also use Geometry skills to solve situations involving concepts of architecture and engineering.

**Why?** – Students will be able to make sense of how the value of money and population changes over time.

## 3<sup>rd</sup> Six Weeks



### Unit 3: Modeling with Exponential & Trigonometric Functions

### Unit 4 Concepts:

During unit 4 students will apply geometric properties and theorems to calculate materials and costs for home improvements, production of goods, and logistic calculations for transportation.

### Learning Goals:

Students will use scale factor to find surface areas, volume, and equivalent proportions. Properties and theorems will help them determine distances between objects and places.

**Why?** – Students will explore how Geometry is seen and used in the world around them.

## 4<sup>th</sup> Six Weeks



### Unit 4: Using Geometric Models to Solve Problems

## 5<sup>th</sup> Six Weeks



### Unit 5: Problem Solving with Probability & Statistical Models

### Unit 5 Concepts:

Unit 5 focuses on the organization of collected data and the various ways data can be collected.

### Learning Goals:

Students will display various types of graphs and will analyze the data by identifying patterns and trends. They will determine the measures of central tendency including mean, median, mode, and mid-range. Students will be able to decipher between symmetric and skewed distributions as well as distinguish percentiles and quartiles.

**Why?** – This unit will teach students to be more analytical of the information they receive daily via various media outlets.

### Unit 6 Concepts:

This unit focuses on the components of personal finance.

### Learning Goals:

Students will calculate gross and net pay of wages that are hourly, salary, and commissioned, and will learn how taxes are calculated for city, state, and the federal government. Students will investigate home and car loans, car leases and credit card debt, and be able to calculate the interest accrued on loans and the impact of paying on time and early. Lastly, students will explore amortization tables to see how down payments, interest rates, time, and monthly payments effect the total interest paid.

**Why?** – These lessons will teach students best practices to strengthen their financial future.

## 6<sup>th</sup> Six Weeks



### Unit 6: Problem Solving with Financial Models

**Questions?** Please contact your [Course] math teacher. **Additional Support:** We recommend Khan Academy and Tutor.com and remember campus tutoring is also available.