# 7th Grade Advanced Math Parent Guide

## 1st Six Weeks



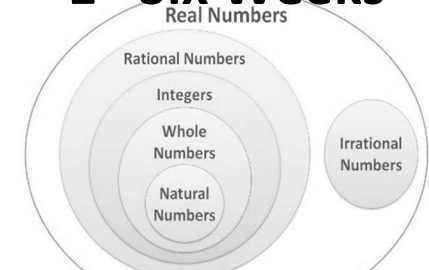**Unit 1: Numerical Relationships**

### Unit 1 Concepts:
This unit represents students' study into the real number system.

### Learning Goals:
Students will extend their knowledge of numbers, study powers and roots as well as exponents and scientific notation. They will learn to differentiate between rational and irrational numbers using a visual model and order them on a number line.
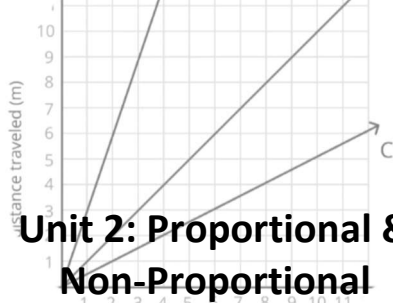
**Why?** – This unit will teach students how to observe, analyze, and search for patterns in numbers that will help in testing hypotheses for real and imaginary situations.

## 2nd Six Weeks



**Unit 2: Proportional & Non-Proportional Relationships**

### Unit 2 Concepts:
In this unit students will make connections and interpret the unit rate as the slope of a line and vice versa.

### Learning Goals:
Students will determine the rate of change (slope), y-intercept, write linear equations, and graph lines using tables, graphs, ordered pairs and verbal descriptions for both mathematical and real-world situations. They will also distinguish between proportional and non-proportional relationships.

**Why?** – Learning these concepts will help students understand how real-world situations can be expressed algebraically, graphically, and in a table.

## 3rd Six Weeks



**Unit 3: Equations & Inequalities**
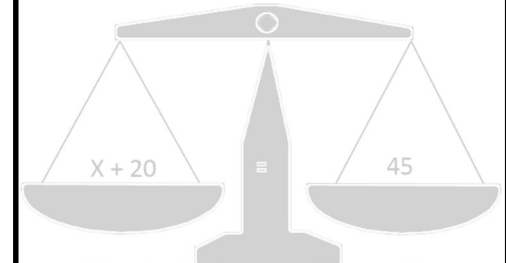
### Unit 3 Concepts:
In unit 3, students will explore multiple strategies for solving linear equations, writing inequalities, and solving systems of equations by graphing them on a coordinate grid.

### Learning Goals:
Students will use multiple strategies for solving equations and inequalities depending on the circumstance. This includes identifying if a system has one solution, no solution, or infinite solutions.

**Why?** – Equality is the fundamental concept of comparing quantities that will help students make sense of the world around them.

## 4th Six Weeks

### Unit 4: Geometry & Measurement & the Coordinate Plane

**Unit 4 & 5 Concepts:**

In this unit students find lateral and total surface area along with volume. They will learn about parallel lines cut by transversals and will write algebraic representations of transformations on a coordinate grid. They will use the Pythagorean Theorem and its converse to solve problems.

**Learning Goals:**

Students will see that lines and their corresponding angles create unique characteristics, that formulas can be used to solve problems involving surface area and volume. They will apply the Pythagorean Theorem as well as the note effects of transformations on 2D figures and investigate how scale factor changes proportionality.

**Why?** – Measurement is used in daily life and knowing how to find volume, surface area, common angles and how things transform on a coordinate plane will be very useful in the future.
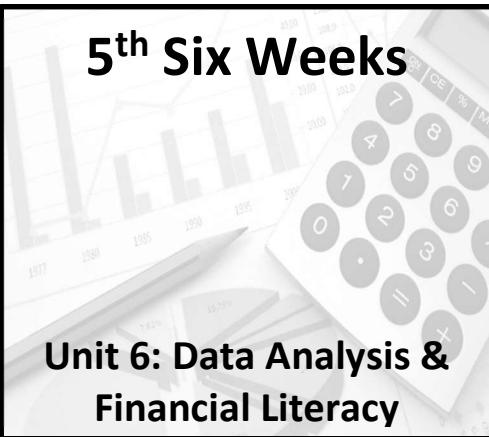
## 5th Six Weeks

### Unit 6: Data Analysis & Financial Literacy

**Unit 6 Concepts:**

Students will explore bivariate data to determine strength & significance of relationships between quantities and use scatterplots to analyze and make predictions about that data. Students will learn about loans, savings & making sound financial decisions including learning how to calculate simple & compound interest.

**Learning Goals:**

Students will be able to analyze scatterplot data for which a relationship is not necessarily obvious and use functions to make predictions and generalizations about associated data. They will also learn that being financial responsibility means planning/saving for the future and "living within your means."

**Why?** – Students use scatterplots to answer questions that drive future decisions and develop responsible plans for investing in their future needs.

## 6th Six Weeks

### Unit 8: Data Analysis & Probability

**Unit 8 Concepts:**

Students will build on their previous understand of statistics by learning how to select a random sample from a population and how to use data from a random sample to learn about that population.

**Learning Goals:**

Students will use sample data to build charts, graphs and compare two populations, they will learn the difference between variability in a populations and sampling variability.

**Why?** – An understanding of probability can help students make future decisions about the likelihood of events happening in their future.

**Questions?** Please contact your 7th Grade Advanced math teacher. **Additional Support:** We recommend Khan Academy and Tutor.com and remember campus tutoring is also available.