

## 8<sup>th</sup> Grade Math Parent Guide

### Unit 1 Concepts:

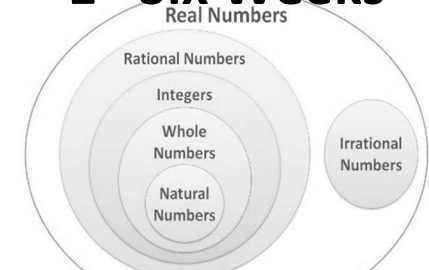
This unit represents students' study into the real number system.

### 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.

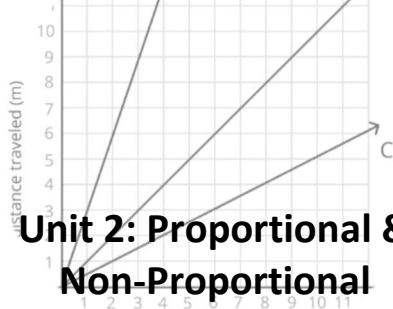
**Why?** – This unit will teach students how to observe, analyze, and search for patterns in numbers that will help in testing hypotheses for real and imaginary situations.

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



### Unit 1: Numerical Relationships

### 2<sup>nd</sup> 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.

### Unit 3 Concepts:

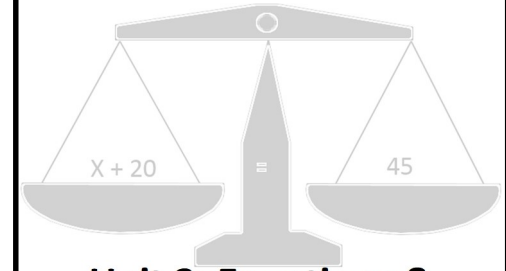
In unit 3, students will explore multiple strategies for solving linear equations, writing inequalities, and solving systems of equations by graphing them on a coordinate grid.

### 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.

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



### Unit 3: Equations & Inequalities

### Unit 4 Concepts:

Students will find the lateral and total surface area of prisms and cylinders. Students will also find the volume of cylinders, cones, and spheres. Students will identify the types of angles created when a transversal cuts two parallel lines.

### Learning Goals:

Students will understand that lines/line segments and their corresponding angles create unique characteristics and that formulas can be used to solve problems involving surface area and/or volume.

**Why?** – There are many uses for measurement in daily life and knowing the common formulas and similarities among shapes can help students solve more complex problems in the future.

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

### Unit 4: Geometry & Measurement



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

### Unit 5: Geometry & the Coordinate Plane



### Unit 5 Concepts:

In this unit students will write algebraic representations of dilations, translations, reflections, and rotations on a coordinate grid. They will use the Pythagorean Theorem and its converse to solve problems.

### Learning Goals:

The students will learn how to apply the Pythagorean Theorem as well as the effect of transformations on 2D figures and how to describe them to others. They will calculate perimeter and area of a 2-dimensional figures and understand how the scale factor changes proportionality.

**Why?** – Proportional reasoning can help students create scale models of graphics and logos while knowing the and using the Pythagorean Theorem can help them find lengths of walking paths between house or businesses, diagonals of and identify the largest item that can fit into a packing box.

### 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.

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

### Unit 6: Data Analysis & Financial Literacy



**Questions?** Please contact your 8<sup>th</sup> Grade math teacher. **Additional Support:** We recommend Khan Academy and Tutor.com and remember campus tutoring is also available.