

## GRADE 8 MATH

**Course Frequency:** Full-year course, five times per week

**Credits Offered:** None

**Prerequisites:** None

Mathematics at RJ Grey JHS is aligned with the [Massachusetts Mathematics Framework 2017](#) and seeks to develop deep mathematical proficiency for all students in **five interrelated strands**:

- **Conceptual Understanding** – The comprehension and connection of concepts, operations, and relations that establish the foundation of and are necessary for developing procedural fluency.
- **Procedural Fluency** – To use math effectively, students must be able to do much more than carry out mathematical procedures. They must know which procedure is appropriate and most productive in a given situation, what a procedure accomplishes, and what kind of results to expect.
- **Problem Solving** – The ability to formulate, represent, and solve mathematical problems.
- **Justify Reasoning** – The capacity to think logically and to justify one’s thinking and critique the reasoning of others.
- **Productive Disposition** – We want students to understand that math is useful, interesting, and worthwhile, and that they can become really good at it if they persevere and apply effective effort.

In 8th grade, students take one of two courses: **Grade 8 Math** or Algebra I.

The **Grade 8 Math** curriculum utilizes the Desmos Middle School Mathematics curriculum, which is also used in Grade 7 Math. Students who successfully complete this course will take Algebra I in 9<sup>th</sup> grade.

## **Course-End Learning Objectives**

### **The Number System**

- A. Know that there are numbers that are not rational and approximate them by rational numbers.

### **Expressions and Equations**

- A. Work with radicals and integer exponents.
- B. Understand the connections between proportional relationships, lines, and linear equations.
- C. Analyze and solve linear equations and pairs of simultaneous linear equations.

### **Functions**

- A. Define, evaluate and compare functions.
- B. Use functions to model relationships between quantities.

### **Geometry**

- A. Understand congruence and similarity using physical models, transparencies, or geometry software.
- B. Understand and apply the Pythagorean Theorem.
- C. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

### **Statistics and Probability**

- A. Investigate patterns of association in bivariate data.