

**Central Middle School  
1012 Hancock Street  
617-984-8725**

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**GRADE 8 ALGEBRA COURSE SYLLABUS**

**TEACHER:**

Mrs. Amy Malone

**COURSE/GRADE LEVEL:**

Grade 8 Algebra

**INSTRUCTIONAL MATERIALS:**

*Algebra 1: McDougal Littell*, Connected Mathematics, Manipulatives

**MAJOR TOPICS:**

**I. Connections to Algebra**

- Numbers and Number Operations
- Variables in Algebra
- Exponents and Powers
- Order of Operations
- Equations and Inequalities

**II. Rules of Algebra**

- Addition and Subtraction of Real Numbers
- Multiplication and Division of Real Numbers
- The Distributive Property
- Rates and Ratios

**III. Solving Linear Equations**

- Solving Equations Using One Transformation
- Solving Equations Using One, Two, or More Transformations

**IV. Geometry**

- Perimeter, Circumference, Area
- Volume, Surface Area

**V. Graphing Linear Equations**

- Graphing Linear Equations in One Variable
- Graphing Linear Equations in Two Variables
- Quick Graphs Using Intercepts
- The Slope of a Line
- Quick Graphs Using Slope-Intercept Form

**VI. Powers and Exponents**

- Multiplication Properties of Exponents
- Negative and Zero Exponents
- Division Properties of Exponents
- Scientific Notation

Problem Solving and Scientific Notation  
Problem Solving: Compound Interest and Exponential Growth  
Exponential Growth and Decay

### **VII. Quadratic Equations**

Square Roots and the Pythagorean Theorem  
Solving Quadratic Equations by Finding Square Roots  
Graphs of Quadratic Equations  
The Quadratic Formula  
Problem Solving Using the Discriminant

### **VIII. Polynomials and Factoring**

Adding, Subtracting, and Multiplying Polynomials  
Factoring Special Products and Quadratic Trinomials  
Solving Quadratic Equations by Factoring and Completing the Square

### **ASSESSMENT TOOLS**

Group and Individual Projects	Notebooks
Interdisciplinary activities	Word Problem Sets
Quizzes	Tests
Homework	

**\*See Student Individual Education Plans or 504 Plans for modification where applicable.\***

### **HOMEWORK EXPECTATIONS**

Homework is given almost every night and is usually due the following day. Homework grades are based on completion not accuracy and are given as follows:

3 = complete and on-time	1 = complete and more than one day late
2 = complete and one day late	0 = missed assignment

### **GRADING POLICY**

At the end of the term, final grades are computed as follows:

Tests	45%
Quizzes	45%
Homework	10%
Notebook	Counts as one quiz grade
Projects	Count as one quiz grade
Supply Check	Counts as one quiz grade
Participation	Counts as one quiz grade

### **SUPPLY CHECKS**

Students must bring the following materials to class every day. On any given day (at least twice during a term), there will be a supply check that counts as a quiz grade:

textbook	notebook
agenda book	pencil (pen does not count)
math folder	scientific calculator (TI-30X-IIS recommended)

### **MAKEUP PROCEDURE**

If a student is absent, please see me upon return for assignments. Arrangements will be made to reschedule missed quizzes, tests and presentations. Make-up work is to be done in a reasonable amount of time based on the length of absence.