

**SCHOOL:** Atlantic Middle School  
**ADDRESS:** 86 Hollis Avenue  
**PHONE #:** 617-984-8727

## **SYLLABUS**

**TEACHER** Mrs. Mary E. Lydon

**COURSE/GRADE LEVEL** Algebra I, High Honors, Grade 8

### **INSTRUCTIONAL MATERIALS**

*Algebra 1*

### **MAJOR TOPICS\***

Expressions, Equations, and Functions

Evaluate Expressions

Apply Order of Operations

Write Expressions, Equations, and Inequalities

Represent Functions as Rules, Tables, and Graphs

Properties of Real Numbers

Use Integers and Rational Numbers

Add, Subtract, Multiply, and Divide of Real Numbers

Apply the Distributive Property

Find Square Roots and Compare Real Numbers

Solving Linear Equations

Solving Equations Using One, Two, or More Steps

Write Ratios and Proportions

Solve Proportions Using Cross Products

Solve Percent Problems

Rewrite Equations and Formulas

Geometry

Perimeter, Circumference, Area

Volume, Surface Area

Graphing Linear Equations and Functions

Plot Points in a Coordinate Plane

Graph Linear Equations

Graph Using Intercepts

Find the Slope and Rate of Change

Graph Using Slope-Intercept Form

Model Direct Variation

Graph Linear Functions

Writing Linear Equations

Write and Use Linear Equations in Slope-Intercept Form

Write Linear Equations in Point-Slope Form and in Standard Form

Write Equations of Parallel and Perpendicular Lines

Fit a Line to Data

- Predict with Linear Models
- Solving and Graphing Linear Inequalities
  - Solve Inequalities Using Addition, Subtraction, Multiplication, and Division
  - Solve Multi-Step Inequalities and Compound Inequalities
  - Solve Absolute Value Equations and Inequalities
  - Graphing Linear Inequalities in Two Variables
- Solving Systems of Linear Equations and Inequalities
  - Solve Linear Systems by Graphing, Substitution, Linear Combinations
  - Solve Systems of Linear Inequalities
- Exponents and Exponential Functions
  - Apply Exponent Properties Involving Products and Quotients
  - Define and Use Negative and Zero Exponents
  - Use Scientific Notation
  - Write and Graph Exponential Growth Functions and Exponential Decay Functions
- Polynomials and Factoring
  - Add, Subtract, and Multiply Polynomials
  - Factor Special Products of Polynomials
  - Solve Polynomial Equations in Factored Form
  - Factor Polynomials Completely
- Quadratic Equations and Functions
  - Graph Quadratic Equations
  - Use Square Roots to Solve Quadratic Equations
  - Solve Quadratic Equations by Graphing, Completing the Square, and the Quadratic Formula
  - Interpret the Discriminant
  - Compare Linear, Exponential, and Quadratic Models

**\*ASSESSMENT TOOLS**

- Portfolios
- Rubrics
- Open ended questions
- Word problems
- Objective Tests/Quizzes
- FCAS for long essays
- Homework

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

**HOMEWORK EXPECTATIONS**

Homework is given most nights. In general, it is due the following day. If it is complete and on time, it is worth 2 points. If it is late or incomplete, it is worth one point. To be counted late, it must be done the next day after it was due. If it is not done, it is worth 0 points. At the end of the term, a homework average is computed based on the number of points earned divided by the number of possible points.

**GRADING POLICY**

Quizzes for each chapter are averaged and count as one test grade. Chapter tests count as one test grade. Homework counts as one test grade. Writing assignments are averaged as one test grade. At the end of the term, the final grade is based on an average of the quizzes, tests, homework, and writing assignments.

**MAKEUP PROCEDURE**

If a student is absent, the student should see me on the day of return to school to receive any make-up work. Arrangements will be made on an individual basis as to when missed tests can be taken.

**GENERAL INFORMATION**

Each student needs to have his or her text, a notebook and a writing instrument each day. It is also strongly recommended that each student have a scientific calculator. If you are purchasing a new one, a TI-30XIIS (made by Texas Instrument) is the type used in class.

**\*Adjustments may be made in this syllabus to meet student needs.**

