

Point Webster Middle School
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TEACHER: Mr. Marani EMAIL: mmarani@quincy.k12.ma.us
COURSE/GRADE LEVEL: 8th Grade Algebra
TEXTBOOK: Algebra 1/McDougal Littell

MAJOR TOPICS:

1. EXPRESSIONS, FUNCTIONS & EQUATIONS

- Evaluate Expressions
- Order of Operations
- Write expressions, equations & inequalities
- Use Problem Solving Plans
- Represent Functions as Rules, Tables, Functions & Graphs

2. PROPERTIES OF REAL NUMBERS

- Use integers and rational numbers
- Add, subtract, multiply & divide real numbers
- Apply Distributive Properties
- Square Roots & Real Numbers

3. SOLVING LINEAR EQUATIONS

- Solve one, two & multi-step equations
- Solve equations with Variables on both sides
- Write ratios and proportions
- Solve proportions
- Solve Percent Problems
- Rewrite equations and formulas

4. GRAPHING LINEAR EQUATIONS AND FUNCTIONS

- Plot points on Coordinate Planes
- Graph Linear Equations
- Graph using Intercepts
- Find Slope & Rate of Change
- Graph using Slope-Intercept Form
- Model Direct Variation
- Graph Linear Functions

5. WRITING LINEAR EQUATIONS

- Write and Use Linear Equations in Slope-Intercept Form
- Write Linear Equations in Point-Slope & Standard Form
- Write Equations of Parallel & Perpendicular Lines
- Fit a Line to Data

- Predict with Linear Models

6.SOLVING AND GRAPHING LINEAR INEQUALITIES

- Solve Inequalities using addition, subtraction, multiplication & division
- Solve multi-step & compound inequalities
- Solve Absolute Value equations & expressions
- Graph Linear Inequalities in Two Variables

7.SYSTEMS OF EQUATIONS AND INEQUALITIES

- Solve Linear Systems by graphing, substitution, adding or subtracting & multiplying first
- Solve special types of Linear Systems
- Solve systems of Linear Inequalities

8.EXPONENTS AND EXPONENTIAL FUNCTIONS

- Apply Exponent Properties Involving Products & Quotients
- Define & Use Zero and Negative Exponents
- Use Scientific Notation
- Write & Graph Exponential Growth & Decay Functions

9.POLYNOMIALS AND FACTORING

- Add, Subtract & Multiply Polynomials
- Find special products of Polynomials
- Solve Polynomial Equations in Factored Form
- Factor Special Products
- Factor Polynomials Completely

10. QUADRATIC EQUATIONS AND FUNCTIONS

- Solve Quadratic Equations by Graphing
- Use Square Roots to Solve Quadratic Equations
- Solve Quadratic Equations by Completing the Square
- Solve Quadratic Equations by the Quadratic Formula
- Interpret the Discriminant
- Compare Linear, Exponential & Quadratic Models

11. RADICALS AND GEOMETRY CONNECTIONS

- Graph Square Root Functions
- Simplify & Solve Radical Expressions
- Apply the Pythagorean Theorem and its Converse & the Distance and Midpoint Formulas

12. RATIONAL EQUATIONS AND FUNCTIONS

- Model Inverse Variation
- Graph Rational Functions
- Divide Polynomials
- Simplify, Multiply, Divide, Add, Subtract & Solve Rational Expressions

13. PROBABILITY AND DATA ANALYSIS

- Find probabilities and odds
- Find Probabilities using Permutations & Combinations
- Find Probabilities of Compound Events
- Analyze Surveys and Samples
- Use Measures of Central Tendency and Dispersion
- Interpret Stem-and-Leaf Plots and Histograms
- Interpret Box-and-Whisker Plots

MATERIALS NEEDED

1 notebook, spiral bound or binder (cannot be combined with other classes), pen or a pencil, folder (cannot be combined with other classes), and the agenda

ASSESSMENT TOOLS

Rubrics, Notebooks, Open Response Questions, Word Problems, Tests/Quizzes, Homework, Projects, and Presentations

GRADING POLICY

Tests: 33.3%

Quizzes: 33.3%

Homework: 33.3%

MAKE-UP PROCEDURE

Students are expected to make-up any missed work that they have missed due to absence. It is their responsibility to seek out the teacher to make arrangements to make-up work. Make-up Tests/Quizzes will NOT be given during class time.

ADJUSTMENTS MAY BE MADE IN THIS SYLLABUS TO MEET INDIVIDUAL STUDENT NEEDS