ALGEBRA I: ¾ – Course Syllabus (2019-20)

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Course Description:

Algebra 1 introduces students to variables, algebraic expressions, equations, functions, inequalities, and their multiple representations. The students develop the ability to explore and solve real-world application problems, demonstrate the appropriate use of graphing calculators, and communicate mathematical ideas clearly.

This course lays the foundation for every subsequent course in mathematics. The topics learned in Algebra 1 comprise a large part of the PSAE objectives. Success in Algebra I must be encouraged and emphasized since it is an accurate indicator of future success.

Goals:

By year's end students will:

- **Simplify or identify equivalent algebraic expressions**
- **Represent math relationships using symbolic algebra**
- **Determine if functions are linear, quadratic, or exponential**
- **Determine a rule that generates terms of a pattern**
- **Model and describe slope as a constant rate of change**
- **Evaluate variable expressions and functions**
- **Identify an equation of a line or an equation of a line of best fit from given info**
- **Recognize the general shape and properties of functions from graphs, tables, or equations**
- **Identify slope from an equation, table of values, or graph**
- **Interpret the role of the coefficients and constants on the graphs of linear and quadratic functions**

- **Analyze functions by investigating domain, range, rates of change, intercepts, and zeros**
- **Create and connect representations that are tabular, graphic, numeric, and symbolic from a set of data**
- **Represent quantitative relationships graphically, and interpret the meaning of the graph or a specific part of the graph as it relates to the situation represented by the graph**
- **Model problems using math functions and relations**
- **Interpret the graph of a system of equations and inequalities**
- **Solve linear equations and inequalities**
- **Solve systems of equations and inequalities**

Course Scope, Sequence and Pacing:

For guidance, use *Algebra 1 Course Framework*, *Algebra I Course Planning Map, Course Framework Major Curriculum Structure Alignment,* and *the Algebra 1 Course Syllabus and Pacing Guide. (subject to change)*

Number of Days	Major Topics- CME Algebra 1
18	From Arithmetic to Algebra
19	Expressions and Equations
19	Graphs
18	Lines
14	Introduction to Functions
17	Exponents and Radicals
14	Polynomials
14	Quadratics

Required Text:

- **CME Project Algebra 1 textbook**
- **CME Project Algebra 1 additional practice workbook**

Required Student Materials:

- **Folder**
- **Several three-hole notebooks**
- **8 x 11 grid paper**
- **Pencil pouch**
- **Several pencils**
- **Colored pens**
- **Highlighter**
- **Loose-leaf 8 x 11 notebook paper**
- **TI 84 Graphing Calculator**

*****For students with a modified grading scale, you will be graded on the Uplift High School Grading Scale throughout the year, but your quarter and semester grades will be modified from that total.**

Grading Distribution

Students are evaluated according to a variety of criteria. Student grades are based on class participation, daily homework assignments, Problems of the Week, and unit assessments, including midterm and final exams.

Midterm and Final Exams	**25%**	
Unit Assessments/Quizzes		**25%**
Classwork	**20 %**	
Homework	**10%**	
Problem of the Week (POW)/Extended Responses	**10%**	
Attendance/Participation	**10%**	

Unit Assessment/Quizzes/Exams:

There will be in-class assessments and/or take-home assessment at the end of each unit, and quizzes may be given at any time. In addition, a quarterly exam will be given at the end of the 1st and 3rd quarters, a midterm and final exam will be given at the end of each semester. Assessments will consist of a few problems that require the use of a combination of strategies and techniques explored throughout the unit. As always, emphasis will be on the explanation of the process, not just on the solutions.

Homework/Classwork:

Expect homework on a daily basis. For the most part, homework is due the day after it is assigned, and must be completed prior to the start of class. Some assignments will be scored in class based on effort and completion, while others will be collected and scored based on accuracy. You will not be told ahead of time which assignments will be collected. *All problems should be adequately attempted and evidence for your efforts must be shown on paper. Students may receive partial credit for incomplete homework.*

POWs:

Problems of the week are long-term problem-solving, usually open-ended assignments. Despite the name, on occasion, you may have more than one week to work on a POW.

Attendance/Participation:

You are expected to be prepared, participate in group discussions, work together on activities, answer questions posed by the teacher, present solutions to homework problems to the class, take notes on all activities, and follow general directions.

It is very important that you attend class daily. You will need to be up-to-date with the material at all times since most of the topics build upon each other. If you are absent, it is your responsibility to find out what you have missed.

Supplementary Resources:

- **http://www.math.com**
- **http://mathforum.org/dr.math**
- **http://www.freemathhelp.com**
- **http://www.purplemath.com**