Course Outline & Expectations

The purpose of this course is to teach you the Algebra 1 skills that you will need as a foundation for all higher-level math classes, while strengthening your math foundation.

Towards the end of the year, you will take the FSA Algebra 1 EOC. Passing this two-part, computer based assessment is a **graduation requirement**. The questions on this test require higher order thinking skills and application. Some things to note:

- You can only use a calculator on one section

- The test will cover material from the whole course

- If you do not pass, you will retake the test (again and again and again)

- The test counts for 30% of your grade in the overall class. (If you do exceptionally well 4-5, it will BOOST your grade; if you do not pass 1-2, it will LOWER your grade)

*Some of what you learn in Algebra 1 is a **review** of what you learned in middle school. And what you learn in this class will be reviewed and expanded upon in Geometry & Algebra 2.*

In this class, we will:

- **Review** basic math operations and skills
- **Learn** the concepts in Algebra 1
- **Work Collaboratively** on complex, high level problems
- **Investigate** the process behind certain math concepts
- **Prove** our knowledge through formal (district- and teacher-created) and informal assessments

Florida Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them

2. Reason abstractly and quantitatively

3. Construct viable arguments and critique the reasoning of others

4. Model with mathematics

5. Use appropriate tools strategically

6. Attend to precision

7. Look for and make use of structure

8. Look for and express regularity in repeated reasoning

Reporting Categories

The material from Algebra 1 is broken down into 3 main categories that are covered on the EOC at the end of the year. Within each category, there are domains, and clusters, and individual standards. Here is a "brief" overview:

Algebra & Modeling (41%) (MAFS.912.A-)
APR: Arithmetic with Polynomials & Rational Expressions
       1: Perform arithmetic operations on polynomials.
       2: Understand the relationship between zeros and factors of polynomials.
CED: Creating Equations
       1: Create equations that describe numbers or relationships.
REI: Reasoning with Equations & Inequalities
       1: Understand solving equations as a process of reasoning and explaining the reasoning
       2: Solve equations & inequalities in one variable
       3: Solve systems of equations
       4: Represent and solve equations and inequalities graphically
SSE: Seeing Structure in Expressions
       1: Interpret the structure of expressions
       2: Write expressions in equivalent forms to solve problems

Functions & Modeling (40%) (MAFS.912.F-)
BF: Building Functions
       1: Build a function that models a relationship between two quantities
       2: Build new functions from existing functions
IF: Interpreting Functions
       1: Understand the concept of a function and use function notation
       2: Interpret functions that arise in applications in terms of the context
       3: Analyze functions using different representations
LE: Linear, Quadratic, and Exponential Models
       1: Construct and compare linear, quadratic, and exponential models and solve problems
       2: Interpret expressions for functions in terms of the situation they model

Statistics & the Real Number System (19%) (MAFS.912.N- and MAFS.912.S-)
N-Q: Quantities
       1: Reason quantitatively and use units to solve problems
N-RN: The Real Number System
       1: Extend the properties of exponents to rational exponents
       2: Use properties of rational and irrational numbers
S-ID: Interpreting Categorical & Quantitative Data
       1: Summarize, represent, and interpret data on a single count or measurement variable
       2: Summarize, represent, and interpret data on two categorical and quantitative variables
       3: Interpret linear models
S-IC: Making Inferences & Drawing Conclusions

Algebra 1 Course Overview—based on the HMH Textbook

Unit 1: Quantities & Modeling
   1. *Quantitative Reasoning---not covered*
   2. Algebraic Models
         Modeling with Expressions
         Creating & Solving Equations & Inequalities
Unit 2: Understanding Functions
   3. Functions & Models
         Modeling & Graphing functions
   4. Patterns & Sequences
         Constructing & Modeling Arithmetic Sequences
Unit 3: Linear Functions, Equations, and Inequalities
   5. Linear Functions
         Intercepts & Slope
   6. Forms of Linear Equations
         Different forms of equations
         Transforming & Comparing functions
   7. Linear Equations & Inequalities
         Modeling linear relationships
         Linear inequalities in two variables
Unit 4: *Statistical Models--- might be moved*
   8. Multi-Variable Categorical Data
         Two Way Frequency tables
         Conditional & Relative frequency
   9. One Variable Data Distributions
         Measures of center and spread
         Comparing sets of data
         Histograms, Box Plots, Dot Plots
   10. Linear Modeling & Regressions
         Scatter plots and trend lines
Unit 5: Linear Systems and *Piecewise Defined Functions*
   11. Solving Systems of Linear Equations
         Solving systems by graphing, substitution, elimination
   12. Modeling with Linear Systems
         Creating & Modeling systems
         Systems of Linear Inequalities
   13. *Piecewise defined functions -----not covered*
Unit 6: Exponential Relationships
   14. Rational Exponents & Radicals
         Simplifying expressions
   15. Geometric Sequences & Exponential Functions
         Constructing geometric sequences and exponential functions
         Graphing and transforming exponential functions
   16. Exponential Equations & Models
         Solve exponential equations
         Exponential Growth & Decay

Online Resources we will use:

Math Nation—accessible through your portal
- Has videos & interactive practice exercises that cover every concept
- You will have a workbook that follows the videos
- The BEST EOC practice out there!

HMH Online Textbook—accessible through your portal
- Can use in place of textbook—there is a more interactive online version, and videos that explain each concept
- Where you will complete your online HW

Khan Academy—join your "class"
- Has videos & interactive practice exercises on every topic of math, and many other classes too!
- As coach, I can assign and monitor activities for you!

FSAssessments.org
- Has a practice test and more information about the EOC