
Algebra 1

2015-2016

Mr. Sinclair Johnston

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When texting or emailing me you MUST include your full Name and your Algebra 1 Class Period . I will NOT answer phone calls. (Texts only)

The fundamental purpose of this course is to formalize and extend the mathematics that students learned in the middle grades. The critical areas, called units, deepen and extend understanding of linear and exponential relationships by contrasting them with each other and by applying linear models to data that exhibit a linear trend, and students engage in methods for analyzing, solving, and using quadratic functions. The Standards for Mathematical Practice apply throughout each course, and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations.

Required Materials:

- Binder with (4 recommended) dividers/sections
 1. Bell Ringer
 2. Homework/Classwork
 3. Class Notes
 4. Vocabulary
- Folder
- Pencils and erasers
- Blank Paper

Grade Breakdown:

- A → 90% - 100%
- B → 83% - 89%
- C → 70% - 82%
- D → 60% - 69%
- F → Anything less than 60%

Homework:

Homework will be assigned every class day with very few exceptions. Students are expected to write down the assignments in their math notebooks. Homework is due at the beginning of every class. Show all your work – every step!! Don't just copy down answers – you won't receive credit for it.

Attendance:

Being in your desk with a paper and pencil out BEFORE the bell rings is the only way to be marked present! Miami Jackson Senior High School takes attendance very seriously. If you are absent FOR ANY REASON you MUST make up the work covered during your absence. It is on you to ask for makeup work (AFTER SCHOOL) and complete it to my satisfaction. This class is fast paced and it's important to stay current with the material. I reserve the right to deny make up work if the gradebook has been closed for that unit.

Content:

Unit 1- Relationships between Quantities and Reasoning with Equations: By the end of eighth grade students have learned to solve linear equations in one variable and have applied graphical and algebraic methods to analyze and solve systems of linear equations in two variables. This unit builds on these earlier experiences by asking students to analyze and explain the process of solving an equation. Students develop fluency writing, interpreting, and translating between various forms of linear equations and inequalities, and using them to solve problems. They master the solution of linear equations and apply related solution techniques and the laws of exponents to the creation and solution of simple exponential equations. All of this work is grounded on understanding quantities and on relationships between them.

Unit 2- Linear and Exponential Relationships: In earlier grades, students define, evaluate, and compare functions, and use them to model relationships between quantities. In this unit, students will learn function notation and develop the concepts of domain and range. They explore many examples of functions, including sequences; they interpret functions given graphically, numerically, symbolically, and verbally, translate between representations, and understand the limitations of various representations. Students build on and informally extend their understanding of integer exponents to consider exponential functions. They compare and contrast linear and exponential functions, distinguishing between additive and multiplicative change. Students explore systems of equations and inequalities, and they find and interpret their solutions. They interpret arithmetic sequences as linear functions and geometric sequences as exponential functions.

Unit 3- Descriptive Statistics: This unit builds upon students prior experiences with data, providing students with more formal means of assessing how a model fits data. Students use regression techniques to describe and approximate linear relationships between quantities. They use graphical representations and knowledge of the context to make judgments about the appropriateness of linear models. With linear models, they look at residuals to analyze the goodness of fit.

Unit 4- Expressions and Equations: In this unit, students build on their knowledge from unit 2, where they extended the laws of exponents to rational exponents. Students apply this new understanding of number and strengthen their ability to see structure in and create quadratic and exponential expressions. They create and solve equations, inequalities, and systems of equations involving quadratic expressions.

Unit 5- Quadratic Functions and Modeling: In this unit, students consider quadratic functions, comparing the key characteristics of quadratic functions to those of linear and exponential functions. They select from among these functions to model phenomena. Students learn to anticipate the graph of a quadratic function by interpreting various forms of quadratic expressions. In particular, they identify the real solutions of a quadratic equation as the zeros of a related quadratic function. Students expand their experience with functions to include more specialized functions—absolute value, step, and those that are piece wise-defined.