Fairfield Ludlowe High School - Fairfield Warde High School

Foundations of Algebra

Insert Teacher Name | Insert Room Number

Insert Full Year/Semester | Insert Period

Insert Email Address

COURSE DESCRIPTION

Foundations of Algebra is designed for students who did not successfully complete a pre-algebra course and would benefit from building their algebra foundational skills. . Building on their work with expressions and equations from Pre-Algebra within middle school, students in Foundations of Algebra will extend their skills to inequalities, linear equations, functions, exponent properties, systems of linear equations, and variable expressions. In the end, students will apply their mathematical learning to real-world problems and situations.

COURSE ENDURING UNDERSTANDINGS

- Algebraic expressions and equations generalize relationships from specific cases.
- Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies.
- Real world situations can be represented symbolically and graphically.
- The Real Number System is organized into subcategories of numbers with similar traits.
- There is a specific order of operations in the real number system that must be followed for all computations.
- An expression is made up of variables and constants, along with algebraic operations.
- Algebra uses symbols to represent quantities that are unknown or that vary. Mathematical phrases and real-world relationships can be represented using symbols and operations.
- An algebraic expression can be simplified by combining the parts of the expression that are alike.
- An equation is a mathematical statement that shows that two mathematical expressions are equal. The equal sign indicates that two expressions are equivalent.
- One variable equations are the foundation for Algebra and solving them is rooted in mathematical properties (distributive property, addition/subtraction property of equality, multiplication/division property of equality).
- Variables represent an unknown numerical value.
- An inequality is another way to describe a relationship between expressions; instead of showing that the values of two expressions are equal, inequalities indicate that the value of one expression is greater than (or greater than or equal to) the value of the other expression.
- In solving an inequality, multiplying or dividing both expressions by a negative number reverses the sign that indicates the relationships between the two expressions.
- Functions are single-valued mappings from one set- the domain of the function - to another - its range.
- A function's rate of change is one of the main characteristics that determine what kinds of real-world phenomena the function can model.
- Linear functions are characterized by a constant rate of change. Reasoning about the similarity of "slope" triangles allows deducing that linear functions have a constant rate of change and a formula of the type $y = mx + b$.
- Functions can be represented in various ways, including through algebraic means (e.g., equations), graphs, word descriptions, and tables.
- A solution to a system of linear equations is an ordered pair of numbers that satisfies all the equations simultaneously.
- Solving a system of linear equations is a process of determining the value or values that make the equation true.
- Solving a system of equations can be computed graphically or algebraically.
- The different methods to solve a system of equations can be more efficient than others, based on the situation and context.
- There are specific rules for how to simplify expressions involving exponents.
- Properties of exponents are derived from the properties of multiplication and division.
- Finding a root of a number is the inverse operation to the corresponding exponent.
- Powers can be used to shorten the representation of repeated multiplication.
- Real world situations can be represented symbolically and graphically.
- Algebraic expressions and equations can be used to help solve real-world problems.
- Right triangle distances can be determined by applying Pythagorean Theorem.
- Systems of linear equations can be used to model scenarios that include multiple constraints.

UNITS OF STUDY

- Expressions
- Equations and Inequalities
- Functions
- Systems of Equations
- Exponent Properties
- Application of Algebraic Concepts

COURSE POLICIES AND REQUIREMENTS

GRADING (see FPS BOE Policy 6146.1AR)

Cumulative/In-Progress Grade:

- 10% of the grade will be based on formative assessments, homework completion, or behavior
- 90% will be based on summative assessments, of which there will be a minimum of eight, with no fewer than 2 per quarter, for this full-year course; these may include Unit Tests, Mid-Unit Tests, Projects, Performance tasks, Summative Quizzes, etc.

End-of-the-Year Grade:

- 80% of the overall course grade will reflect the student's mastery of course content and skills during the school year through the Cumulative/In-Progress Grade.
- 10% of the End-of-the-Year course grade will be based on the Mid-Year Assessment
- 10% of the End-of-the-Year course grade will be based on the Final Assessment.

Grade Reporting

- All grades will be communicated through Infinite Campus
- Summative assessment results will be reported back to the student within ten school days from the date of submission or the due date.
- Formative assessment results will be reported back to the student within five school days from the date of submission or the due date, whichever is later and prior to any subsequent assessment..

Guidelines for Late Work:

- Late work will be accepted for both summative and formative tasks within a defined timeline agreed upon between the student and the teacher for excused absences..
- The total points may be reduced as a penalty for late work for unexcused absences. Students will earn a zero (0) if the assignment is not submitted or is submitted after the deadline for late work.

Reassessments:

- Any extenuating circumstances may be discussed with administration to allow alternative reassessment opportunities with administrative approval.
- Reassessment opportunities are defined as twice per year (with a maximum of one per quarter) for assignments that students met the original required deadlines and do not violate the academic integrity policy. Reassessment does not apply to midyear assessments or final assessments.
- Gradebook impact of Reassessment: original and reassessment scores will be averaged in the gradebook.

MATERIALS

(Insert Course Materials Here, ie. Textbook, Binder, Calculator, Highlighters)

EXPECTATIONS OF STUDENTS

(Insert Course Expectations Here)

EXTRA HELP

(Insert Course Expectations Here)

(Insert Additional Information Here)