

Bridge Math

CREDIT 1

GRADE 12

PREREQUISITE: ALG 1 and 2, GEOM

The curriculum will focus on the mathematical skills required to enter college or the workplace. These skills will enhance the high school graduate's professional advancement and decision-making abilities. Students will learn when and why different math tools are useful in everyday life. Technology will be used to improve the student's understanding of core concepts through the use of multiple problem solving strategies. **NOTE: Students scoring less than 19 in Math on the ACT test must take Senior Bridge Math.**

Unit 1

The following will be finished without the use of a calculator.

- Use a number line to order numbers.
- Translate sentences into mathematical statements.
- Identify natural numbers, whole numbers, integers, rational numbers, irrational numbers, and real numbers.
- Find the absolute value of a real number.
- Write fractions in simplest form.
- Add, subtract, multiply and divide fractions.
- Perform operations on mixed numbers.
- Define and use exponents and the order of operations.
- Evaluate algebraic expressions, given replacement values for variables.
- Translate phrases into expressions and sentences into statements.
- Solve applications that involve addition of real numbers.
- Find the opposite of a number.
- Add and subtract real numbers.
- Evaluate algebraic expressions using real numbers
- Solve applications that involve subtraction of real numbers.
- Multiply and Divide real numbers.
- Find the reciprocal of a real number.
- Evaluate expressions using real numbers.
- Solve applications that involve multiplication or division of real numbers.
- Find complementary and supplementary angles.

Unit 2

- Identify terms, like terms, and unlike terms.
- Combine like terms.
- Use the distributive property to remove parentheses.
- Write word phrases as algebraic expressions.
- Define linear equations and use the addition property of equality to solve linear equations.
- Use the multiplication property of equality to solve linear equations.
- Use both properties of equality to solve linear equations.
- Write word phrases as algebraic expressions.
- Apply a general strategy for solving a linear equation.
- Solve equations containing fractions.
- Solve equations containing decimals

- Recognize identities and equations with no solution.
 - Solve problems involving direct translations.
 - Solve problems involving relationships among unknown quantities.
 - Solve problems involving consecutive integers.
 - Use formulas to solve problems.
 - Solve a formula or equation for one of its variables.
 - Solve percent equations.
 - Solve discount and mark-up problems.
 - Solve percent increase and percent decrease problems.
 - Solve mixture problems.
 - Solve problems involving distance.
 - Solve problems involving money.
 - Define linear inequality in one variable, graph solution sets on a number line, and use interval notation.
 - Solve linear inequalities.
 - Solve compound inequalities.
 - Solve inequality applications. Solve problems involving interest.
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Unit 3

- Read bar and line graphs.
 - Define the rectangular coordinate system and plot ordered pairs of numbers.
 - Graph paired data to create a scatter diagram.
 - Determine whether an ordered pair is a solution of an equation in two variables.
 - Find the missing coordinate of an ordered pair solution, given one coordinate of the pair.
 - Identify linear equations.
 - Graph a linear equation by finding and plotting ordered pair solutions.
 - Identify intercepts of a graph.
 - Graph a linear equation by finding and plotting intercepts.
 - Identify and graph vertical and horizontal lines.
 - Find the slope of a line given two points of the line.
 - Find the slope of a line given its equation.
 - Find the slopes of horizontal and vertical lines.
 - Compare the slopes of parallel and perpendicular lines.
 - Interpret slope as a rate of change.
 - Use the slope-intercept form to graph a linear equation.
 - Use the slope-intercept form to write an equation of a line.
 - Use the point-slope form to find an equation of a line given its slope and a point on the line.
 - Use the point-slope form to find an equation of a line given two points on the line.
 - Find equations of vertical and horizontal lines.
 - Identify relations, domains, and ranges.
 - Identify functions.
 - Use the vertical line test.
 - Use function notation.
 - Use the point-slope form to solve problems.
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Unit 4

- Determine if an ordered pair is a solution of a system of equations in two variables.
- Solve a system of linear equations by graphing.
- Without graphing, determine the number of solutions of a system.
- Use the substitution method to solve a system of linear equations.
- Use the addition method to solve a system of linear equations.
- Solve problems that can be modeled by a system of two linear equations.
- Graph a linear inequality in two variables.
- Solve a system of linear inequalities.

Unit 5

- Evaluate exponential expressions.
- Use the product rule for exponents.
- Use the power rule for exponents.
- Use the power rule for products and quotients.
- Use the quotient rule for exponents, and define a number raised to the 0 power.
- Decide which rule(s) to use to simplify an expression.
- Define polynomial, monomial, binomial, trinomial, and degree.
- Define polynomial functions.
- Simplify a polynomial by combining like terms.
- Multiply Monomials.
- Use the distributive property to multiply polynomials.
- Multiply polynomials vertically.
- Multiply two binomials using the FOIL Method.
- Square a binomial.
- Multiply the sum and difference of two terms.
- Simplify expressions containing negative exponents.
- Use all the rules and definitions for exponents to simplify exponential expressions.
- Write numbers in scientific notation.
- Convert numbers from scientific notation to standard form.
- Perform operations on numbers written in scientific notation.
- Divide a polynomial by a monomial.
- Use long division to divide a polynomial by another polynomial.
- Find the greatest common factor of a list of integers.
- Find the greatest common factor of a list of terms.
- Factor out the greatest common factor from a polynomial.

*For information regarding instructional objectives and materials, please contact the school principal.

*Every unit includes two quizzes and one posttest. Students must make at minimum a 75.

*Every unit includes an optional pretest students may take to test out of a unit.