
Coal City Unit District #1
JJC Bridge Program
Math Curriculum

MA.JJB:1 Students will demonstrate an understanding of linear functions.

- MA.JJB:1-1 Identify dependent and independent variables in linear relationships and use this knowledge to model authentic situations.
- MA.JJB:1-2 Understand the relationship between lines and their equations including slope.
- MA.JJB:1-3 Graph a line using slope-intercept form of the linear equation.
- MA.JJB:1-4 Determine the equation of a line from its graph and from the point-slope formula.
- MA.JJB:1-5 Use graphs of lines to identify solutions to linear equations.
- MA.JJB:1-6 Solve linear inequalities and equations, expressing the solution sets using interval notation and graphing solution sets on number lines.
- MA.JJB:1-7 Interpret solutions to linear equations in a context.

MA.JJB:2 Students will demonstrate an understanding of functions, systems of equations, and systems of inequalities.

- MA.JJB:2-1 Understand the concept of a function and use function notation.
- MA.JJB:2-2 Perform addition, subtraction, multiplication, division and composition of functions.
- MA.JJB:2-3 Interpret the dependent and independent variables in the context of functions.
- MA.JJB:2-4 Create and interpret expressions for functions in terms of the situations they model including selecting appropriate domains for these functions.
- MA.JJB:2-5 Understand the relationship between a function and its graph.
- MA.JJB:2-6 Find the domain, including implied domains, and the range of a function.
- MA.JJB:2-7 Analyze functions using different representations. (verbal, graphic, numeric, algebraic).
- MA.JJB:2-8 Solve applications and create models involving 2x2 systems of linear equations using both graphical and algebraic models.
- MA.JJB:2-9 Use linear inequalities and systems of linear inequalities in two unknowns to create models.
- MA.JJB:2-10 Graphically identify solutions sets to linear inequalities or systems of inequalities.

MA.JJB:3 Students will demonstrate an understanding of factoring.

- MA.JJB:3-1 Solve application problems and create models involving polynomial equations.
- MA.JJB:3-2 Factor quadratic polynomials over the rational numbers and identify prime/irreducible polynomials over the rational numbers.
- MA.JJB:3-3 Apply standard factoring techniques to polynomials (GCF, grouping, trinomials, binomials, difference of squares, difference of cubes).
- MA.JJB:3-4 Solve equations by factoring.

MA.JJB:4 Students will demonstrate an understanding of rational functions.

- MA.JJB:4-1 Solve applications and create models involving rational equations.
- MA.JJB:4-2 Simplify rational expressions.
- MA.JJB:4-3 Add, subtract, multiply, and divide rational expressions.
- MA.JJB:4-4 Simplify complex fractions.
- MA.JJB:4-5 Solve rational equations.
- MA.JJB:4-6 Solve rational inequalities algebraically.

MA.JJB:5 Students will demonstrate an understanding of radical functions.

- MA.JJB:5-1 Solve applications and create models involving radical equations.
- MA.JJB:5-2 Convert between radical and rational exponent notation.
- MA.JJB:5-3 Simplify expressions involving radicals and rational exponents using appropriate exponent rules.
- MA.JJB:5-4 Add, subtract, and multiply radicals.
- MA.JJB:5-5 Rationalize numerators and denominators of rational expressions.
- MA.JJB:5-6 Solve equations involving radical expressions.
- MA.JJB:5-7 Add, subtract, multiply, and divide complex numbers.

MA.JJB:6 Students will demonstrate an understanding of polynomial functions.

- MA.JJB:6-1 Solve quadratic equations by factoring, completing the square, square root property, and the quadratic formula.
- MA.JJB:6-2 Graph quadratic functions and be able to determine the quadratic function from the graph.
- MA.JJB:6-3 Understand the relationship between zeros and factors of a polynomial of degree 2 and higher.
- MA.JJB:6-4 Solve polynomial inequalities of degree 2 and higher.

MA.JJB:7 Students will demonstrate an understanding of exponential functions.

- MA.JJB:7-1 Solve simple applications and create simple models involving exponential equations.
- MA.JJB:7-2 Distinguish exponential growth from linear and polynomial growth.
- MA.JJB:7-3 Graph and recognize the graph of exponential functions of the form $f(x) = C \cdot b^x$.
- MA.JJB:7-4 Solve simple exponential equations numerically.
- MA.JJB:7-5 Solve simple exponential equations algebraically.
- MA.JJB:7-6 Graph logarithmic functions.
- MA.JJB:7-7 Write logarithmic functions using exponential notation and vice-versa.
- MA.JJB:7-8 Solve logarithmic equations using the equivalent exponential form.
- MA.JJB:7-9 Find the inverse of a given function.

NOTE: Material that is covered in JJC Math 098 that is NOT included in the curriculum for this transition course are variation, compound inequalities, and absolute value equations and inequalities