Math: Operations and Algebraic Thinking: Use Functions to Model Relationships

Students:	DesCartes Statements:
Students:	**RIT 261-270:** • Analyzes the properties and characteristics of exponential functions • Determines the minimum and maximum of a quadratic function • Models real life functions using function notation • Writes linear equations, given slope and point on a line • Writes the equation of the line when given the graph of the line
Students:	**RIT 251-260:** • Analyzes the properties and characteristics of exponential functions • Determines slope from graphs • Determines slope from ordered pairs and tables • Determines the domain and range of a function • Determines the effects of parameter changes on functions • Determines the graph of a line when given the equation • Determines the minimum and maximum of a quadratic function • Determines the vertex of a parabola • Determines x- or y-intercept of a given linear equation • Distinguishes between linear and nonlinear functions (analysis) • Identifies and describes situations with varying rates of change • Identifies the equation of a parabola • Investigates, describes, and predicts the effects of parameter changes on the graphs of exponential functions • Models real life functions using function notation • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Rewrites an equation for a line in standard form • Uses an algebraic expression to represent a triangular number pattern • Uses graphs to represent functions and interpret slope • Writes linear equations, given two points on a line • Writes the equation of the line when given the graph of the line
Students:	**RIT 241-250:** • Analyzes the properties and characteristics of exponential functions • Determines the domain and range of a function • Determines the minimum and maximum of a quadratic function • Determines the x- and/or y-intercept of an equation of a function • Determines x- or y-intercept of a given linear equation • Identifies and describes situations with varying rates of change • Models real life functions using function notation • Performs operations on functions • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Represents growing arithmetic patterns using algebraic expressions or equations • Solves problems involving complex functions • Solves quadratic equations using concrete models and tables • Uses tables to determine function equations • Writes linear equations when given ordered pairs • Writes the equation of a horizontal or vertical line when given the graph of the line
Students:	**RIT 231-240:** • Identifies the graph type, given equations of linear and nonlinear functions • Interprets data given in line graphs to solve problems • Recognizes and extends arithmetic sequences (predicts nth term) • Recognizes and extends the Fibonacci sequence • Represents geometric sequences using written descriptions in recursive terms (present term, next term) • Represents real-world functions using an equation • Solves problems involving simple functions and using complex functions • Uses mapping diagrams to represent functions • Uses tables to determine function equations • Writes linear equations when given ordered pairs • Writes the equation of a horizontal or vertical line when given the graph of the line

Students:	**RIT 221-230:** • Extends a growing pattern of triangular numbers, defined by objects or diagrams • Looks for a growing pattern to solve a problem • Represents geometric sequences using written descriptions in recursive terms (present term, next term) • Solves problems involving simple functions
Students:	**RIT 211-220:** • Completes a function table given a simple rule (e.g., x + 2) • Interprets data in line graphs (e.g., change over time) • Looks for a growing pattern to solve a problem • Solves problems involving simple functions
Students:	**RIT 201-210:** • Completes a function table given a simple rule (e.g., x + 2) • Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels) • Extends a growing arithmetic pattern, defined by objects or diagrams • Predicts from simple charts and tables
Students:	**RIT 191-200:** • Analyzes a growing, arithmetic pattern with numbers to determine the rule • Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels) • Extends a growing arithmetic pattern, defined by objects or diagrams • Reads data in a line graph - no calculations
Students:	**RIT 181-190:** • Analyzes a growing, arithmetic pattern with numbers to determine the rule • Extends a growing arithmetic pattern, defined by numbers • Identifies transformations of plane figures (translations/slides) • Reads data in a line graph - no calculations
Students:	**RIT 171-180:** • Analyzes a growing, arithmetic pattern with numbers to determine the rule • Extends a growing arithmetic pattern, defined by numbers