Math: Algebra, Functions, Expressions & Equations: Use Functions to Model Relationships

Students:	DesCartes Statements:
Students:	**RIT Above 260:** • Writes the equation of the line when given the graph of the line • Determines the minimum and maximum of a quadratic function
Students:	**RIT 251-260:** • Writes the equation of the line when given the graph of the line • Determines the graph of a line when given the equation • Determines slope from graphs • Determines slope from ordered pairs and tables • Interprets the meaning of slope and intercepts in problem solving situations • Identifies discriminants and roots • Uses graphs to solve systems of linear equations • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation • Distinguishes between linear and nonlinear functions (analysis) • Uses graphs to represent functions and interpret slope • Determines the vertex of a parabola • Investigates, describes, and predicts the effects of parameter changes on the graphs of exponential functions • Determines the effects of parameter changes on functions • Determines the domain and range of a function
Students:	**RIT 241-250:** • Uses an algebraic expression to represent a triangular number pattern • Identifies and describes situations with varying rates of change • Uses tables to determine function equations • Represents a real-world function using a complex equation (e.g., variables on both sides, distributive, rational) • Models real life functions using function notation • Determines the x- and/or y-intercept of an equation of a function • Performs operations on functions • Solves problems involving complex functions • Determines the domain and range of a function
Students:	**RIT 231-240:** • Predicts from charts and tables • Recognizes and extends arithmetic sequences (predicts nth term) • Recognizes and extends the Fibonacci sequence • Represents real-world functions using an equation • Uses tables to determine function equations • Completes a function table according to a rule • Models real life functions using function notation • Identifies the graph type, given equations of linear and nonlinear functions • Solves problems involving complex functions
Students:	**RIT 221-230:** • Looks for a growing pattern to solve a problem • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations • Extends a growing pattern of triangular numbers, defined by objects or diagrams • Represents geometric sequences using written descriptions in recursive terms (present term, next term) • Uses mapping diagrams to represent functions • Completes a function table according to a rule
Students:	**RIT 211-220:** • Looks for a growing pattern to solve a problem • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations • Extends a repeating pattern of geometric shapes in a grid • Extends a growing geometric pattern - using numbers • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...)

	• Extends, or completes, growing patterns defined by equations or number facts • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...) • Identifies rules and applies them to new patterns • Determines the rule and completes a simple function machine output • Uses mapping diagrams to represent functions
Students:	**RIT 201-210:** • Looks for a linear pattern to solve a problem • Use patterns and their generalizations to make and justify inferences and predictions • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations • Extends a growing arithmetic pattern, defined by objects or diagrams • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...) • Extends a pattern formed by rotating a geometric figure • Uses mapping diagrams to represent functions
Students:	**RIT 191-200:** • Extends a growing arithmetic pattern, defined by objects or diagrams • Completes a growing arithmetic pattern using models by identifying the missing members • Extends a decreasing arithmetic patterns • Extends patterns formed by letters
Students:	**RIT 181-190:** • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern using models by identifying the missing members • Completes arithmetic growth patterns in number tables by identifying the missing elements • Extends a decreasing arithmetic patterns
Students:	**RIT 171-180:** • Identifies missing numbers in a series through 100 • Extends repeating patterns - geometric shapes • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern by naming missing members
Students:	**RIT Below 171:** • Identifies missing numbers in a series through 100 • Extends repeating patterns - geometric shapes • Completes a growing arithmetic pattern by naming missing members