Algebra 1B Unit 04: Functions

Content Area: **Math**
Course(s): **Algebra I B**
Time Period: **Semester 1**
Length: **4 cycles**
Status: **Published**

Unit Introduction

Standards

MA.F-BF.A.2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.
MA.F-BF.A.1a	Determine an explicit expression, a recursive process, or steps for calculation from a context.
MA.F-IF.A.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x. The graph of f is the graph of the equation $y = f(x)$.
MA.F-IF.A.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
MA.F-IF.A.3	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.
MA.F-IF.B.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
MA.F-IF.B.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.
MA.F-LE.A.2	Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
MA.A-REI.D.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
MA.A-SSE.A.1a	Interpret parts of an expression, such as terms, factors, and coefficients.

Essential Questions

- Can functions describe real-world situations?
- How can you represent and describe functions?

Content

- Determining Domain and Range from a Graph

- Graphing a Function Rule
- Patterns and Linear Functions
- Patterns and Nonlinear Functions
- Relations and Functions
- Using Graphs to Relate Two Quantities
- Writing a Function Rule

Skills

- Analyzing a Graph
- Classifying Functions as Linear or Nonlinear
- Evaluating a Function
- Extending Sequences
- Finding the Range of a Function
- Graphing a Function Rule
- Graphing a Real-World Function Rule
- Graphing Nonlinear Function Rules
- Identifying a Reasonable Domain and Range
- Identifying an Arithmetic Sequence
- Identifying Continuous and Discrete Graphs
- Identifying Functions Using Mapping Diagrams
- Identifying Functions Using the Vertical Line Test
- Matching a Table and a Graph
- Representing a Geometric Relationship
- Representing a Linear Function
- Representing Patterns and Nonlinear Functions
- Sketching a Graph
- Writing a Function Rule
- Writing a Nonlinear Function Rule
- Writing a Recursive Formula From an Explicit Formula
- Writing an Explicit Formula
- Writing an Explicit Formula From a Recursive Formula
- Writing and Evaluating a Function Rule