

# Unit #1: Functions

Content Area: **Mathematics**  
Course(s): **PreCalc Trig A**  
Time Period: **Semester 1**  
Length: **3 weeks**  
Status: **Published**

## Standards

---

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.K-12.4	Model with mathematics.
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-IF.C.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.

## Enduring Understandings

---

Students will understand that a relation is a function when every  $x$  value has a unique  $y$  value.

Students will be able to distinguish when a relation, graph, or equation is a function.

## Essential Questions

---

What is a function?

How can you determine if a relation, graph, or equation represents a function?

## Knowledge and Skills

---

- Define function using mathematical symbols
- Identify whether relations, graphs, or equations represent functions.
- State domain and range of functions.
- Graph parent functions.

- Graph translations/reflections/shrinks/stretching to parent functions.
- Graph functions with restricted domains.
- Graph split-rule functions.
- Perform operations to functions.
- Find domain of algebraic functions.
- Graph algebraic functions (sum/difference/product/quotient of functions) with proper domain.
- Evaluate composite functions.
- Find inverse functions.
- Graph inverse functions.

## **Transfer Goals**

---

Recognize and solve practical or theoretical problems involving mathematics, including those for which the solution approach is not obvious, by using mathematical reasoning and strategic thinking.

## **Resources**

---

1. Pre-Calculus with Limits - Aufmann
2. Trigonometry 6th edition - Lial
3. Classkick
4. Khan Academy
5. PurpleMath
6. KutaSoftware
7. CK-12
8. Quizlet
9. Albert I/O
10. Desmos
11. Problem Attic

