Learning Targets

Functions

Lesson 1: Describing and Graphing Situations

- I can explain when a relationship between two quantities is a function.

- I can identify independent and dependent variables in a function, and use words and graphs to represent the function.

- I can make sense of descriptions and graphs of functions and explain what they tell us about situations.

Lesson 2: Function Notation

- I can use function notation to express functions that have specific inputs and outputs.

- I understand what function notation is and why it exists.

- When given a statement written in function notation, I can explain what it means in terms of a situation.

Lesson 3: Interpreting & Using Function Notation

- I can describe the connections between a statement in function notation and the graph of the function.

- I can use function notation to efficiently represent a relationship between two quantities in a situation.

- I can use statements in function notation to sketch a graph of a function.

Lesson 4: Using Function Notation to Describe Rules (Part 1)

- I can make sense of rules of functions when they are written in function notation, and create tables and graphs to represent the functions.

- I can write equations that represent the rules of functions.

Lesson 5: Using Function Notation to Describe Rules (Part 2)

- I can use technology to graph a function given in function notation, and use the graph to find the values of the function.

- I know different ways to find the value of a function and to solve equations written in function notation.

- I know what makes a function a linear function.

Lesson 6: Features of Graphs

- I can identify important features of graphs of functions and explain what they mean in the situations represented.

- I understand and can use the terms "horizontal intercept," "vertical intercept," "maximum," and "minimum" when talking about functions and their graphs.

Lesson 7: Using Graphs to Find Average Rate of Change

- I understand the meaning of the term "average rate of change."

- When given a graph of a function, I can estimate or calculate the average rate of change between two points.

Lesson 8: Interpreting and Creating Graphs

- I can explain the average rate of change of a function in terms of a situation.

- I can make sense of important features of a graph and explain what they mean in a situation.

- When given a description or a visual representation of a situation, I can sketch a graph that shows important features of the situation.

Lesson 9: Comparing Graphs

- I can compare the features of graphs of functions and explain what they mean in the situations represented.

- I can make sense of an equation of the form $f(x) = g(x)$ in terms of a situation and a graph, and know how to find the solutions.

- I can make sense of statements about two or more functions when they are written in function notation.

Lesson 10: Domain and Range (Part 1)

- I know what is meant by the "domain" and "range" of a function.

- When given a description of a function in a situation, I can determine reasonable domain and range for the function.

Lesson 11: Domain and Range (Part 2)

- When given a description of a function in a situation, I can determine reasonable domain and range for the function.

Lesson 12: Piecewise Functions

- I can make sense of a graph of a piecewise function in terms of a situation, and sketch a graph of the function when the rules are given.

- I can make sense of the rules of a piecewise function when they are written in function notation and explain what they mean in the situation represented.

- I understand what makes a function a piecewise function.

Lesson 13: Absolute Value Functions (Part 1)

- Given a set of numerical guesses and a target number, I can calculate absolute errors and create a scatter plot of the data.

- I can analyze and describe features of a scatter plot that shows absolute error data.

- I can describe the general relationship between guesses and absolute errors using words or equations.

Lesson 14: Absolute Value Functions (Part 2)

- I can describe the effects of adding a number to the expression that defines an absolute value function.

- I can explain the meaning of absolute value function in terms of distance.

- When given an absolute value function in words or in function notation, I can make sense of it, and can create a table of values and a graph to represent it.

Lesson 15: Inverse Functions

- I understand the meaning of "inverse function" and how it could be found.

- When given a linear function that represents a situation, I can use words and equations to describe the inverse function.

Lesson 16: Finding and Interpreting Inverse Functions

- I can explain the meaning of an inverse function in terms of a situation.

- When I have an equation that defines a linear function, I know how to find its inverse.

Lesson 17: Writing Inverse Functions to Solve Problems

- I can write a linear function to model given data and find the inverse of the function.

- When given a linear function defined using function notation, I know how to find its inverse.