C2.0 Algebra 1 Unit 5 – Generalizing Function Properties

Topic	Overview
Topic 1: Function Families	Students expand their experience with linear, quadratic, and exponential functions to include more specialized functions—absolute value, step, and those that are piecewise-defined. They select from among these models to model phenomena and solve problems. ***Concepts:*** • Create a story context given the graph of a piecewise function using knowledge of domain and linear functions. • Write a set of equations given a graph of a piecewise function. • Interpret the slope of each piece of a piecewise function. • Evaluate piecewise functions for specific values of the domain in context. • State the domain and the range of a function in context of the problem. • Graph a piecewise function given the equation. • Write a step function and graph a step function given a verbal description. • Evaluate a step function in context. • Determine the domain and range of a step function in context. • Describe and evaluate the greatest integer function, the least integer function, and fractional part function verbally and symbolically. • Determine the domain and range of the greatest integer function, the least integer function, and fractional part function. • Write piecewise linear absolute value functions from a graph and from an absolute value function. • Graph absolute value functions given a piecewise or an absolute value equation. • Write piecewise quadratic absolute value functions from a graph. • Graph absolute value functions given an absolute value equation. • Compare the parent quadratic function, $y = x^2$, to the square root function, $y = \sqrt{x}$, and do the same with cubic, $y = x^3$, and cube root, $y = \sqrt[3]{x}$, functions. • Graph square root and cube root functions, taking into consideration any constraints on the domain and range. • Graph transformations of square root and cube root functions.