

## Algebra 2 Honors Unit 6: Function Operations

**Universal Essential Question: Why is modeling phenomena essential?**

**Goals of the Unit: Perform operations on functions to build new functions.**

Learning Objectives	Self-Rating, what you understand/don't yet understand and (last column only) how you learned it		
At the completion of this unit, I should ...	0 – I have no idea. 1 – I cannot solve problems yet but I am beginning to understand the strategies 2 – I can solve problems but do not yet know why the math works. 3 – I understand why the math works and can solve most problems but still make mistakes. 4 – I understand why the math works and can consistently and accurately solve problems.		
<b>Know</b>			
– The vocabulary related to function operations			
– Graphs and key features of parent functions			
<b>Be able to</b>			
– Graph parent functions and identify key features of the graph (domain/range, intercepts, asymptotes, increasing/decreasing intervals, positive/negative intervals, relative maxima/minima, symmetries, end behavior)			
– Use function notation to evaluate functions and interpret statements in a context			
– Perform function operations – add, subtract, multiply, and divide			
– Recognize even and odd functions from their graphs and algebraic expressions and describe the symmetry of odd and even functions.			
– Create a new function by composing two or more functions			
– Find inverse functions graphically and algebraically, restricting domains if needed to create an invertible function			
– Determine the values of functions and their inverses from a table or graph			
– Verify two functions are inverses			
<b>Understand</b>			
– The relationships between a function and its inverse			

## Vocabulary of Function Operations

Positive and negative intervals of a graph

Even function

Odd function

Symmetry of functions

Composition of functions

Inverse function

Invertible / non-invertible

## Reflection

1. Create Knowledge Cards for the following function operations: addition and subtraction; multiplication; division; composition; and inverse.

Side 1: Write the function operation and a symbol, sketch, or phrase that represents the function operation (to help you remember it)

Side 2: Explain the function operation in detail. Include characteristics of the operation; how the operation is performed; effect of the operation on the symbolic form, the graph, and data in a table; and symbols used to describe the operation. Be sure to include an example.

2. Give two examples of how the activities in this unit answer the Essential Question and explain your selections.