Algebra Unit 4: Functions and Function Notation

Common Core Standards:
<mark>F.IF.1: Understand the concept of a function. (Claim: 1, 2, 3)</mark>
F.IF.2: Use function notation. (Claim: 1, 2)
F.IF.5: Relate domain and range to the graph and the quantities they describe. (Claim: 1, 2, 3, 4)
F.BF.1: Write a function that describes a relationship between two quantities. (Claim: 1, 2, 4)
F.LE.5: Interpret expressions for functions in terms of the situation they model. (Claim: 4)

Timeline: 17 days

Textbook Lessons: enVision 3-1 and 3-2

Vocabulary:

coefficient	*coordinate plane*	*decreasing interval*	*domain*
equation	*expression*	*factor*	*function*
increasing interval	*input*	*interval*	*linear*
ordered pair(s)	*output*	*range*	*real number*
scale (axis)	*relation*	*Vertical Line Test*	*table*
x-intercept	*y-intercept*		

SMART GOAL:

70% of students will demonstrate at least proficiency on the summative assessment for interpreting a function through a table and graph and evaluating a function.

ALL students need to be able to evaluate a function given an input. All students need to be able to identify a function as having exactly one input for every output given a graph and table.

Engagement Strategies

http://ccssmathactivities.com/engaging-activities/

Student Talk:
This relationship _____(does/ does not) represent a function because…

The pattern I see in the (table/ graph/ data) is…

The _____(domain/ range) is _____ because...

This _____(input/ output) appears _____(once/ more than once) because…

Unit 2A Functions and Function Notation Booklet

Sequential Learning Targets:
1. I can determine if a relation is a function from a table or graph. (1 day)
   This means I can…

       i.   use the vertical line test
      ii.   identify if an x-value matches to one or more y-values
- *Entry Task* (use on day 1)
- *IAB Exit Slip 1*
- 3-1 Reteach to Build Understanding
- Notes

2. I can evaluate a function given an input or solve when given an output. (2 days)
This means I can…
      i.   evaluate using equation, graph or table
      ii.   solve a multi-step equation when given the output of a function
- *Entry Task* (use on day ___)
- *Evaluating Functions*
- *Evaluate Functions from a Table and Graph*
- Climb the Ladder - Functions
- Exit Ticket
- Evaluating Functions-Possible Extension

Quiz on Targets 1 & 2

3. I can determine the domain and range of a function from a table, graph or real-world situation. (2 days)
This means I can…
      i.   write the domain and range of a function using set notation or an inequality.
      ii.   describe a reasonable domain and range for a real-world situation
- *Entry Task* (use on day 1 or 2)
- Domain Range Matching Activity
- Exit Ticket
- enVision 3-1
- Domain Range Matching.pdf
- LT3 Quick Check
- Appropriate Domain and Range
- Domain and Range Practice

4. I can interpret a function relating two quantities for a real-world situation. (2 days) (MP 2 and 7)
This means I can…
      i.   identify the independent and dependent quantities
      ii.   describe the meaning of the terms in the function as they connect to the real-world situation
      iii. Solve a real-world problem using the given function
      iv. Describe possible reasonable solutions
- *Entry Task* (use on day 1)
- *IAB Exit Slip 2*-pg 27 IAB booklet use printed graph, question 1 as visual
- *Story Problem Graphic Organizer*
- *Graphing Stories Student Template*

Applications of Functions

Quiz on Targets 3 & 4

Review [Review - Climb the Ladder - Tables Graphs and Equations](#) (1 day)
Task (1 day)
Test (1 day)

[Unit 2A Assessment](#)

Common Core Tasks:
● [Shelves Task](#) + [Rubric](#)
● [Walkway Task](#)

Intervention:
● [List of Prerequisite Skills](#)
● Using the coordinate plane
● Vocabulary and notation
● Pattern recognition

Extension:
● [Khan Academy](#)

TACA Data:
[Unit 2A TACA Data 2015-16](#)
[Unit 2A TACA Data 2016-17](#)
[Unit 2A TACA Data 2014-15](#)
[Unit 2A TACA Data 2017-18](#)
[Unit 2A TACA Data 2018-19](#)
[Unit 2A TACA Data 2019-20](#)