

Richmond Public Schools
Department of Curriculum and Instruction
Curriculum Pacing And Resource Guide – Unit Plan



Course Title/ Course #: Pre-Algebra Math 8

Unit Title/ Marking Period # (MP): Functions/ MP1

Start day: 32

Meetings (Length of Unit): 8 days

Desired Results ~ What will students be learning?

Standards of Learning/ Standards

8.14 The student will make connections between any two representations (tables, graphs, rules and words) of a given relationship.

8.17 The student will identify domain, range, independent variable and dependent variable in a given situation.

Essential Understandings/ Big Ideas

8.14 What is the relationship among tables, graphs, rules and words in modeling a given situation? Any given relationship can be represented by all four.

8.17 What are the similarities and differences among the terms domain, range, independent variable and dependent variable? The value of the dependent variable changes as the independent variable changes. The domain is the set of all input values for the independent variable. The range is the set of output values for the dependent variable.

Key Essential Skills and Knowledge

8.14

- Graph in a coordinate plane ordered pairs that represent a relation.
- Describe and represent relations and functions, using tables, graphs, words, and rules. Given one representation, students will be able to represent the relation in another form.
- Relate and compare different representations for the same relation.

8.17

- Apply the following algebraic terms appropriately: *domain, range, independent variable, and dependent variable.*
- Identify examples of the domain, range, independent variable, and dependent variable.
- Determine the domain of a function.
- Determine the range of a function.
- Determine the independent variable of a relationship.
- Determine the dependent variable of a relationship.

Vocabulary

Relation	Function Table
Function	x-axis
Domain	y-axis
Range	coordinate plane
Independent variable	
Dependent variable	
Input	
Output	

Assessment Evidence ~ What is evidence of mastery? What did the students master & what are they missing?

Assessment/ Evidence

Mulligan Checkpoint 8.14

Mulligan Checkpoint 8.17

Interactive Achievement

Compass Learning

HCPS Mini-Quizzes

Students need to be able to identify the domain and range from a table, graph, and rule(equation).

Students need to be able to match an equation to a graph and function table; a function table to a graph and equation; words to an equation, table and graph; and graph to a function table and equation.

Given an equation like $C=\pi D$, students need to determine the Independent and Dependent Variable.

Learning Plan ~ What are the strategies and activities you plan to use?

Learning Experiences/ Best Practice

Complete a foldable for function, domain, range, IV and DV along with examples.

Create a guided note sheet to create

1. Given a table-create the graph and equation or give them two options for equations and they have to pick.
2. Given an equation-create a function table and graph.
3. Given a graph-create or pick an equation and create a function table.

Have students to the HCPS Matching Functions, Graphs and Tables activity

Create puzzle pieces from colored card stock (hand draw them or use a die-cut) and have one representation on each puzzle piece.

Students have to put the puzzle pieces together. Have 3 or 4 sets of these in the same color, mix them all together in a baggie and have students match the relationships.

Complete the Illuminations Roller Coaster Through Functions activity.

Complete the Gizmo for Distance-Time Graphs

Have students interact with the Gizmo for introduction to functions.

Use Released Test Items or coach book for guided problems-on whiteboards, students will identify the domain and range for each representation you put up. Make sure students identify the domain and range from 1) ordered pairs, 2) function tables, 3) graphs

Use materials from the blog: [Math Equals Love](#) for foldable and sort ideas for Independent and Dependent Variables. Her documents are near the bottom of the post.

Use HCPS Worksheet: Functions, tables, and graph practice.

Use whiteboards to have students show their mastery to you by having them identify the IV and DV for the situation you have given to them.

Technology Integrations

Gizmo

Educational Games-under resources

Compass Learning

Allen Teachers

Brain Pop

Khan Academy

Resources

Text

Glencoe Pre-Algebra pages:

25-30 (Ordered Pairs and Relations)

33-37 (Word, Equations, Tables and Graphs)
399-404 (Functions)
410-415 (Representing Linear Functions)
433-436 (Slope)
Mulligan Math in Minutes 8.14
Mulligan Math in Minutes 8.17
SOL Coach Book Va Edition: pages 166-177

Technology

Gizmo-[Introduction to Functions](#)-Interactive Instructional Resource
Compass Learning-<https://www.thelearningodyssey.com> - M7237, M7239, M, 7242, M7245, AL092

Virginia Department of Education

VDOE-[Matching Representations](#)-Lesson Plan
VDOE-[Independent and Dependent Variables](#)-Lesson Plan

Other Sites

HCPS-[Multiple Representations](#) Instructional materials, practice page, assessments
HCPS-[Functions](#) Instructional materials, practice page, assessments
Regents Prep-[Vocabulary Lesson](#)
Illuminations-[Roller Coaster Through Functions](#)-Lesson Plan

Cross Curricular Connection

Science-Complete the Illuminations Roller Coaster Through Functions. It is a great connection to real world and science.
Science-Give examples of science fair projects the students may have done. Have them identify the IV and DV of the given situations.
English-Have students explain the differences between domain, range, IV and DV.
History-Discuss the causes and effects of a war.