

UNIT OF STUDY

Title: Equations, variables, and domain and range **Subject/Course:** Algebraic Connections **Length:** 9 days

Topic: CS2 unit 5

Grade: 12th

Designer: Prado

UNIT GOALS AND EXPECTATIONS

<p>IMPORTANT CONCEPTS/UNDERSTANDINGS:</p> <ul style="list-style-type: none"> ◆ Equations can be written using many different types of information ◆ Independent and dependent variables can be found from algebraic expressions, graph, ordered pairs, and tables of data ◆ Domain and range of a relation can be found from algebraic expressions, graphs, ordered pairs, and tables of data ◆ Equations may be stated verbally 	<p>ESSENTIAL QUESTIONS:</p> <ul style="list-style-type: none"> ◆ What is an equation? ◆ What is a variable? ◆ What is an independent and dependent variable? ◆ What is an algebraic expression? ◆ What is domain and range? ◆ How is the domain and range found in algebraic expressions, graphs, ordered pairs, and tables of data? ◆ How can we decide if a table of values represents a linear relation?
<p>STUDENT LEARNING EXPECTATIONS:</p> <p>LF.2.AC.3 Determine the independent and dependent variables, domain and range of a relation from an algebraic expression, graph, set of ordered pairs, or table of data</p> <p>LF.2.AC.7 Write an equation given 1) two points, 2) a point and y-intercept, 3) an x-intercept and y-intercept, 4) a point and slope, 5) a table of data, and 6) the graph of a line</p>	
<p>SPECIFIC DECLARATIVE KNOWLEDGE – What I know</p> <ul style="list-style-type: none"> ◆ Explain vocabulary words: equation, slope, linear table, graph, x-intercept, y-intercept, independent variable, dependent variable, domain, and range ◆ Know how to find equations when given two points, x and y intercepts, a point and y intercept, a point and a slope, a table of data, and the graph of a line ◆ Identify the domain and range of a relation from a graph, algebraic expression, set of ordered pairs, or table of data 	<p>SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do</p> <ul style="list-style-type: none"> ◆ Find the equation of a line given the intercepts, linear table, graph (m and b given) and a graph with two points given ◆ Find the independent and dependent variable from a graph, table, formula ◆ Find the domain and range from a graph, a set of coordinates, and a table ◆ Find additional points on a line given a point and the slope of the line.

UNIT ASSESSMENTS (Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)	
Traditional Assessments: Unit 5 Exam Vocabulary Quiz Quizzes	Other Evidence of Learning: Homework Class work Getting Started Exercises

ACTIVITIES AND LEARNING EXPERIENCES	Resources
<p>Find the slope and equation of a line given the x and y-intercepts</p> <ul style="list-style-type: none"> ◆ S will learn vocabulary using the 4-step process (x-intercept, y-intercept, slope, and equation) ◆ S will do Getting Started activity sheet ◆ T will model finding the slope between the x and y intercepts (using smart board and internet websites) ◆ S will do in-class worksheet on finding the slope between x and y intercepts ◆ T will go over worksheet ◆ T will model finding the equation of a line given the intercepts ◆ S will do in-class worksheet on finding the equation of a line given the intercepts ◆ T will go over worksheet , relate the worksheets to each other, and assign homework <p>Find the slope and equation of a line given a linear table</p> <ul style="list-style-type: none"> ◆ S will learn vocabulary word: linear table ◆ S will do Getting Started activity sheet ◆ T will model finding the slope of a linear table (using smart board and internet websites and graphmatica) ◆ S will do in-class worksheet on finding the slope of a linear table ◆ T will go over worksheet ◆ T will model finding the equation of a line given a linear table ◆ S will do in-class worksheet on finding the equation of a line given a linear table ◆ T will go over worksheet, relate the worksheets to each other, and assign homework <p>Find the equation of a line from a graph first given m and b then given two points</p> <ul style="list-style-type: none"> ◆ S will learn vocabulary word: graph ◆ S will do Getting Started activity sheet ◆ T will model finding the equation of a line from a graph when given m and b (using smart board and graphmatica) ◆ S will do in-class worksheet on finding the equation of a line from a graph when given m and b ◆ T will go over worksheet ◆ T will model finding the equation of a line when given two points 	<ul style="list-style-type: none"> ◆ 4-step vocabulary sheets ◆ Getting Started problems ◆ Worksheets on finding the slope and equation of a line given the x and y intercepts ◆ Smart board ◆ Internet websites (I will feel these in when I find some good ones) <ul style="list-style-type: none"> ◆ Getting Started problems ◆ Worksheets on finding the slope and equation of a line given a linear table ◆ Smart board ◆ Internet websites ◆ Graphmatica <ul style="list-style-type: none"> ◆ Getting Started problems ◆ Worksheets on finding the equation of a line from a graph given m and b ◆ Worksheet on finding the equation of a line given two points ◆ Smart Board ◆ Graphmatica

- ◆ S will do worksheet on finding the equation of a line given two points
- ◆ T will go over worksheet, relate the worksheets to each other, and assign homework

Find the independent and dependent variable from a graph and table

- ◆ S will learn vocabulary words: independent variable and dependent variable
- ◆ S will do Getting Started activity sheet
- ◆ T will model finding the independent and dependent variable from a graph using Smart board, graphmatica, and internet websites)
- ◆ S will do in-class worksheet on finding the independent and dependent variable from a graph
- ◆ T will go over worksheet
- ◆ T will model finding the independent and dependent variable from a table
- ◆ S will do in-class worksheet on finding the independent variable from a table
- ◆ T will go over worksheet and assign homework

- ◆ Getting Started problems
- ◆ Worksheets on finding independent and dependent variable from a graph and table
- ◆ Smart board
- ◆ Graphmatica
- ◆ Internet websites

Find the independent and dependent variable from a formula

- ◆ S will do Getting Started activity sheet
- ◆ T will model finding the independent and dependent variable from a formula
- ◆ S will do in-class worksheets on finding the independent and dependent variable from a formula
- ◆ T will go over worksheet
- ◆ T will review how to find the independent and dependent variable from graph, table, and formula
- ◆ S will do activity over all types and finding the independent and dependent variables in group setting
- ◆ T will assign homework

- ◆ Getting Started problems
- ◆ Worksheets on finding the independent and dependent variable from a formula
- ◆ Independent and dependent variable group activity

Find the domain and range from a graph

- ◆ S will learn vocabulary words: domain and range
- ◆ S will do Getting Started activity sheet
- ◆ T will model finding the domain from a graph (relating that domain is the x coordinate)
- ◆ S will do in-class worksheet on finding the domain from a graph
- ◆ T will go over worksheet
- ◆ T will model finding the range from a graph (relating that range is the y coordinate)
- ◆ S will do in-class worksheets on finding the range from a graph
- ◆ T will go over worksheet, relate the worksheets, and assign homework

- ◆ Getting Started problems
- ◆ Worksheets on finding the domain and range from a graph

Find the domain and range from a set of coordinates and a table

- ◆ S will do Getting Started activity sheet
- ◆ T will model finding the domain from a set of coordinates (reminding that domain is x and range is y)
- ◆ S will do in-class worksheet on finding the domain and range from a set of coordinates
- ◆ T will go over worksheet
- ◆ T will model finding domain and range from a table
- ◆ S will do in-class worksheet on finding the domain and range from a table
- ◆ T will go over worksheet and assign homework

- ◆ Getting Started problems
- ◆ Worksheets on finding the domain and range from a set of coordinates and a table
- ◆ Calculators

Career Connections	
Statistician, Banker, Business owner, and Warehouse coordinator	