Algebra – Unit 2CC Plan

Linear Relationships

**Big Ideas**

This unit will focus on the starting value and growth of linear functions. You will look for connections between the multiple representations of linear functions: table graph, equation and situation. In this chapter you will come to a deeper understanding of slope than you may have had in previous courses and you will explore the idea of slope as a rate of change.

**In this chapter, you will learn:**

· To connect the starting value and growth in geometric tile patterns with the slope and

y-intercept on a graph.

· How to measure the steepness of a line on a graph.

· The difference between lines that point upward, downward, are horizontal or vertical.

· How slope represents the speed in a real-life situation.

· How slope represents rate of change in situations that do not involve motion.

· How to find growth and starting value from various representations.

· How to find the equation of a line when given only two points on a line.

**DAY 1: Domain & Range (What can go in? What can come out?)**

Objectives

* Students will be able to describe the domain and range of a relation by examining an equation or graph.

Agenda

1. Review Homework.
2. Lesson 1.2.5cc, handout

Homework

1-78 thru 1-82

**DAY 2: How does it grow?**

Objectives

* Write linear algebraic equations relating the figure number of a geometric pattern and its number of tiles.

Agenda

1. Review Homework
2. Lesson 2.1.1, problems 2-1 thru 2-5

Homework

2-6 thru 2-9

**DAY 3: How can I measure steepness?**

Objectives

* Students will gain an abstract understanding of slope as they discover that slope is the change in y divided by the change in x, between any two points on a line. They will continue to connect growth and starting value to multiple representation of a linear function.

Agenda

1. Review Homework
2. Mini Quiz #1
3. Lesson 2.1.2, 2-11 through 2-16, extension 2-17 and 2-18

Homework

2-19, 2-20, 2-22, 2-23, 2-24

**DAY 4: How steep is it?**

Objectives

* Students will use slope triangles to both compare the relative steepness of lines and to build intuition about positive, negative and zero slopes.

Agenda

1. Review Homework
2. Section 2.1.3, problems 2-25 through 2-27 (b) and 2-30 (Save these posters!)

Homework

2-31 thru 2-35

**DAY 5: What information determines a line?**

Objectives

* Students will formalize *y = mx + b* form and explore what information is needed to determine a line.

Agenda

1. Review Homework.
2. Lesson 2.1.4, problems 2-36 thru 2-39
3. Learning Log Exit Slip (2-40)

Homework

2-41 thru 2-45

**DAY 6: What can rate of change represent?**

Objectives

* Students will understand speed as a rate and apply contextual meaning to *m* and *b*.

Agenda

1. Review Homework
2. Lesson 2.2.2, problems 2-53 to 2-55
3. Problem 2-56 & 2-57 class discussion if time

Homework

2-59, 2-61, 2-64, 2-65, 2-67

**DAY 7: How can I use *y=mx+b*?**

Objectives

* Students will practice finding slopes and writing linear equations while solving a challenging team puzzle

Agenda

1. Review Homework.
2. Mini Quiz #2
3. Lesson 2.2.3, problem 2-68 and 2-69

Homework

2-70 through 2-74

**DAY 8: How can the solutions help find an equation?**

Objectives

* Students will employ multiple methods to find the y-intercept of a line given its slope and one point on it. They will learn how to solve for the y-intercept to find the equation of a line algebraically.

Agenda

1. Review Homework.
2. Lesson 2.3.1, problems 2-75, 2-78, 2-79

Homework

2-82 thru 2-86

**DAY 9: What is the equation of the line?**

Objectives

* Students will use their knowledge of *y=mx+b* to find the equations of lines from two points on a table or graph

Agenda

1. Review Homework
2. Mini Quiz #3
3. Section 2.3.2, problems 2-87 and 2-88, Learning Log 2-89

Homework

2-90 to 2-94

**DAY 10: Team Test Assessment**

Objectives

* Successful team assessment on linear representations.

Agenda

1. Review Homework.

2. Unit 2cc Team Test

Homework

2-96 thru 2-100

**DAY 11: Finding *y = mx + b* from graphs and tables. (Green Globs)**

Objectives

* Students will reinforce their ability to find the equation of a graph from various sets of information.

Agenda

1. Review Homework.

2. Unit 2cc Extension Activity - Green Globs (handout)

Homework

Unit 2 Closure (CL2-101 thru CL2-110)

**DAY 12: Unit 2cc Individual Assessment**

Objectives

* Successful unit 2cc assessment on linear representations.

Agenda

1. Review Homework.

2. Unit 2cc Individual Test

Homework

None