**Geometry – Unit 3 Plan**

**SIMILARITY AND JUSTIFICATION**

**Big Ideas**

So far in geometry, you have been working on transforming, measuring, and describing shapes. In this unit, you will focus on comparing shapes. You will learn if two figures have the same shape they are called similar. You will explore how to determine whether two figures are similar and discover how to use information about one figure to learn more about a similar figure.

So far in geometry, you have also been learning the importance of justifying why something is true. In this unit, you will be introduced to ways to organize your ideas so that your justifications are logical and convincing.

**Key Learning Targets**

* Understand that shapes are similar if one is the image of the other under a dilation transformation.
* Recognize special relationships between shapes that are similar or congruent
* Determine if triangles are similar or congruent
* Recognize the relationship of the areas of similar figures
* Support mathematical statements using flowcharts and conditional statements

**Objectives**

* Learn if two figures have the same shape they are similar
* Determine that two figures must have equal angles to have the same shape
* Determine that multiplying lengths of shapes by a common number produces a similar shape
* Determine that similar shapes have proportional corresponding side lengths
* Understand that congruent shapes are similar and have a side ratio of 1
* Use equivalent ratios to find missing lengths in similar figures
* Examine the ratio of the perimeters and areas of similar figures
* Learn how to write similarity statements
* Learn the SSS ~ and AA~ and SAS ~ conjectures
* Learn how to use flowcharts to organize arguments

**DAY 1 - Tuesday 11/4/14**

Objectives:

* Learn if two figures have the same shape they are similar
* Determine that two figures must have equal angles to have the same shape
* Determine that multiplying lengths of shapes by a common number produces a similar shape
* Determine that similar shapes have proportional corresponding side lengths

Agenda

 Section 3.1.1 Problems 3-1 to 3-3, 3-5

 Section 3.1.2 Problem 3-10

Homework 3-5, 3-8, 3-17, 3-20

**DAY 2 - Thursday 11/6/14**

Objectives:

* Understand that congruent shapes are similar and have a side ratio of 1
* Use equivalent ratios to find missing lengths in similar figures
* Examine the ratio of the perimeters and areas of similar figures

Agenda

 Section 3.1.2 Problems 3-11 to 3-14

 Section 3.1.3 Problems 3-22 to 3-25 (3-25 find the ratio of the areas also)

Homework 3-18, 3-27, 3-28, 3-31

**DAY 3 - Wednesday 11/12/14**

Objectives:

* Use equivalent ratios to find missing lengths in similar figures
* Examine the ratio of the perimeters and areas of similar figures
* Learn how to write similarity statements

Agenda

 Warmup 3-26 (Find the ratio of the area also)

 **Mini-Quiz 3.1**

 Section 3.1.4 3-32 to 3-36

 Prepare for Performance Task

Homework 3-38, 3-39, 3-41, 3-42

**DAY 4 - Friday 11/14/14**

Objectives:

* Successful Assessment

Agenda

 Eiffel Tower Problem

 Ratio of area and perimeter of similar figures (8-72 figures are similar)

Homework: Complete classwork & Get a picture/cartoon to use for your similarity project (Bring to class)

**Tuesday 11/18 and Monday 11/24 Before Thanksgiving (Thursday 11/20 Shamu)**

Objective:

* Demonstrate proficiency with similarity concepts in an engaging artistic project

Agenda

 Similarity Project

Homework: Project due at the end of class on 11/24

**DAY 5 - Monday 12/1/14**

Objectives:

* Learn the SSS ~ and AA~ conjectures
* Learn how to use flowcharts to organize arguments

Agenda

 Section 3.2.1 Problems 3-44 to 3-46

 Section 3.2.2 Problems 3-53 to 3-55, 3-57

Homework 3-49, 3-50, 3-51, 3-52, 3-62

**DAY 6 - Wednesday 12/3/14**

Objectives:

* Learn the SSS ~ and AA~ and SAS~ conjectures
* Use flowcharts to organize arguments

Agenda

 Section 3.2.3 Problems 3-64, 3-66, 3-67

 Section 3.2.4 Problems 3-73 to 3-75

Homework 3-71, 3-80, 3-81, 3-82

**Day 7 - Friday 12/5/14**

Objectives:

* Learn the SSS ~ and AA~ and SAS~ conjectures
* Learn how to use flowcharts to organize arguments

Agenda

 Warmup 3-68
 **MiniQuiz 3.2**

 Section 3.2.5 Problems 3-83 to 3-86

 Section 3.2.6 Problems 3-93, 3-94

 Prepare for Team Test

Homework 3-90, 3-92, 3-96, 3-97, 3-100

**DAY 8 - Tuesday 12/9/14**

Objectives:

* Successful Assessment

Agenda

 Warm-up 3-79

 Team Test
 Closure Problems

Homework: Chapter 2 Closure Problems 2-103 to 2-110

**DAY 9 - Thursday 12/11/14**

Objectives:

* Successful Assessment

Agenda

 Test

Homework: Preview/Review Sheet