Fairfax Collegiate

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Intro to Geometry 7-9 Syllabus

Course Goals

1 Assess and Reinforce Geometry Knowledge
Students will be assessed on their current understanding of geometry and that knowledge will be reinforced throughout the course of the session.

2 Introduction to Geometry Material
Students will be introduced in brief to many topics in typical high school Geometry curricula. This course is meant to give students an initial look at the concepts and some practice, but to set them up for a successful year in high school Geometry.

Course Topics

1 Basic Geometric Definitions
Students will gain comfort with the definition of and use of many geometric definitions.

2 Angles
Students will practice recognizing and drawing different classifications of angles.

3 Congruent and Similar Triangles
Students will learn to recognize congruent figures and similar figures and recognize how angles and side lengths in those types of figures.

4 Pythagorean Theorem
Students will learn and practice utilizing the Pythagorean theorem including in the context of word problems.

5 Coordinate Plane Graphing
Students will practice graphing, finding slope, and using the distance formula on a coordinate plane.

6 Perimeter and Area
Students will find the perimeter and area of polygons.

7 Quadrilaterals
Students will learn to classify quadrilaterals based on their characteristics.

8 Polygons
Students will classify shapes as polygons and as convex or concave.

9 Circles
Students will work with many aspects of circles and finding the radius, diameter, and circumference of circles.

Course Schedule

Day 1

Introduction and Icebreaker
Students will be introduced to the instructor and to each other and play a couple of quick games. The instructor will also briefly review classroom rules.

Take Diagnostic
Students will take the diagnostic assessment to determine their placement within the course curriculum.

Basic Definitions
Students will use "Introduction to Geometry", by Richard Rusczyk to learn about basic geometric definitions.

Key To Geometry - Basic Definitions
Students will use the Key to Geometry books to be guided through practice and to practice lessons on their own.

Basic Definitions Activities
Students will complete some activities from various sections of the "Geometry Teachers Activities Kit" to reinforce or practice lessons of the day.

Day 2

Angles Definitions Worksheet
Students will use the worksheet to facilitate their review of definitions of angles.

Angles
Students will use "Introduction to Geometry", by Richard Rusczyk to learn about angles.

Key to Geometry - Angles
Students will use the Key to Geometry books to be guided through practice and to practice lessons on their own.

Angles Activities
Students will complete some activities from various sections of the "Geometry Teachers Activities Kit" to reinforce or practice lessons of the day.

Angles in Real Life
Students will create angles from real-life situations and compare the angles.

Day 3

Triangle Definitions Worksheet
Students will use this worksheet to learn and review various definitions of types of triangles and aspects of triangles.

Congruent and Similar Triangles
Students will use "Introduction to Geometry", by Richard Rusczyk to learn about congruent and similar triangles.

Key to Geometry - Congruent/Similar
Students will use the Key to Geometry books to be guided through practice and to practice lessons on their own.

Congruent and Similar Triangles Activities

Students will complete some activities from various sections of the "Geometry Teachers Activities Kit" to reinforce or practice lessons of the day.

Height of a Flagpole
Students will use similar triangles to find the height of a flagpole based on the length of its shadow and the shadow of a similar but smaller right triangle.

Day 4

Pythagorean Theorem
Students will use "Introduction to Geometry", by Richard Rusczyk to learn about the pythagorean theorem.

Triangle Illusion Worksheet
Students will look at ponder an illusion made with triangles and trapezoids that make up a rectangle.

Pythagorean Theorem Activities
Students will complete some activities from various sections of the "Geometry Teachers Activities Kit" to reinforce or practice lessons of the day.

Tangrams Activity
Students will create and use tangrams to create different shapes and diagrams out of component geometric shapes.

Day 5

Coordinate Planes
Students will use "Introduction to Geometry", by Richard Rusczyk to learn about coordinate planes.

Coordinate Plane Activities
Students will complete some activities from various sections of the "Geometry Teachers Activities Kit" to reinforce or practice lessons of the day.

Day 6

Perimeter and Area
Students will use "Introduction to Geometry", by Richard Rusczyk to learn about perimeter and area.

Perimeter and Area Activities
Students will complete some activities from various sections of the "Geometry Teachers Activities Kit" to reinforce or practice lessons of the day.

What Shape is Your Land Part 1
Students will learn an interesting trick about how a small sheet of paper can seemingly grow through the use of geometric principles.

What Shape is Your Land Part 2
Students will build on ideas learned in the first part of the activity to create different shapes and find their areas.

Day 7

Quadrilateral Definitions Worksheet

Students will use this worksheet to learn and review various definitions of quadrilaterals and aspects of quadrilaterals.

Quadrilaterals
Students will use "Introduction to Geometry", by Richard Rusczyk to learn about quadrilaterals.

Key to Geometry - Quadrilaterals
Students will use the Key to Geometry books to be guided through practice and to practice lessons on their own.

Quadrilaterals Activities
Students will complete some activities from various sections of the "Geometry Teachers Activities Kit" to reinforce or practice lessons of the day.

3D Drawing Activity
Students will practice honing their drawing skills by finding methods of drawing geometric shapes in three dimensions.

Day 8

Polygon Definitions Worksheet
Students will use this worksheet to learn and review the definition of terms related to polygons.

Polygons
Students will use "Introduction to Geometry", by Richard Rusczyk to learn about polygons.

Polygons Activities
Students will complete some activities from various sections of the "Geometry Teachers Activities Kit" to reinforce or practice lessons of the day.

Tesselations Activity
Students will use the tessellations of artist M.C. Escher to come up with tessellation ideas of their own.

Day 9

Circle Definitions Worksheet
Students will use the worksheet to reinforce their knowledge and understanding of vocabulary relating to circles.

Cirlces
Students will use "Introduction to Geometry", by Richard Rusczyk to learn about circles.

Key to Geometry - Circles
Students will use the Key to Geometry books to be guided through practice and to practice lessons on their own.

Circles Activities
Students will complete some activities from various sections of the "Geometry Teachers Activities Kit" to reinforce or practice lessons of the day.

Calculating Pi Activity
Students will complete an activity that shows them how Pi is calculated and they approximate Pi themselves.

Day 10

Take Final Assessment

Students will have an opportunity to show the growth and improvements they have made over the course of the session by taking the final assessment to see which topics they have improved on and which topics they still need to review more.

Enrichment Materials
Students will complete additional materials if they have completed all of the normal session lessons and activities. This can be good for advanced students or may be done with the whole class after the final assessment

Updated on 2/1/2016