

Arizona State Standards:

Strand 4: Geometry and Measurement

Concept 1: Geometric Properties->Analyze the attributes and properties of 2- and 3-dimensional shapes and develop mathematical arguments about their relationships.

P.O. 4: Distinguish between length, area, and volume, using two- and 3-dimensional geometric figures.

Concept 4: Measurement-Units of measure

-Geometric Objects

Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements

P.O. 2: Measure to the appropriate degree of accuracy.

Process Standard: Problem Solving->Build Mathematical knowledge through problem solving.

Connections->Recognize and apply mathematics in context outside of mathematics.

Lesson 1

Objective: Every student will be able to distinguish between area and perimeter and understand how to use the formulas for each through a smart board activity and small group activity with 100% accuracy.

Opening:

Read an excerpt from Castle by Macaulay and then a Smartboard presentation. The excerpt will include how the castle designers figure out where and how the castle walls will be built.

In class activity: The students will measure in feet (Strand 4, Concept 4, P.O.2) the necessary lengths and widths of the classroom, the classroom closet, and the top of their desk to find the area and perimeter of each. They will use rulers and measuring tape (Problem Solving)

Homework activity: The students will find the area of their bedroom, bathroom, and a room of their choice. (Connection)

Assessment: To see the accuracy of the students area and perimeter findings compared to mine. This will be done during the class activity.

Lesson 2

Objective: The students will use blocks to build structures to find perimeter and area of the shape with 100% accuracy.

Opening: The students will enter and write the area of their room in a special marked off section of the white board. The class will then create a graph of the size of the bedrooms.

Classroom activity: When the opening activity is complete, the students will be broken into teams of three. One will be the task master, another will be the materials keeper, and lastly the scribe. The students will then use blocks to create shapes; parallelograms, squares, and rectangles. They will then use their given formulas and find the perimeter and area of the shapes and then prove

their answers by using string to measure perimeter and by adding the blocks to find area. (Strand 4, Concept 1, P.O. 4) (Problem Solving)

Assessment: Observation during classroom activity

Homework: A worksheet giving extra practice on finding Area and Perimeter of a parallelogram, square, and rectangle.

Lesson 3

Objective: The students will be able to use their knowledge out in the real world.

Class activity: Field trip to the zoo. (Call your local zoo educational coordinator to The students will be toured around the zoo. During the tour, the leader will explain how the zoo is required to create their exhibit and how they use everyday measurement. The leader will explain, for example the zoo must have 300 square feet for one tiger. For each additional tiger they must have 50 % more. The students will have a worksheet to work on through out the zoo. (Connections)

Homework: Finish the zoo worksheet

Lesson 4

Objective: The students will be able to apply their knowledge by solving real life problems

Class Activity: The students will begin working on the Zoo Project (connections). The Zoo project will require the students chose an animal for their zoo. They must design an exhibit according to the American Zoo and Aquarium Association. They must find how much area they have and how much fencing they need (problem solving). They also must choice which kind of fencing they want for their exhibit (glass, bars, or a combination of the two. They also have a budget they must do all of this with. The entire assignment and rubric is attached. In class today they will begin by doing research and gathering ideas. The entire assignment will be due two weeks from today.

Assessment: Rubric