

Zome System

Builds Genius!

What Is Area?

Mathematics Basic Concept

Lesson Objective:

Learning the concept of **area**. For young students, area is not going to be an exact measurement; understanding the general concept of area is more important at this point.

Prerequisite Skills:

Knowledge of basic geometric shapes. If students will build their own shapes, they need to have played with Zome System before.

Time Needed:

One class period of 45-60 minutes.

Materials Needed:

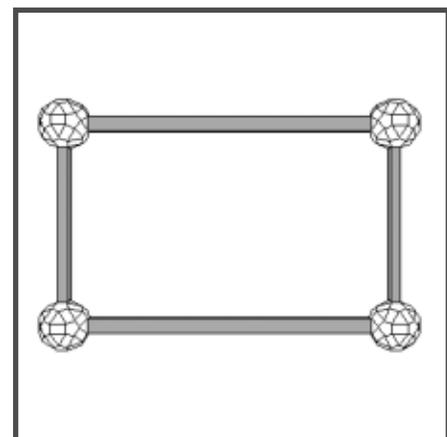
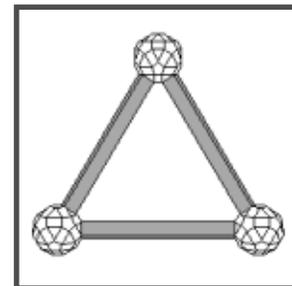
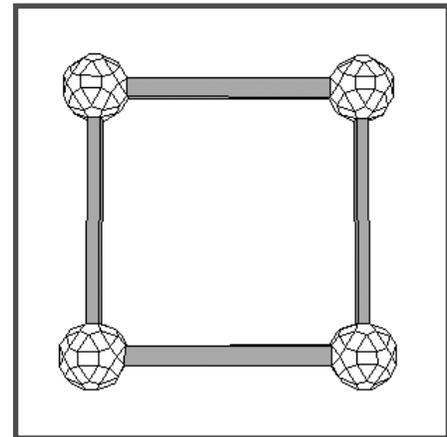
- One or two Zome System Creator Kits for 25-30 students.
- Large bag of dried lima beans, styrofoam peanuts, or similar objects.

Procedure:

Introduce the term **area**. Explain what area of an object means. *How could we find the area of a square? How would you describe the area once you found it? Can anyone think of how we could use these lima beans to find the area of a square?*

Explain to the class that they will use lima beans as the unit to determine the area of certain shapes. Model how to determine the area of a square using the beans (i.e. fill the square shape with lima beans and then count how many beans were used.)

For first and second graders, divide the class into teams - square, rectangle and triangle teams. Have each team build the shapes they will work with. Each team will fill their shapes with beans to determine its area. One student on each team should act as record keeper. He or she should record the number of beans it took to find the area of one



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of their shapes. For kindergartners, the teacher will do this in a large circle with all students. Once the area has been determined for the different shapes, discuss what was learned. *Which shape has the most area? Which shape has the smallest area? Why? Can anyone think of another type of unit that could be used to measure the area of a shape? Why do you think an area rug is called an area rug?*

Assessment:

Observe the students while they work in their teams. Question them on their findings. For younger students, the activity is based on exposing them to the area concept. Older students (i.e., second and third graders) can write in their math journals about area. To meet the standard, students will understand the concept of area. To exceed the standard, students will understand that the size of the area can be calculated using numbers and an equation.

Standards Addressed:

- * Mathematics standards addressing **geometry and spatial sense** (NCTM Standard 9).
- * Mathematics standards addressing **measurement** (NCTM Standard 10).

Transfer Possibilities:

Use of standard measurement units to determine area. Exploration of the concept of volume (“Volume for Beginners”).

