

Algebra/Geometry Institute Summer 2004

Lesson Plan 2

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School: Oakhurst Junior High School
Clarksdale, Mississippi
Grade Level: 7th

1 Teaching objective

The student will find the surface area of various sizes of boxes.

2 Instructional activities

1. The teacher will tell the students that they will be finding surface area. The teacher will tell the students that finding surface area is the same as finding area except that surface area measures the number of squares on all of the sides(faces) of a three dimensional figure.
2. The teacher and students will discuss the difference between a two dimensional object and a three dimensional object. A key point to be made is that a two dimensional object has length and width; whereas, a three dimensional object has length, width, and height(depth).
3. The teacher will hold up a cube or box and ask if it is two dimensional or three dimensional. The students should respond with three dimensional. If not, give more examples of two and three dimensional objects and discuss the differences.
4. The teacher will have the students work in pairs to complete the activity on finding surface area. Each pair of students will be given graph paper, tape, scissors, and two boxes which are different sizes.
5. The students will measure, cut, and tape graph paper to the boxes. They will count the number of squares on each side(face) and record the number

they get on each side. When finished with all six sides(faces), they will add the numbers recorded on the six sides to find the surface area of the box.

6. When students have been given an adequate amount of time to finish, the teacher and students will have a discussion about what they discovered or learned from the activity. The students should have gained an understanding that area describes flat surfaces and that area is always measured in square units. To find surface area, simply find the area of all sides(faces) and add the area for all sides together.
7. Have students write in their journals. Students will choose a box from the activity, and explain how they found the surface area. They will also explain how the area of a polygon and the surface area of a three dimensional figure are alike.

***An extension of this lesson would be to have the students work with their same partner to discuss how they could find surface area without the use of graph paper. They could write the steps and/or write a formula for finding surface area. Afterwards, each group would share their findings with the other groups.

3 Materials

graph paper, boxes(2 different sizes for each group), tape, scissors, journals

4 Assessment

*checklist(oral responses about area, two and three dimensional objects)

*activity answers(correct or incorrect)

*journal entry(Choose one of the boxes from the activity. Explain how you found the surface area. Explain how area and surface area are alike.)

Does the entry show understanding of surface area?