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T. R. Sanders Elementary/Hollandale
6th Grade



1. Teaching objective(s):

- ✖ The student will find the area of rectangles and squares

2. Instructional Activities:

Read the objective to the students.

Put students in groups of two. Give each group a geoboard and rubber bands.

1. Tell students to make a rectangle on the geoboard like the one on the overhead
2. How many units wide and long is the rectangle?

i. 1 unit wide by 2 units long

Allow time for discussion of the answers.

- How many square units are in the rectangle?
ii. 2 square units

Discuss the square unit. Allow time to discuss answers.

3. Tell the students to make a square on the geoboard like the one on the overhead.

- How many units wide and long is the square?
i. 2 units wide by 2 units long

Allow time for discussion of the answers.

- How many square units are in the square?
ii. 4 square units

Allow time for student discussion.

Tell the students:

One way to find the area of each rectangle or square is to count the number of square units inside the rectangle.

4. Make the following rectangles or squares on your geoboard. In your group, discuss the shape you make. Also, discuss how many units are in each shape. Teacher will write dimensions on overhead for students to make rectangles or squares on geoboard.

- | | | |
|-----------------------|-----------------------|-----------------------|
| 1. 1 unit by 3 units | 2. 1 unit by 1 unit | 3. 3 units by 4 units |
| 4. 3 units by 3 units | 5. 4 units by 2 units | 6. 5 units by 5 units |

Allow time for student discussion.

Ask: What is another way to find the area with the measurement of each side?

Multiply side by side—

Discuss with students that the sides are called the length and width

Discuss definition of length and width

- **Length--the longer or longest side of an object**
- **Width—the shorter or shortest side of an object**

✖ ✖ Note to teacher—The width and length definitions given are common to most text books. However, the length and width of a rectangle or square can be either dimension, long or short.

Allow time for student discussion. Draw rectangle and square on the overhead.

Discuss the length and width for each. Remind students that the length and width of a square are the same because all four sides of a square are equal.

Give students worksheet 1. Tell the students to work in pairs to complete the worksheet. Tell the students to use geoboards to create a model. Be ready to explain to the class the area of your model.

Ask—When would we need to know the area of something? Allow time for discussion and examples.

Tell the students—Imagine your mom is going to put a new floor in your bedroom. Mom will let you pick out the flooring if you can figure out how much flooring she will have to buy.

What do you need to know to find the solution?

Dimensions of your room—the width and the length

How will you figure how much flooring mom has to buy?

Find the area—multiply length times width?

Why?

To figure how much flooring it will take to cover the bedroom floor.

Enrichment—Using geoboard, create a polygon with an area of $5\frac{1}{2}$ units squared.

2. Materials and Resources:

Materials

- geoboard
- rubber bands
- overhead
- markers--overhead
- paper/pencils/crayons
- transparencies
- geoboard
- transparency
- worksheet 1
- assessment

Resources

- ✘ www.m-w.com
- ✘ Manfre, Edward, Moser, James M., Lobato, Joanne E., and Morrow, Lorna (1994) Heath Mathematics Connections Grade 6
- ✘ www.wou.edu
- ✘ www.mathforum.org

3. Assessment:

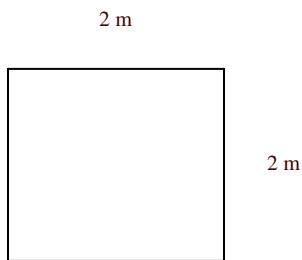
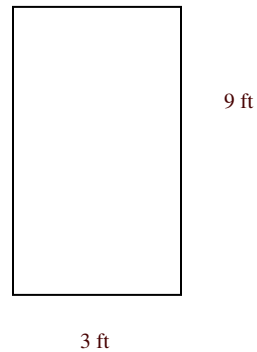
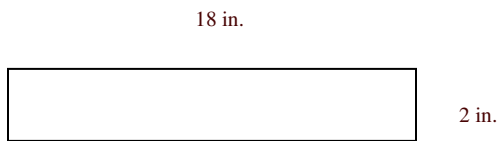
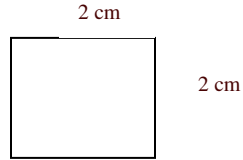
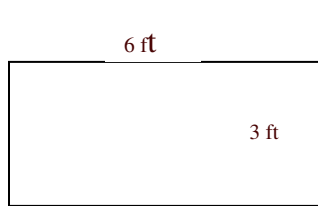
Teacher will observe students making rectangles and squares on geoboards. Teacher will ask questions and respond to answers while students are finding the area of rectangles and squares.

At the end of the week, teacher will give weekly test on area of rectangles and squares.

Attachment 2

Assessment—weekly test

Directions—identify each polygon. Find the area of each polygon.

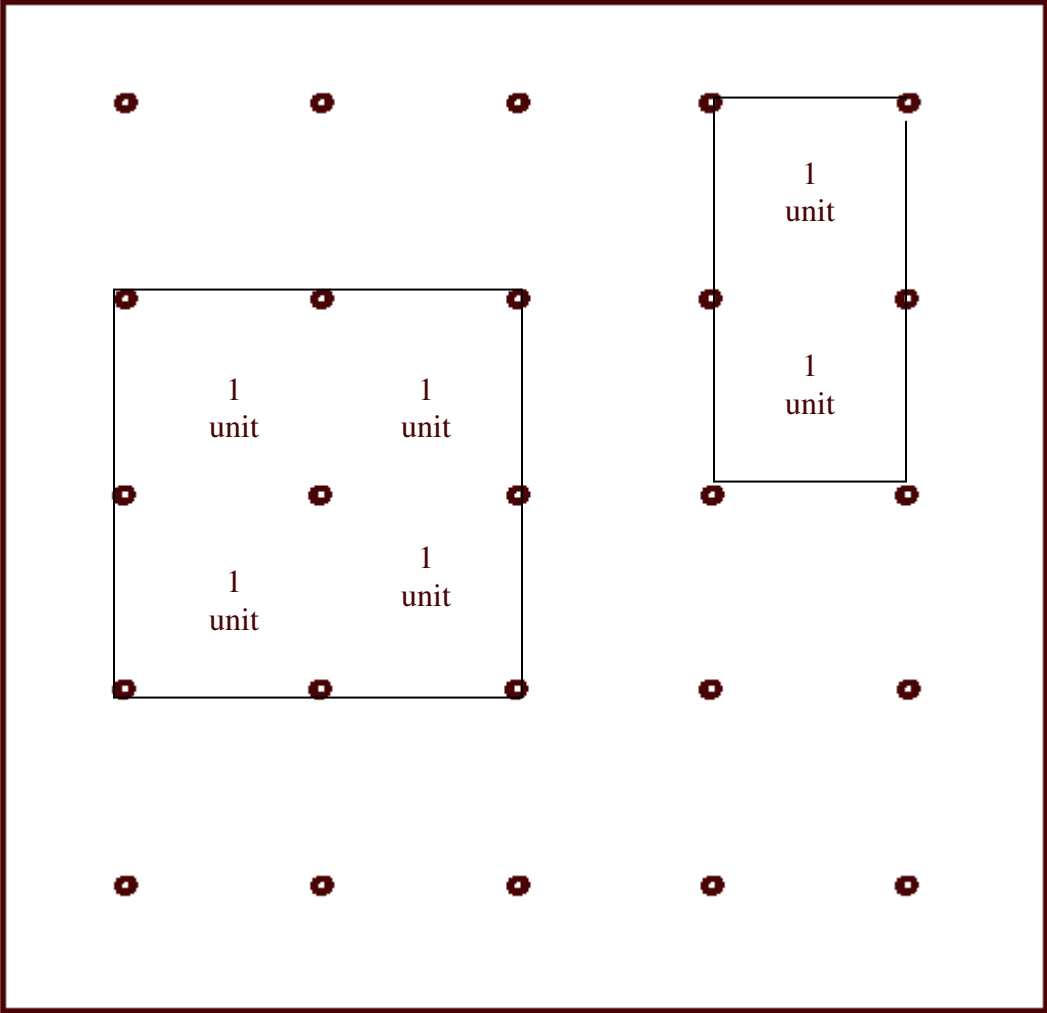


1. Sally is repainting the ceiling in the kitchen. The kitchen is 13 feet long and 6 feet wide. What is the area of Sally's kitchen? Show work mathematically and with a model.
2. The Student Council is having a Homecoming contest. To enter you must create an original design for the t-shirt. The dimensions of the design are 18 inches by 24 inches. How much area will the design cover?

Attachment 1

Geoboard transparency—adapted from www.mathforum.org

5 x 5 Large Geoboard Dot Paper



Worksheet 1

Directions—In groups create each polygon on the geoboard. Identify the shape of each polygon. Find the area of each polygon. Be sure to label your answer with the units squared.

1. 1 unit x 3 units
2. 3 units x 4 units
3. 4 units x 2 units
4. 2 units x 2 units
5. 2 units x 3 units
6. 4 units by 3 units
7. 3 units by 1 unit
8. 2 units by 4 units

Discuss in your groups the polygon created and the area for each polygon. Be ready to identify some similarities in numbers 1 and 6, and 3 and 8.

9. Aunt Betty is putting new carpet in her hallway. Her hallway is rectangular with a length of 9 feet and a width of 4 feet. How much area of carpet will Aunt Betty need to purchase?
10. Aunt Betty loves the new carpet in the hallway and has decided to carpet her bedroom also. Her square bedroom is 12ft wide. What is the area carpet she will need to purchase?