

Discover an Acre

Students practice their math skills while helping design a garden.

Standards of Learning

Math: 3.10, 5.8

Objectives

Students will:

- Investigate perimeter and area using 12 inch squares to model a garden
- Measure the perimeter and area of a given space

Materials

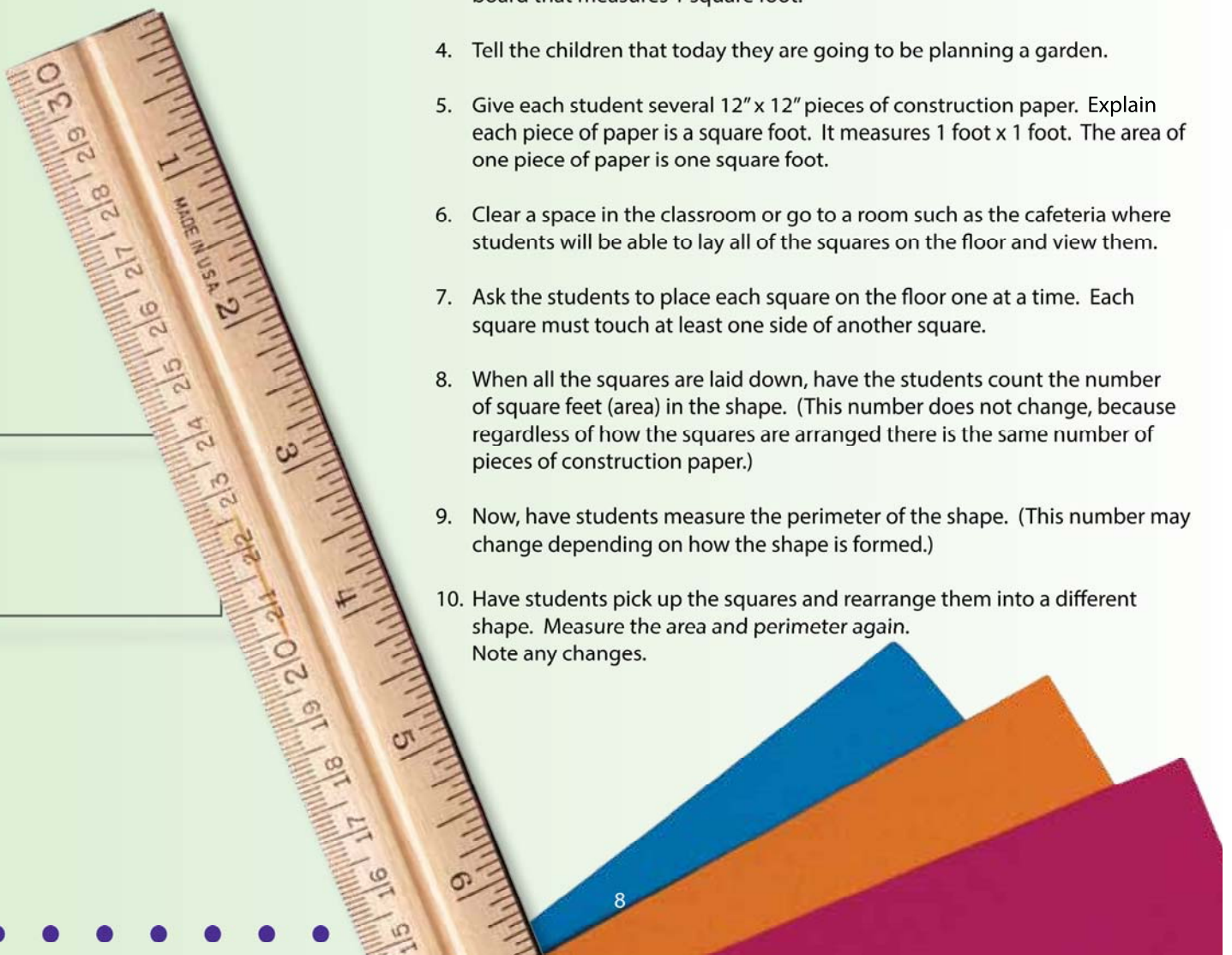
- 12" ruler
- 12 x 12 inch construction paper

Background Knowledge

The purpose of this activity is to provide students with a concrete example of area and perimeter. Measurement is also reinforced with this activity. The area is the space that the garden your students create takes up. They can find out the area of their garden if they count the number of squares that they used to create the garden. The perimeter of an object measures the outside lining, so for the students' garden they will count the outside edges of the squares.

Procedure

1. As a class, brainstorm the units we use to measure various things. Examples: an eraser- centimeter; length of a pencil- inch; height of a door- yard, etc.
2. Discuss measuring area and inform the students that we use square feet to measure area.
3. Show students what a square foot looks like by drawing a square on the board that measures 1 square foot.
4. Tell the children that today they are going to be planning a garden.
5. Give each student several 12" x 12" pieces of construction paper. Explain each piece of paper is a square foot. It measures 1 foot x 1 foot. The area of one piece of paper is one square foot.
6. Clear a space in the classroom or go to a room such as the cafeteria where students will be able to lay all of the squares on the floor and view them.
7. Ask the students to place each square on the floor one at a time. Each square must touch at least one side of another square.
8. When all the squares are laid down, have the students count the number of square feet (area) in the shape. (This number does not change, because regardless of how the squares are arranged there is the same number of pieces of construction paper.)
9. Now, have students measure the perimeter of the shape. (This number may change depending on how the shape is formed.)
10. Have students pick up the squares and rearrange them into a different shape. Measure the area and perimeter again. Note any changes.



Discover an Acre (cont.)

Take it Further

Copy seed packet pictures and place on the square foot pages. Write under the seed packet how many of the given seeds can be planted per square foot.

- Have children sort their garden according to the parts of the plant you eat or by how many seeds can be planted per square foot.
- Incorporate multiplication word problems- example: I have 4 square feet and want to plant parsnips. If I can plant 4 parsnip seeds per square foot, how many parsnip seeds can I plant?

Take students outside with the 12" x 12" pieces of construction paper to find square footage and/or perimeter of common objects such as a sidewalk, door, window, a picnic tabletop, a seesaw, or a parking space.



Garden Spotlight

Make the lesson come alive by planting your own **Square Foot Garden**.
Divide your garden into square foot increments and plant within the squares.

Plant Recommendations:

- One plant per square foot (12 inches apart): "patio" (dwarf bush) tomatoes, potatoes, broccoli, cabbage, cauliflower, kale, head lettuce, New Zealand spinach, peppers, peanuts, large sunflowers, tampala (amaranth)
- Four plants per square foot (6 inches apart): leaf lettuce, parsley, Swiss chard, sweet corn (small varieties), mustard greens, basil, coriander, dill, parsnips, shallots, small sunflowers, turnips
- Nine plants per square foot (4 inches apart): bush beans, spinach, leeks, anise, chervil, corn salad (mache), mustard greens, nasturtiums
- Sixteen plants per square foot (3 inches apart): carrots, beets, radishes, onions, cumin, garden cress

