

Leaf Area and Perimeter

Practice measurement with objects found in nature.

Background Knowledge

Perimeter is the outside measurement of a given space. In gardening, it's important to know the perimeter of your garden, so you will know how much fence to purchase. Area is the space within a given perimeter. You should know the area of your garden, so you will know how much seed, fertilizer and mulch to purchase for the given space.

Procedure

A.

1. Have students pick a leaf from a tree or garden plant (nothing too small or too large)...about the size of their hand.
2. Students should trace an outline of their leaf on a piece of paper. A couple of small pieces of tape may be needed to hold the leaf in place for tracing.
3. Remove the leaf to reveal the outline.
4. Give each student a piece of yarn about one yard in length.
5. Ask them to use the yarn to outline the perimeter of the leaf.
6. Cut the yarn at the point where it overlaps the starting point.
7. Remove yarn from the paper and lay it on a ruler, yardstick or tape measure to determine the perimeter of the leaf in inches.
8. Write the answer on the paper with the leaf outline. Example: perimeter = 14"

B.

1. Give students a one inch square of paper (different color) and have them glue it to the paper with the leaf outline.
2. Give students a small cup with dried beans.
3. Ask them to fill the square inch with the dried beans, laying them side by side.
4. Count the number of beans in the square inch and write that number on the paper beside the square inch. Example: 18 beans/square inch
5. Estimate the number of beans needed to fill their leaf outline and write their estimate on their paper.
6. Fill the leaf outline with dried beans, laying them side by side.
7. Count the number of beans in the leaf outline. Write the total beside the leaf.
8. Divide the number of beans in the leaf outline by the number of beans in the square inch to give the total number of square inches in the leaf.

Take it Further

Have students measure perimeter and area for other items and spaces within the garden. Items that can be measured are table tops, stepping stones, defined spaces of a sidewalk, a raised bed, etc. Small spaces can be measured in inches and square inches, while larger spaces can be measured in feet and square feet.

Standards of Learning

Math: 3.9, 5.8

Objectives

Students will:

- Calculate area and perimeter for a given space, using a leaf as a guideline.

Materials

- 8 ½" x 11" paper (white or pastel)
- Pencils
- Tape
- Yarn
- Dried beans, peas or corn
- Small cups

