

Solve Problems Involving Surface Area and Volume

Dear Family,

Your child is learning to calculate the surface areas and volumes of cylinders, cones, and spheres. He or she will also solve related problems, such as finding volumes of composite figures and determining a missing dimension of a three-dimensional figure.

You can use the following activity to support your child's understanding of surface area.

Wrapping Cylinders

Materials: An object in the shape of a cylinder (such as an unopened can of food or an oatmeal box with its lid on), paper, scissors, ruler

- Step 1** Ask your child to visually estimate the surface area of the cylinder in square inches or square centimeters.
- Step 2** Have your child cut paper to exactly cover the cylinder, with no gaps and no overlaps. He or she will need to cut two circles and a rectangle.
- Step 3** Have your child measure his or her circles and rectangle and use the measurements to calculate the surface area of the cylinder. Compare the result to his or her original estimate.

Observe Your Child

Focus on Mathematical Practices

Look for and make use of structure.

Help your child become proficient with this Mathematical Practice. Have your child compare the circumference of one of the circles to the width of the rectangle by rolling the circle along the width of the rectangle. Then ask him or her to explain the formula for surface area of a cylinder: $S.A. = 2\pi r^2 + 2\pi rh$.