

Surface Area & Volume of Rectangular Prisms

Name: _____ Date: _____

LEARNING OBJECTIVE

The student will build a rectangular prism (box) and calculate its surface area and volume from measured dimensions.

MATERIALS NEEDED

- A small cardboard box or box template printed/cut from paper
- ruler
- scissors
- tape
- pencil
- calculator (optional)

HANDS-ON ACTIVITY

1. Find a small box (cereal box, shoebox, tissue box) or build one by cutting and taping paper into a rectangular prism shape.
2. Measure the length, width, and height of the box in centimeters or inches, and label each dimension on your paper.
3. Calculate the volume of the box using $V = \text{length} \times \text{width} \times \text{height}$, showing your work.
4. Calculate the total surface area by finding the area of all six faces (two of each: length x width, length x height, width x height) and adding them together.
5. Estimate how many small identical cubes (assign a cube side length, e.g., 1 inch) would fit inside the box based on your volume calculation.

QUESTIONS

1. What were the measured length, width, and height of your box, and its calculated volume?
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2. What was the total surface area of your box?
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3. Explain the difference between what volume measures and what surface area measures.

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4. If you doubled every dimension of your box (length, width, and height), would the volume also just double? Explain using the formula.
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