

# Surface Area of Polyhedra

## How does *volume* change if we double the dimensions?

- 1 On the LAB page, you investigated how *area* changes as the dimensions are doubled. The data you generated on that page will also allow you to make a conjecture about how *area* changes when the dimensions are quadrupled.

Look back at those numbers and write what you think might be the rule.

When the dimensions are multiplied by \_\_\_\_\_

## Now perform some experiments to see how *volume* changes when the dimensions are doubled.

- 2 From the class collection, choose a polyhedron for which you can calculate the volume easily. Record its letter and its volume (showing how you calculated that volume)

Three-Dimensional Figure: \_\_\_\_\_ Volume: \_\_\_\_\_

- 3 Double each dimension and calculate the new volume, again showing how you did it.

VOLUME of a similar polyhedron  
with all dimensions doubled:

- 4 Repeat this experiment with a new polyhedron.

Three-Dimensional Figure: \_\_\_\_\_ Volume: \_\_\_\_\_

VOLUME of a similar polyhedron  
with all dimensions doubled:

- 5 State a conjecture. How do the volumes compare when the dimensions are doubled?

When the dimensions are doubled, \_\_\_\_\_