

1. Suppose that a company sells laundry soap in boxes that measure  $4 \text{ inches} \times 8 \text{ inches} \times 12 \text{ inches}$ .

A. What is the volume of the laundry soap box?

The company wants to offer larger economy size boxes.

B. What changes in dimensions would give a box with double the volume?

C. What changes in dimensions would give a box with triple the volume?

D. What changes in dimensions would give a box with half the volume?

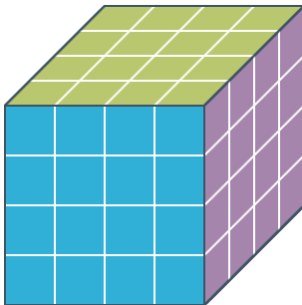
E. Given the **scale factor of 2**, find the volume of a box similar to the basic box. Show how you can find the volume without calculating the separate dimensions of each new box design.

2. You want to make a compost box bigger than the basic 1 – 2 – 3 *foot* size. Your friend says, “If you double each dimension, you’ll be able to double the capacity at only double the cost of the materials to build it.”

A. Is your friend correct about doubling the capacity? Why or why not?

B. Is your friend correct about doubling the cost? Why or why not?

3. Mrs. Brown wants to paint her jewelry box blue. The jewelry box is in the shape of a cube and has an edge length of 4 *inches*. How much blue paint will Mrs. Brown need?



4. Mrs. Arnold is building a pool in her backyard. The pool will be 55 *feet* long, 28 *feet* wide, and 9 *feet* deep. How much water will fit in the pool?

