

Super Size or Down Size?



Suppose you have a container in the shape of a rectangular prism and you want to increase (super size) the volume of this container. If you double the dimensions of the original rectangular prism, how will the volume be affected? How will the surface area be affected by this change?

Suppose you have a large container in the shape of a rectangular prism and you want to decrease (down size) the volume of this container. If you decrease the dimensions by a scale factor of one-half, how is the volume affected? What effect will this change have on the surface area of the prism?

1. Make conjectures about changing the dimensions of a rectangular prism by a given scale factor and the resulting effect on surface area and volume.
2. Validate your volume conjectures by investigating with one-inch cubes. Use color tiles and/or one-inch grid paper to validate your conjectures about surface area.
3. Make generalizations based upon your findings.
4. How could these generalizations be extended to other other geometric figures? Explain.