

MORE ON COMPUTING VOLUME

Introduction

In earlier *GeoGebra* lab activities, you learned that the volume in cubic units of a 3-dimensional figure or container can be found by multiplying the height times the length times the width of the container.

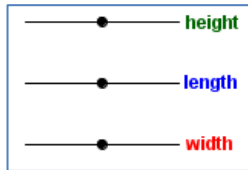
You only worked with figures or containers that had sides measured in whole units of length – no fractions.

Does this formula still work if the container has sides whose lengths that include fractions of units?

Step 1. Experiment with Changing the Container



Use the MOVE tool to change the sliders controlling the height, length, and width of the container.



Experiment with different settings to see how the container size and shape are changed. Notice that the lengths of the height, length, and width can be fractions of a unit.

Step 2. Complete Data Table

Use the sliders to create three different 3-dimensional shapes as described in the table. Record the measurements of the lengths of the sides and the volume as calculated by *GeoGebra*.

Data Table					
Experiment	Height in units	Length in units	Width in units	Volume in cubic units as calculated by <i>GeoGebra</i>	Does the formula work?
1 One dimension includes a fraction, the other two are whole numbers					
2 Two dimensions include a fraction, the other is a whole number					
3 All three dimensions include a fraction					

Step 3. Does the Formula Still Work?

Use your hand-held calculator to determine if the formula **volume = height X length X width** still works for each of your shapes. Note the result in the last column of the **Data Table**.