

## Volume, Surface Area, Scale Factor

Build a SMALL rectangular prism that is 3 cubes long, 2 cubes wide, and 1 cubes high.

Build another that is 6 cubes long, 4 cubes wide, and 2 cubes high. (This will be the MEDIUM prism.)

Do the following calculations. All ratios should be reduced to lowest terms.

	<u>Small rectangular prism</u>	<u>Medium rectangular prism</u>	<u>Ratio</u>
<b>Length</b>			
<b>Width</b>			
<b>Height</b>			

The two prisms are SIMILAR. Give their scale factor: \_\_\_\_\_

**Volume**  
(how many cubes does it take to build?)

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Now build a new rectangular prism. You will need to combine with another group and use the cubes you used before. The new one should be 9 cubes long, 6 cubes wide, and 3 cubes high.

Use the data from the small rectangle you made earlier. Copy it from above. Compare the small one to the large one you just built.

	<u>Small rectangular prism</u>	<u>Large rectangular prism</u>	<u>Ratio</u>
<b>Length</b>			
<b>Width</b>			
<b>Height</b>			

The two prisms are SIMILAR. Give their scale factor: \_\_\_\_\_

**Volume**

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Now compare the MEDIUM prism (copy data from other side of page) to the LARGE prism.

	<u>Medium prism</u>	<u>Large prism</u>	<u>Ratio</u>
<b>Length</b>			
<b>Width</b>			
<b>Height</b>			
The two prisms are SIMILAR. Give their scale factor: _____			
<b>Volume</b>			

A rectangular prism measures 8 cm by 4 cm by 12 cm.

A second rectangular prism measures 10 cm by 5 cm by 15 cm.

The two prisms are similar. What is their scale factor? \_\_\_\_\_

What is the volume of the smaller? \_\_\_\_\_

What is the volume of the larger? \_\_\_\_\_

What is the ratio of the volumes? \_\_\_\_\_ (be sure you reduced it)