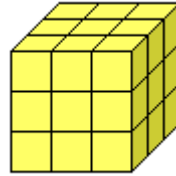


Investigating Similar Figures, Scale Factors and Volume With Linking Cubes

Name _____

Date _____

Use linking cubes to build the two similar prisms for each problem. Count the volume (cubes) for each. Fill in the blanks.



1. Build a cube with side length of 1. Sketch it here.

Build a similar figure using a **scale factor of 2**. Sketch it here.

Volume of smaller cube _____. Volume of larger cube _____.

What is the value of the **scale factor**³? _____.

What is the ratio of the larger cube's volume to the smaller cube's volume _____.

2. Build a cube with side length of 2. Sketch it here.

Build a similar figure using a **scale factor of 2**. Sketch it here.

Volume of smaller cube _____. Volume of larger cube _____.

What is the value of the **scale factor**³? _____.

What is the ratio of the larger cube's volume to the smaller cube's volume _____.

3. Build a prism with dimensions $l = 1$, $w = 2$, $h = 2$. Sketch it here.

Build a similar figure using a **scale factor of 2**. Sketch it here.

Volume of smaller prism _____. Volume of larger prism _____.

What is the value of the **scale factor**³? _____.

What is the ratio of the larger prism's volume to the smaller prism's volume _____.

4. Build a cube with side length of 1.

Build a similar figure using a **scale factor of 3**. Sketch it here.

Volume of smaller cube _____. Volume of larger cube _____.

What is the value of the **scale factor**³?_____.

What is the ratio of the larger cube's volume to the smaller cube's volume _____.

5. Build a cube with side length of 2. Sketch it here.

Build a similar figure using a **scale factor of 3**. Sketch it here.

Volume of smaller cube _____. Volume of larger cube _____.

What is the value of the **scale factor**³?_____.

What is the ratio of the larger cube's volume to the smaller cube's volume _____.

6. Build a prism with dimensions $l = 1$, $w = 2$, $h = 2$. Sketch it here.

Build a similar figure using a **scale factor of 3**. Sketch it here.

Volume of smaller prism _____. Volume of larger prism _____.

What is the value of the **scale factor**³?_____.

What is the ratio of the larger prism's volume to the smaller prism's volume _____.

7. How does the scale factor compare to the ratio of the volumes?

8. If you build two similar cubes with a **scale factor of 4**, what would you expect the ratio of their volumes to be? Explain your answer.