



Geometry & Measurement Student Activity - Volume

WORKSHEET A

This worksheet can be used in conjunction with the online activity called, "Exploring Volume" in the Math Extensions Grades 6-9 Website.

Estimate and then calculate [using formulas ($L \times W \times H$)] the volume of the following prisms. You can check your calculations using the "Volume Explorer".

1. Rectangular Prisms

- This prism has a width measurement that is 2 times its depth. The height is 5 and the depth is 3. What is the volume?
- This prism is a cube with a height of 6, what is its volume?
- Estimate which prism has the greatest volume. Explain your answer below.
 - Prism 1: width = 4; height = 3; depth = 6
 - Prism 2: width = 6; height = 4; depth = 3
 - Prism 3: width = 6; height = 6; depth = 2

2. Triangular Prisms ($L \times W \times D / 2$)

- This prism has a length measurement that is half of its height. The height is 10 and the width is 3. What is the volume?
- This prism has a height of 8, length of 6, and width of 6. What is its volume?
- Estimate which prism has the greatest volume. Explain your answer below.
 - Prism 1: depth = 4; height = 3; width = 6
 - Prism 2: depth = 6; height = 4; width = 3
 - Prism 3: depth = 3; height = 6; width = 4

- If the volume of a rectangular prism is 60 units, what are some of the various dimensions possible for the prism? Show your work.

4. Using the "Explorer" complete the chart on this page. Create a rectangular prism with measurements of $W = 5$, $H = 7$, and $D = 4$. Determine the volume. Change the measurement of one dimension at a time, as illustrated in the chart.

Complete this chart.

Number	Width	Height	Depth	Volume
Prism 1	5	7	4	
Prism 2	6	7	4	
Prism 3	8	7	4	
Prism 4	9	7	4	
Prism 5	5	7	4	
Prism 6	5	8	4	
Prism 7	5	9	4	
Prism 8	5	10	4	
Prism 9	5	7	4	
Prism 10	6	8	5	
Prism 11	7	9	6	
Prism 12	8	10	7	

5. Look over your information when the chart is completed and answer the following question. **"What happens to the volume of a solid when one or more of its dimensions are changed?"**