Name _____ Date _____ Per. _____

Volume and Surface Area of Rectangular Prisms

Today we are going to use the ***Interactivate Surface Area and Volume*** website to explore the relationship between **Width**, **Depth**, **Height**, **Volume**, and **Surface Area**. (The link to the website is on today's agenda on the AGGIE Math website.)

The first group have the **Width**, **Depth**, and **Height** given. Use the sliders to figure out what the **Volume** and **Surface Area** are for the given dimensions.

Width	Depth	Height	Volume	Surface Area
1	1	1		
6	2	1		
2	3	4		
3	1	8		
5	4	6		
10	3	4		

What common object is an example of the first set of dimensions? _____

What common object is an example of the second set of dimensions? _____

Next you're going to work backwards. The chart gives the **Volume** or **Surface Area**, you have to find the **Width**, **Depth**, and **Height**. (There can be more than one combination)

Width	Depth	Height	Volume	Surface Area
			60	
				144
			180	
				72
			90	

Now a challenge. The table below has pairs of rows with the same **Volume**. Your goal is to use two different sets of **Width**, **Depth**, and **Height** that have the same given **Volume**, but **Surface Areas** with as great a difference as possible.

Width	Depth	Height	Volume	Surface Area	Difference in Surface Area
			60		
			60		
			240		
			240		
			300		
			300		

What observations can you make about how the shape of the figure changes as the

Volume stays the same but the **Surface Area** gets smaller or larger. _____

_____

_____

Is there a combination of **Width**, **Depth**, and **Height** where the **Volume** and **Surface**

Area are the same? If so, what are the dimensions? _____

Is this the only set of dimensions where the **Volume** and **Surface Area** are the same? ____

If yes, why do you think that is? _____

Now that you have some experience with **Volume** and **Surface Area**, write a formula for each using the variable w (Width), d (Depth), and h (Height)

Volume formula: _____

Surface Area formula: _____

Interactivate http://www.shodor.org/interactivate/activities/SurfaceAreaAndVolume/