PhET Simulator
Density Activity

Type in the web address: **http://phet.colorado.edu/en/simulation/density** and click the "**Play**" button.

Warm Up! Use the options at the top right to complete the **Same Mass**, **Same Volume** and **Same Density** Data Tables below. For each section, record and calculate the mass, volume and densities of the four blocks. *Hint- Make sure you find the volume of the ENTIRE object!*

Part A: Same Mass

Material	Mass (kg)	Volume (L)	Calculate the Density (kg/L)	Does it Float?
Blue				
Yellow				
Green				
Red				

Part B: Same Volume

Material	Mass (kg)	Volume (L)	Calculate the Density (kg/L)	Does it Float?
Blue				
Yellow				
Green				
Red				

Part C: Same Density

Material	Mass (kg)	Volume (L)	Density (kg/L)	Does it Float?
Blue				
Yellow				
Green				
Red				

Water has a density of:

_____

$$D = \heartsuit$$

Part D: Custom Section

Use the dropdown box of materials on the top left corner of your screen <u>to select your material.</u> Adjust the mass and volume for each type of material and record in the table below to whatever you wish! *Notice that the density DOES NOT CHANGE regardless of the mass and volume settings!*

Material	Mass (kg)	Volume (L)	Density (kg/L)	Does it Float?
Styrofoam				
Wood				
Ice				
Brick				
Aluminum				

Why doesn't the density of the object change when you adjust the mass and volume of the objects in this section? Explain your answer.

_____

_____

_____

Choose the "My Block" option in the material drop down box. Type in the mass to **4 kg**. What is the **<u>minimum</u>** volume needed to make the object float?

a) Volume: _____
b) Density at this mass/volume: _____
c) Notice the sliding scale- Which other material's density is it closest to? _____

Part E: Mystery Section: Can you Figure Out What Each Block is Made of?! ☺

Material	Mass (kg)	Volume (L)	Density (kg/L)	Does it Float?	What is it made of? (Click on "show table" once you have calculated the density to find out!)
A					
B					
C					
D					
E					