

Density simulations worksheet:

Go to the Phet simulations website and run the density simulation.

<http://phet.colorado.edu/en/simulation/density>

Part I:

Under the blocks tab in the upper right corner, select same volume.

1. Are all 4 blocks the same shape and size? _____
2. Are all blocks the same mass? _____
3. How much liquid does each block displace?
 - a. Yellow = _____
 - b. Blue = _____
 - c. Red = _____
 - d. Green = _____
4. Did any blocks displace the same amount? Why or why not?

5. What is the density of each block? You must show work and use units.

a. Yellow = _____ c. Red = _____

b. Blue = _____ d. Green = _____

6. Which blocks floated and which sunk?

7. What is an estimated Density of the liquid? _____

8. Do you hypothesize that red or green has the closest density to the liquid and why?

Part II.

1. What happens when you select same density and then place each block into the liquid?

2. Calculate the volume of the red and blue boxes. As always, be sure to show work and use units.

a. Red = _____ b. Blue = _____

Part III.

1. When you select the same mass can you calculate the volume of all four boxes by just dropping each box into the liquid? Explain

2. By performing the same procedure as above, can you calculate the density of all the boxes? Explain

3. Calculate the density of the green box. _____

Part IV.

Do part IV. On a separate sheet of paper and attach to this worksheet when handing in.

1. Select Mystery. Create a data and calculations table that shows the density of all the mystery boxes.
2. Create a color specific density column.
3. If you place box D in corn syrup will it float? Explain using numbers.

4. If you place Box D in ethanol will it sink or float? Explain using numbers.
