

# Create Your Own Density Column!

Name: \_\_\_\_\_

Calculate the densities of the 4 unknown substances and complete the table below using what you have learned in class. You may use any of the materials made available by your teacher to calculate the densities.

Unknown Substance	Density (g/mL)
A	
B	
C	
D	

Based on your calculations above, decide what order the liquids should go into your column. Label the column below with letters A - D for how you think your column should be filled based on the densities. This is how you will create your own DIY column! Also, provide an explanation (justification and reasoning) for why you think the column should be filled in this way.

Explanation:

_____
_____
_____
_____

Now, create your own density column! Add your substances in the order you've decided above. Make sure to add each substance carefully so you do not make a mess, but please clean up after yourself if you do.

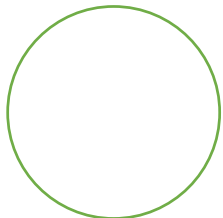
Let your column sit for a few minutes. You may work on the other questions if you'd like. Once it has sat for a few minutes, write down the order of the substances in your column below.

_____
_____
_____
_____

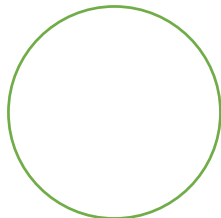
Were there any differences? If so, what was different? Why do you think it was different than what you predicted?

What does the order of substances in the column tell you about density? Explain your thinking.

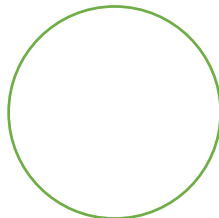
Based on what you learned about each substance's density and how you ordered the substances, what have you learned about the molecular structure of these substances? How would they differ if you could look at them at the microscopic level? Draw what you think you would see for each substance and write an explanation to explain how these substances differ.



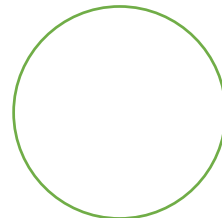
A



B



C



D

How does density differ from mass? Explain. Feel free to draw if it will help your explanation.

If you have 1 cup of liquid R and 1 cup of liquid S, can they have different densities? Explain. Can they have the same densities? Explain.

If you have 50 grams of substance X in one box and 100 grams of substance X in another box, how are their densities different and/or the same? Explain.

Reflect on your laboratory performance during this exercise. Did you practice proper laboratory safety (wear safety glasses, clean up any messes, etc)? If you think you did, explain how you were safe. If you think you did not, explain why and what you could have done differently.