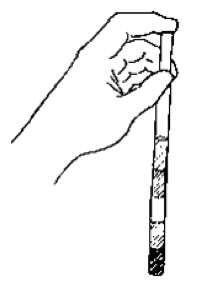
**Do not Write on this lab…**

***Science***

***Liquid Rainbow Density Lab***



***Objective****; Different amounts of salt have been added to each colored liquid, making each one of a different density. Your objective is to secretly determine the proper density order of the five colored liquids before any other group. Your team must do this using as few moves as possible by employing critical thinking, problem solving, prediction, and your knowledge of what density is. Your final product will look something like the straw to the right that is filled with five liquids, each of a different density, in the proper order from bottom to top.*

**Materials**; Plastic straw, five test tubes for liquids, one beaker for waste, test tube rack.

**Directions:** Read this entire lab first, then go back and do the lab in the order outlined below.

**Procedure:** a. Send a representative from your team to pick up all materials listed above.

b. Send another representative back up to fill each test tube ¾ full with one of the 5 liquids.

c. Answer the questions below, then…

d. Get your instructor’s initials, then…

e. Figure out the correct order of liquids and put all 5 liquids in the straw at once.

f. Do this by holding your thumb over the straw and “picking up” each liquid.

g. If the second liquid you pick up is less dense than first it will “float up”; you don’t want this.

h. You want the second liquid to more dense, so as it doesn’t mix with the first.

**Rules**; You may not share your results with any other team; hide your work from view.

**Pre-lab Questions**

1. What is the definition of density?
2. What are the two measured parameters of density?
3. What are the units of density?
4. What two science instruments would you need to measure density?
5. What is the density of pure water?
6. Will the most dense liquid of the five be at the bottom or top of the straw?
7. If two liquids mix does that invalidate the resulting liquid and should you then throw them away?
8. Discuss your problem-solving method with your partner. Can you make a diagram of your method?
9. Go to your instructor for his initials and explain to him the method you will use to solve the problem before any other group.

Get instructor’s initials in lab book now…

***Post-lab Questions***

1. Write the correct color order of the liquids from bottom to top.
2. Explain what method you used to determine which of two liquids is most dense.
3. Once you determined the density order of the first two liquids, what method did you use for the rest?

***Vocabulary;*** *Density, prediction, buoyancy, inference.*