A “Layered Solution” Lab

Materials:

- ❏ Food Coloring
- ❏ Table Salt
- ❏ 5 Small Beakers
- ❏ Graduated Cylinder
- ❏ Spoon / Stirring Rod
- ❏ Electronic Balance
- ❏ Pipette
- ❏ Masking Tape
- ❏ Marker / Pen

Beaker	Grams of Salt	mL of Water	Food Coloring (x2)
1	10	50	Blue
2	8.4	50	Green
3	6.5	50	Yellow
4	3.4	50	Yellow, Red
5	0	50	Red

Procedure:

1. Using a small piece of masking tape, label each of the 5 beakers 1-5.
2. Into each beaker, add salt and water in the amounts identified in the table above.
3. Stir each solution well to dissolve ALL salt.
4. Add two drops of food coloring and stir.
5. Gently pour about 20 mL of the solution from beaker 1 into the graduated cylinder.
6. Using the pipette, carefully layer 20 mL from beaker 2 on top of the blue solution in the graduated cylinder. You MUST add the layer by running the solution down the side of inside of the grad SLOWLY - do not squirt it directly into the graduated cylinder.
7. Using the same method, carefully add 20 mL from beaker 3.
8. Using the same method, carefully add 20 mL from beaker 4.
9. Finally, using the same method, carefully add 20 mL from beaker 5.

Name: _____

Observations:

Make a colored drawing of your layered solution in the space below?

Conclusion:

1. How did the density make it possible to create this layered solution?

2. If a student had trouble creating the layers, what might have been the cause of their trouble?

3. Why was it important to completely dissolve the salt before adding the solution to the grad?

4. What other liquids or solutions do you think could be used to create layers?

5. Where in nature might you see an example of layers created in water due to differences in density (doesn't have to be as many layers as our experiment!)?