

NAME:

PERIOD:

DATE:

## Volume Rainbow Lab (a lab stolen from Mrs. Schwab)

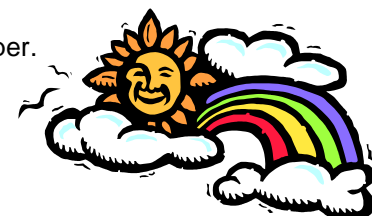
**Materials needed:** 6 test tubes + rack      1 dropper      10ml graduated cylinder  
pencil      food coloring      3 beakers      100ml graduated cylinder

### Safety issues:

- *Never eat or drink anything from lab materials.* You don't know what was in it before, and you don't know how well the last person cleaned it out.
- *Be careful with glassware.* If something breaks tell the teacher immediately so it can be disposed of properly.
- *No horseplay.* This is a laboratory activity. Safety is the number one priority. We also want to avoid spills and broken equipment. Misbehaving can earn you a zero for the lab.

### Procedure:

- Get the following materials:  
(6) test tubes + rack      (1) 10ml graduated cylinder      (1) 100ml graduated cylinder  
(1) dropper      (1) pencil      (3) beakers
  - Using the pencil, label test tubes: "A", "B", "C", "D", "E", "F", and the beakers "Red", "Yellow", and "Blue."
  - Put 50 ml of water in the Red, Yellow, and Blue beakers.
  - Add 2 drops of red food coloring to the Red beaker, 2 drops of Yellow to the yellow beaker, and 2 drops of blue to the Blue beaker.
- Using the dropper and the 100ml graduated cylinder:
- Take 19ml of water from the Red beaker, and put it into test tube A.
  - Take 18ml of water from the Yellow beaker, and put it into test tube C.
  - Take 18ml of water from the Blue beaker, and put it into test tube E.
- Using the dropper and the 10ml graduated cylinder:
- From test tube C** measure out 4 ml and put it into test tube D.
  - From test tube E** measure out 7 ml and **add** it to test tube D.
  - From the Blue beaker** measure 4 ml and put it into test tube F.
  - From the Red beaker** measure 7 ml and **add** it to test tube F.
  - From test tube A** measure 8 ml of water and pour it into test tube B.
  - From test tube C** measure 3 ml and **add** it to test tube B.
- Gently mix (swirl) each test tube.
  - Find the total amount of water and the color of the water in each test tube. Record the data in the data table on the back.**
  - Compare the colors of water in test tubes A, B, C, D, E, and F to the colors of another group or the teacher's example. If your colors don't match up, think about why that might be.
  - Pour the water down the drain and rinse out all beakers, test tubes and dropper.
  - Rinse and put all your equipment away.



**Data:**

Cup	Color of water in each test tube	Amount of water in each test tube
A		
B		
C		
D		
E		
F		

**Conclusions:** All answers should be in complete sentences.

1. Why is the dropper good to use? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Why is the dropper difficult to use? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Did your colors match those of the group (or teacher's example) that you looked at? Yes or No.

4. Why should all the groups end up with the same colors in the test tubes? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. What do you think the teacher wanted you to learn from this lab? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_