

Name \_\_\_\_\_

Per \_\_\_\_\_

Class # \_\_\_\_\_

## Relative pH Color Scale Procedure

### MATERIALS : Each Group Needs

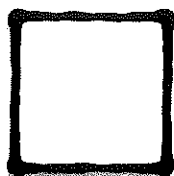
7 cups

Red Cabbage Indicator

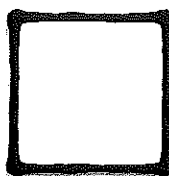
Relative pH Color Scale Worksheet

### STEP 1: TITRATION

1. In your cup labeled V (VINEGAR), go to a VINEGAR station & place 2 ML (2 pipettes) of vinegar in your cup.
2. Go back to your table and add 1 mL of the Red Cabbage Indicator, **GENTLY** swirl the cup to mix the vinegar & cabbage juice. Note any color changes in the box labeled "INITIAL". Place the cabbage juice cup & pipette back in your materials box. **DO NOT** use this pipette for step #3.
3. Add 10 drops of dilute A (AMMONIA) found in your kit using the pipette given to you by your teacher, then **GENTLY** swirl the cup to mix. Continue to add 10 drops of ammonia (keep a count) at a time & **GENTLY** swirl the cup each time until you see a distinct color change. Fill in the "FINAL" box below with the color of the solution you see in the cup. When done, please return the pipette to your teacher.



INITIAL (vinegar + cabbage juice)



FINAL (vinegar + cabbage juice + ammonia)

\_\_\_\_\_ # of drops used

### CLEAN UP

1. Place lid on ammonia cup and place in materials box.
2. Take mixing cup and pour contents down drain, rinse with water from faucet & **DRY COMPLETELY**, inside and outside. Place in materials box.
3. Give ammonia pipette back to teacher.
4. Place a clean, dry paper towel in materials box.

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Relative pH Color Scale Worksheet

### STEP 2: Creating Your pH Color Scale

1. Take one of your small numbered cups to the corresponding station (same #)
2. Using the pipette at that station, measure 2 mL (2 pipettes) of solution and put it in your cup. Return YOUR cup to your desk.
3. Repeat Steps 1 & 2 with the 5 other samples that your teacher will require you to use.
4. Once you have ALL 6 household samples, begin with #4 and add 2 mL of Red Cabbage Indicator in the cup.
5. Observe and Record the color change below. Use a corresponding CRAYON color to represent the color you see in the cup.
6. Repeat Step 5 with the other 5 samples and record the colors below, using a corresponding CRAYON color to represent the color you see in the cup.
- 7.



SAMPLE #4



SAMPLE #8



SAMPLE #5



SAMPLE #10



SAMPLE #6



SAMPLE #12

7. Rank your colors (according to the lowest to highest pH) and fill in the Data Table titled "Relative pH Color Scale"

### CLEAN UP

1. Pour ALL solutions down the drain, rinse each with water from faucet & DRY COMPLETELY, inside and outside. Place in materials box.
2. Place cabbage juice & pipette in materials box.
3. Place a clean, dry paper towel in materials box.
4. Place crayons in materials box.
5. Return materials box to table

# Relative pH Color Scale - (Lesson 3)

Develop a relative pH scale using red cabbage indicator.  
Use colored pencils to illustrate the color change observed during your investigation.

pH Scale		
	Color	Substance
<p>Increasing Acidity (stronger acid)</p> <p>Increasing Alkalinity (stronger base)</p>		

- Think of at least three more substances that you are curious about. Test them using the red cabbage indicator, and place them on your pH scale.
- Compare the order you placed the substances on your scale with those of other groups. What were the similarities? The differences? How might you explain these?