Physical Science 9 Lab

ACIDIC REACTIONS

PURPOSE: to study some of the properties of acidic and non-acidic solutions.

MATERIALS: baking soda, zinc, magnesium, NaCl solution, HCl solution, red and blue litmus paper, methyl orange paper, phenolphthalein paper, litmus solution, red cabbage, blueberry and cherry juice, turmeric solution, marble rock.

PROCEDURES

CAUTION: Handle acid with care and wear your safety glasses.

PART I.

1. Fill three test tubes with about 2 ml of HCl. Label these; A1, A2, and A3. Fill three other test tubes with 2 ml of NaCl. Label these; B1, B2, and B3.

2. Use the triangle end of a stir stick to carry a small amount of baking soda to your lab station. Drop it into tube A1. **Record your observations below.**

3. Drop a piece of magnesium into tube A2. **Record your observations below.**

4. Drop a piece of zinc into tube A3. **Record your observations below.**

5. Is there a difference in how the two metals react to HCl? **Explain.**

Rinse the three testtubes and reuse any leftover metals in steps 7-8.

6. Use the triangle end of a stir stick to carry a small amount of baking soda to your lab station. Drop it into tube B1. **Record your observations below.**

7. Drop a piece of magnesium into tube B2. **Record your observations below.**

8. Drop a piece of zinc into tube B3. **Record your observations below.**

9. **Which solution had a reaction in all 3 test tubes, HCl or NaCl? (circle one)**

10. **Both HCl and NaCl contain the Cl- ion. Which ion then, do you think is responsible for the reactions you observed, H+ or Na+?**

Rinse the three testtubes and return any leftover metals to the cart.

PART II. You will use the sheet with the circles on it for the next part of this lab.

11. Place a small piece of blue litmus paper on two different circles. Place a small amount of HCl on one piece and a small amount of NaCl on the other piece. **Record the color change, if any, on the data table.**

12. Repeat step 11 using red litmus paper. **Record the color change, if any, on the data table.**

13. Repeat step 11 using Phenolphthalein paper. **Record the color change, if any, on the data table.**

14. Repeat step 11 using methyl orange paper. **Record the color change, if any, on the data table.**

DATA TABLE

	Phenolphthalein	Red Litmus	Blue Litmus	
NaCl solution				
HCl solution				

PART III.

15. Place a piece of cabbage about the size of a thumbnail into a 50 ml beaker. Add just enough HCl to just cover the leaf. Let the leaf soak for 5-10 minutes. **What happens to the color of the leaf after it has come in contact with acid?**

PART IV.

16. In a clean testtube, add 1 ml of HCl solution and 1 ml of blueberry juice. **What happens to the color of the blueberry juice?**

17. In a clean testtube, add 1 ml of NaCl solution and 1 ml of blueberry juice. **What happens to the color of the blueberry juice?**

18. Repeat steps 16 and 17 using cherry juice. **What happens to the color of the cherry juice?**

19. Repeat steps 16 and 17 using turmeric solution. **What happens to the color of the turmeric solution?**

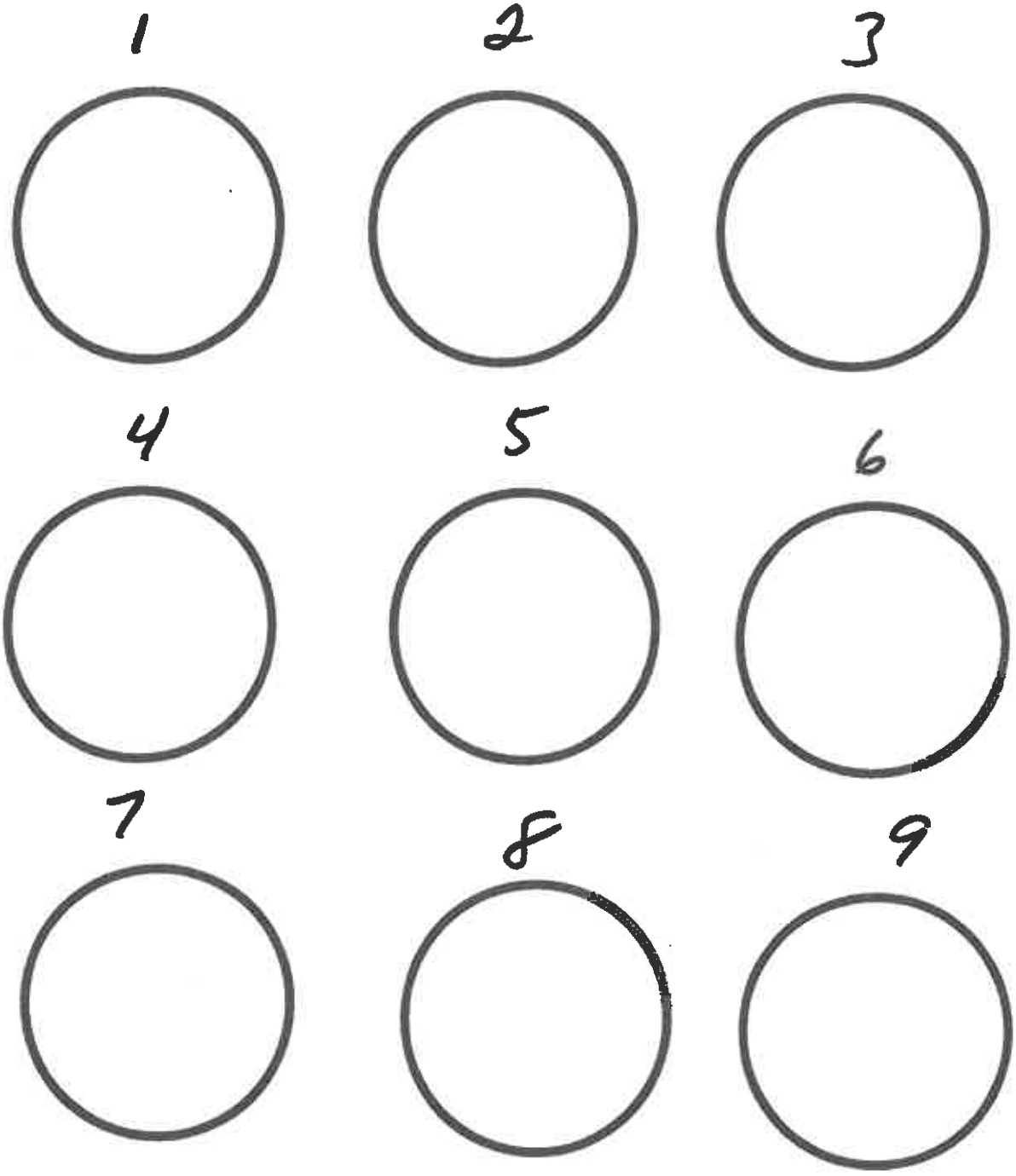
20. Which of the following are indicators of acids?

_____ Phenolphthalein	_____ Methyl Orange
_____ Blue Litmus	_____ Red Litmus
_____ Red Cabbage	_____ Blueberry Juice
_____ Cherry juice	_____ Turmeric solution

PART V.

21. Fill a beaker with 20 ml of distilled water. Add 1 ml of litmus solution. Using the bottle set-up, carefully pour 20 ml of HCl into the funnel. Place the end of the hose into the beaker. Let the gas bubble in the water for several minutes.

Has the litmus changed color? If so, what do you think has happened to the water?


1
2
3
4
5
6
7
8
9