



# WATER WATER EVERYWHERE

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## pH: ACIDS AND BASES

### THINK FIRST!

Liquids can either be neutral, an acid, or a base. A pH of 7 is neutral, a pH of 1-6 is acidic, and a pH of 8-14 is basic or alkaline. Liquids that are very acidic (pH of 1-2) or very alkaline (pH of 13-14) are dangerous and can burn you. What do you think the pH of drinking water is?

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### MATERIALS

- 1 pH scale
- 7 labels
- measuring cups
- vinegar
- 1 paper towel
- 3 spoons
- measuring spoons
- baking soda
- 4 jars
- 4 1-inch pieces of pH paper
- water

### PROCEDURE

1. First, we're going to prepare samples of a mild acid and base. So that we can keep them straight, label the jars A, B, C and D.
2. Label the spoons A, B and D.
3. Put 1/4 cup of water in each of jars A, B and C.
4. Add 1 teaspoon of vinegar to the "A" jar and mix with the "A" spoon.

5. Add 1/4 teaspoon of baking soda to the "B" jar and mix with the "B" spoon until it is all dissolved.

6. pH paper changes to different colors depending on the pH of the solution being tested. Test the pH of the A, B and C solutions by briefly dipping the pH paper in the solution and immediately checking the color against the pH scale. What type of liquid is this?

| Jar | pH | Type (acid, base, neutral) |
|-----|----|----------------------------|
| A   |    |                            |
| B   |    |                            |
| C   |    |                            |
| D   |    |                            |

7. What do you think will happen to the pH if you mix the solutions in jars A and B?

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8. Pour them both into jar D and mix with spoon D. Test this solution and record your results.

9. Clean up by rinsing all of your equipment thoroughly.