

## Neutralizing Acids

In a neutralization reaction, a base neutralizes an acid.

### Question

1. What happens to the pH of an acidic solution when you add a base to it?

### What Do You Think Will Happen?

2. What do you think the results of your investigation will be?
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### Safety Precautions



- Wear all of the safety clothing throughout this investigation.
- Clean up the work area and wash your hands thoroughly at the end of the investigation.

### What You Need

4 pieces of pH paper  
pH indicator chart  
distilled water  
dilute vinegar solution  
dilute baking soda solution  
3 medicine droppers  
3 small beakers  
marker

### What to Do

3. Check off each box as you do the steps.

- ☐ Label each beaker with the name of one of these:
  - A: water
  - B: weak acid
  - C: weak base
- ☐ Add 1 medicine dropper of distilled water to beaker A.
- ☐ Use a piece of pH paper to determine the pH of the water. Record the pH on the chart.
- ☐ Use a clean medicine dropper and add 1 dropper of dilute vinegar solution to beaker B.
- ☐ Use a piece of pH paper to determine the pH of the vinegar. Record the pH.

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

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

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(continued)

- ☐ Use a clean medicine dropper to add 1 dropper of dilute baking soda solution to beaker C.
- ☐ Use a piece of pH paper to determine the pH of the baking soda solution. Record the pH.
- ☐ Pour the baking soda solution into the vinegar.
- ☐ Use the fourth piece of pH paper to determine the pH of this mixture. Record the pH of the vinegar/baking soda solution.

**What Did You Observe?**

Liquid	pH
Distilled water	
Vinegar (weak acid)	
Baking soda (weak base)	
Mixture: vinegar + baking soda	

**What Did You Discover?**

*For questions 4 and 5 circle the best answer.*

4. a) The pH of the distilled water is      ACIDIC      NEUTRAL      BASIC  
b) The pH of the vinegar is      ACIDIC      NEUTRAL      BASIC  
c) The pH of the baking soda is      ACIDIC      NEUTRAL      BASIC
5. Which best explains what happened to the pH of the vinegar when you added the baking soda?  
a) the pH of the vinegar decreased (more acidic)  
b) the pH of the vinegar increased (more basic)  
c) the pH of the vinegar did not change
6. Did the baking soda neutralize the vinegar?      YES      NO      Explain.
- \_\_\_\_\_

**Making Connections**

7. Would baking soda make a good antacid?      YES      NO      Explain.
- \_\_\_\_\_