

Activity Sheet Answers
Chapter 6, Lesson 9
Neutralizing Acids and Bases

DEMONSTRATION

1. How did you know when the solution became close to neutral?

The solution became close to neutral when the color got close to the green color of the control universal indicator solution.



ACTIVITY

2. Does the solution become more acidic or less acidic as each drop of sodium carbonate is added to the indicator?

As more drops of sodium carbonate are added to the citric acid solution, the solution becomes less acidic.

EXPLAIN IT WITH ATOMS & MOLECULES

3. What happens to the protons from the H_3O^+ ions when a base is used to neutralize an acid?

When a base is added to an acidic solution, protons from the H_3O^+ in the solution are transferred to the base.

4. What do you know about the concentration of H_3O^+ ions and OH^- ions when a solution is neutralized?

When a solution is neutral, the concentration of H_3O^+ and OH^- are equal.

ACTIVITY

5. Did it take *more, less, or the same* amount of sodium carbonate solution to neutralize this more concentrated citric acid solution?

It takes more sodium carbonate solution to neutralize a more concentrated citric acid solution.

6. Thinking about the animation, why did you need more drops of sodium carbonate solution?

In a more concentrated acid solution, there are more H_3O^+ ions in the solution. It takes more molecules of base to accept protons from these ions to make the concentration of H_3O^+ and OH^- the same.

TAKE IT FURTHER

7. Which solution is the most concentrated? How do you know?

Sodium carbonate solution B is more concentrated than sodium carbonate solution A. You know this because it takes more drops of citric acid solution to neutralize solution B than it takes to neutralize solution A.

8. Antacids are medicines people take when the acid in their stomach is causing them discomfort. One advertisement says that the medicine provides relief for acid indigestion and “sour” stomach. What type of chemical do you think is in the medicine?

There is probably some kind of base in the antacid medicine. The base could help neutralize some of the stomach acid.