

Name: _____

Group: _____

Date: _____

Points: 40 points

Acids and Bases: Understanding Everyday Chemistry

Acids and bases are two important kinds of substances that you encounter every day! Acids usually taste sour, like the flavor in lemons or vinegar, and they release hydrogen ions (H^+) when mixed with water. Bases taste bitter and feel slippery, like soap or baking soda, and they release hydroxide ions (OH^-). The pH scale tells us how acidic or basic something is. It goes from 0 (very acidic) to 14 (very basic), with 7 being neutral (like pure water). Acids have a pH less than 7, and bases have a pH greater than 7. Understanding acids and bases helps us in science, cooking, cleaning, and health!

Part I. Fill in the blank with the correct words.

1. Acids taste _____ and have a pH _ than 7.
2. Bases feel _____ and have a pH _ than 7.
3. The pH scale ranges from _____ to _____.
4. A common example of a base you might find at home is _____.
5. When an acid and a base are mixed, they form _____ and _____.

Word Bank: bitter, water, 0, lower, higher, slippery, 14, salt, sour, baking soda

Part II. Multiple Choice Questions: Choose the correct answer from the choices for each question.

1. Which of these is an example of an acid?
 - a) Soap
 - b) Lemon juice
 - c) Baking soda
 - d) Toothpaste
2. What does the pH scale measure?
 - a) Temperature
 - b) How salty something is
 - c) How acidic or basic something is
 - d) How much water is present
3. Which statement is true about bases?
 - a) They taste sour
 - b) They turn blue litmus paper red
 - c) They release hydroxide ions (OH^-) in water
 - d) They have a pH less than 7

4. What happens in a neutralization reaction?
- a) Acid and base form water and salt
 - b) Acid becomes stronger
 - c) Base turns into acid
 - d) Only water is formed
5. Which safety rule is important when working with acids and bases?
- a) Taste every chemical to identify it
 - b) Never wear gloves
 - c) Always wear goggles
 - d) Work in a dark, closed room

Part III. Open-Ended Questions: Answer the following questions in complete sentences.

1. Describe one way you use acids or bases in your daily life.

2. Explain how the pH scale helps us understand substances around us.

3. Why is it important to be safe when using strong acids and bases?

VI. pH Scale Classification: Using the pH scale classify the following examples according to its pH number, color and level (acid, base or neutral).

Orange juice pH: ____ color: _____ level: _____

Rain pH: ____ color: _____ level: _____

Antiacids pH: ____ color: _____ level: _____

Normal stomach acid pH: ____ color: _____ level: _____

Bleach pH: ____ color: _____ level: _____

Vinegar pH: ____ color: _____ level: _____

Sodium hydroxide pH: ____ color: _____ level: _____

Seawater pH: ____ color: _____ level: _____

Ammonia pH: ____ color: _____ level: _____

Coffee pH: ____ color: _____ level: _____

Pure water pH: ____ color: _____ level: _____

Upset stomach acid pH: ____ color: _____ level: _____

Baking soda pH: ____ color: _____ level: _____

Magnesia Milk pH: ____ color: _____ level: _____

