

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)

1. **Acids** are substances that produce hydrogen ions (H^+) when dissolved in water. Lemon juice is an example of an acid.

A. What does lemon juice taste like? _____

B. What does it feel like if lemon juice gets in your eye? _____

2. **Bases** are substances that produce hydroxide ions (OH^-) when dissolved in water. Hand soap is an example of a base.

A. What does soap feel like? _____

B. What does it feel like if soap gets in your eye? _____

Gizmo Warm-up

The strength of an acid or base is measured on the **pH** scale. The pH scale runs from 0 to 14. **Acidic** substances have a pH below 7. **Basic (alkaline)** substances have a pH above 7. Pure water has a pH of 7 and is considered **neutral**.

The *pH Analysis* Gizmo™ allows you to find the pH of a variety of liquids. In the Gizmo, check that the **Substance in the tube** is **Ammonia**, and click **Test**. Wait until the animation is finished.

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1. **Indicators** change color in acids or bases. What is the color of the pH paper? _____
2. Compare the paper to the **pH color chart**. What is the pH of ammonia? _____
3. Is ammonia acidic or basic? _____

Test: Use the Gizmo to find the pH of each of the available substances. Classify each substance as acidic (pH < 7), basic (pH > 7), or neutral (pH = 7).

0-14 pH indicator paper			
Material in the tube	pH value	Acidic, Basic, or neutral?	Strong or Weak?
Bleach			
Hand soap			
Juice (lemon)			
Milk			
Saliva (human)			
Stomach acid			
Vinegar			
Water (distilled)			N/A

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