



# I Can Statement - Year 8:

## Acid & Alkali

| Unit/Topic Overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Pre-taught Vocabulary |                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|
| <p>This topic of acids and alkalis explores the chemical nature of substances we interact with every day. Acids aren't just dangerous chemicals found in labs; they are in everyday foods like lemons and vinegar. Alkalis are their chemical opposites, commonly found in cleaning products like soap and bleach. You will learn how to measure how strong an acid or alkali is using the pH scale, which ranges from 0 to 14. By using chemical dyes called indicators, you will discover how to identify these substances and observe how they cancel each other out during neutralisation reactions.</p> | Acid                  | Corrosive         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Alkali                | Neutral           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | pH scale              | Salt              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Indicator             | Hydrochloric acid |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Neutralisation        | Sodium hydroxide  |

| RAG Rating: |                                                                                                                                                                                    | Start | End |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|
| 1.          | I can identify the pH ranges for strong acids (0–3), weak acids (4–6), neutral (7), weak alkalis (8–10), and strong alkalis (11–14).                                               |       |     |
| 2.          | I can explain the difference between a simple indicator (like litmus, which only shows if it's an acid or alkali) and a Universal Indicator (which provides a numerical pH value). |       |     |
| 3.          | I can identify hazard symbols (Corrosive, Irritant) and state the necessary safety precautions for handling strong acids.                                                          |       |     |
| 4.          | I can state the general equation for neutralization: Acid + Alkali → Salt + Water                                                                                                  |       |     |
| 5.          | I can predict the name of the salt produced (e.g., Hydrochloric acid makes a Chloride, Sulfuric acid makes a Sulfate, Nitric acid makes a Nitrate).                                |       |     |
| 6.          | I can explain how neutralization is used in everyday life, such as using antacids for indigestion or lime to treat acidic soil.                                                    |       |     |
| 7.          | I can identify the products of an acid reacting with a metal (Salt + Hydrogen) and describe the "Squeaky Pop" test for hydrogen gas.                                               |       |     |
| 8.          | I can identify the products (Salt + Water + Carbon dioxide) and describe the "Limewater" test for CO <sub>2</sub>                                                                  |       |     |
| 9.          | I can record observations during a reaction, such as effervescence (fizzing), temperature changes (exothermic), or color changes.                                                  |       |     |
| 10.         | I can write specific word equations for neutralization reactions, such as predicting that hydrochloric acid reacting with sodium hydroxide produces sodium chloride and water.     |       |     |