

Vocabulary

English	Write it 3 times (English)		
acids			
alkalis			
bases			
metal			
salt			
hydrogen			
base			
carbonate			
carbon dioxide			
indicator			
Litmus			
Universal indicator			
acidic			
neutral			
alkaline			

At IGCSE you meet **acids** and **alkalis** and the **pH** scale. An acid forms **hydrogen ions** (H^+) when dissolved in water.

- Acids taste sour and turn blue litmus red.
- Alkalis are soluble **bases** .

Nothing here is hard – it just organises the reactions.

New ideas

Read these first, then do the Practice.

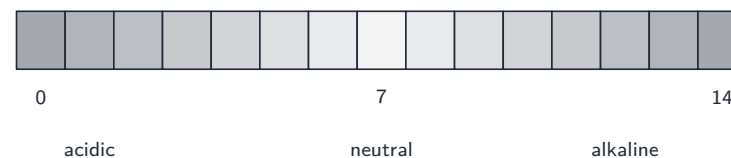
■ 1 Reactions of acids

Acid reacts with	Products
a metal	a salt + hydrogen
a base (neutralisation)	a salt + water
a carbonate	a salt + water + carbon dioxide

■ 2 Indicators and pH

An **indicator** changes colour to show acid or alkali. **Litmus** : red in acid, blue in alkali.

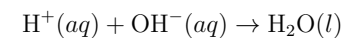
The **pH** scale runs 0–14. **Universal indicator** shows it:

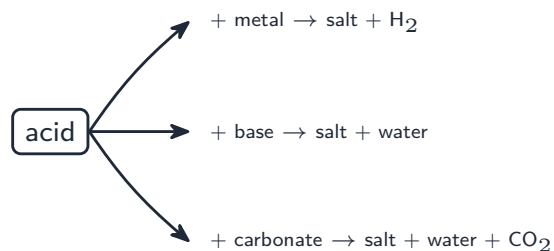


- below 7 → **acidic** ; exactly 7 → **neutral** ; above 7 → **alkaline** .

■ 3 Neutralisation

When an acid reacts with an alkali, the H^+ and OH^- ions join to make water:





Watch out: an **alkali** is a base that *dissolves* in water – every alkali is a base, but not every base is an alkali. On the pH scale, below 7 is acidic, exactly 7 is neutral, above 7 is alkaline.

Practice

Try these in order.

7.1 What ion do all acids form in water? [1]

7.2 Name the products of (a) acid + metal, (b) acid + carbonate. [2]

7.3 What colour is litmus in (a) an acid, (b) an alkali? [2]

7.4 What colour does universal indicator show at pH 7, and what is that called? [2]

7.5 Write the ionic equation for neutralisation. [1]

7.6 Challenge. Write the **word** equation for dilute hydrochloric acid reacting with calcium carbonate, and name the gas given off. [3]