Single Displacement Laboratory:
Determining an Activity Series Part I

Reactivity is a chemical property of an element that indicates the tendency of the element to form a compound.
- an element that forms compounds easily has high reactivity
- an element that does not form compounds has low reactivity

An **activity series** is a list of elements in order of their reactivity, based on evidence gathered from single displacement reactions.

Purpose: We will arrange a group of metals from most to least reactive based on their single displacement reaction with an acid.

Materials: five metals (listed in table)
five test tubes
test tube rack
dilute hydrochloric acid

Procedure: 1) Obtain five different metal samples: calcium, magnesium, zinc, nickel, copper.
2) Label each test tube: Ca, Mg, Zn, Ni, Cu.
3) Into the correctly labelled test tube, place the metal sample.
4) Add dilute hydrochloric acid to each test tube.
5) Record observations on each test tube.

Chemical Equation:

$$\mathbf{M}_{(s)} + HCl_{(aq)} \rightarrow \mathbf{M}Cl_{x(aq)} + H_{2(g)}$$

(where **M** is any metal)

Observations:

Metal	Observations (amount of gas evolved, heat produced, etc.)	Chemical Equation	Reactivity Rank
copper			
magnesium			
zinc			
calcium			
nickel			

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