

# Reactivity

## Lesson 10 - Method Writing

Chemistry - Key Stage 3

Miss Fenner



# Complete this general equation

Metal Oxide + Acid  $\rightarrow$  Salt + Water



# Complete this general equation

Metal + Acid  $\rightarrow$  Salt + Hydrogen



# Complete this general equation

Alkali + Acid  $\rightarrow$  Salt + Water



# Complete this general equation

Metal Carbonate + Acid  $\rightarrow$  Salt + Water + Carbon Dioxide



# Independent Practice

1. List all the possible ways you could make potassium sulfate.
2. List all the possible ways you could make copper sulfate.



# Independent Practice

1.

Potassium oxide + sulfuric acid → potassium sulfate + water

Potassium + sulfuric acid → potassium sulfate + hydrogen

Potassium hydroxide + sulfuric acid → potassium sulfate + water

Potassium carbonate + sulfuric acid → potassium sulfate + water + carbon dioxide



# Independent Practice

2.

Copper oxide + sulfuric acid → copper sulfate + water

Copper + sulfuric acid → copper sulfate + hydrogen

Copper hydroxide + sulfuric acid → copper sulfate + water

Copper carbonate + sulfuric acid → copper sulfate + water + carbon dioxide



# Our Circumstances

Reaction between copper and acid is very slow

Too many waste products when a metal carbonate reacts with an acid

Our lab is very low on copper hydroxide

Select which reactants you are going to use.

Can you explain why you have chosen them?



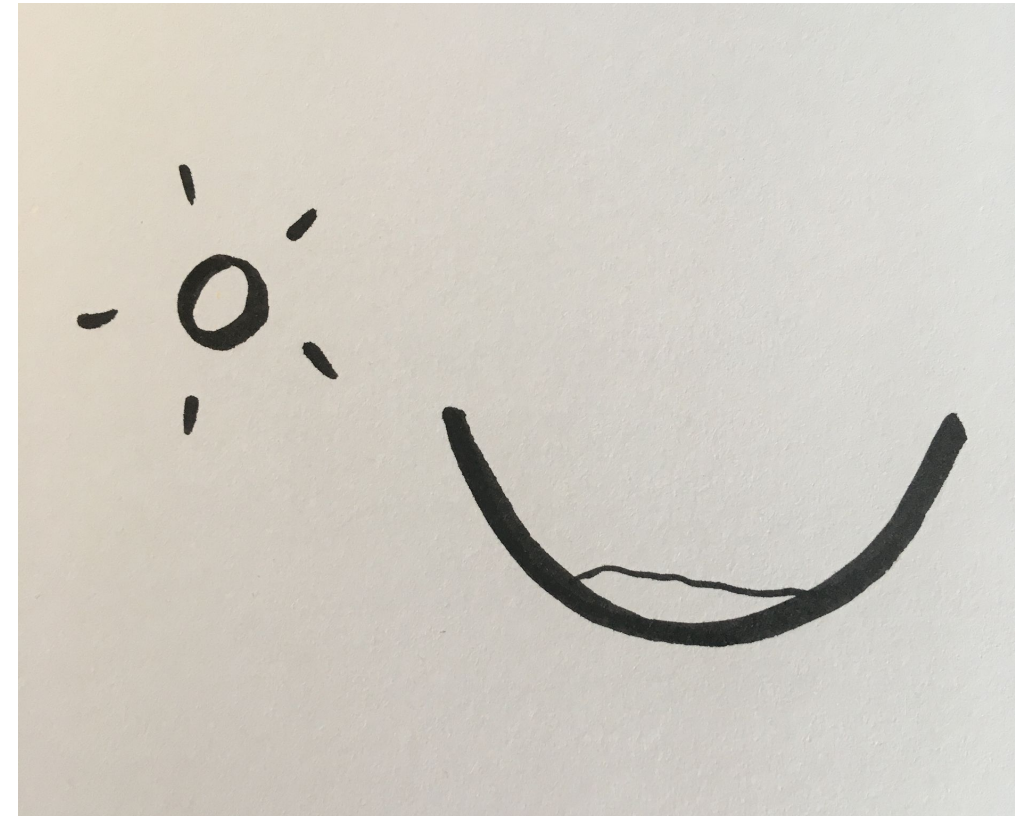
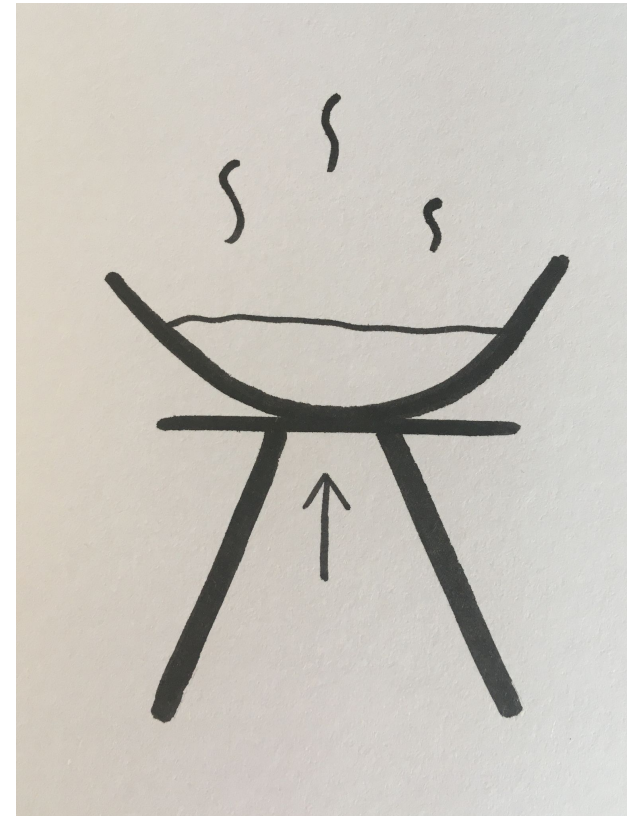
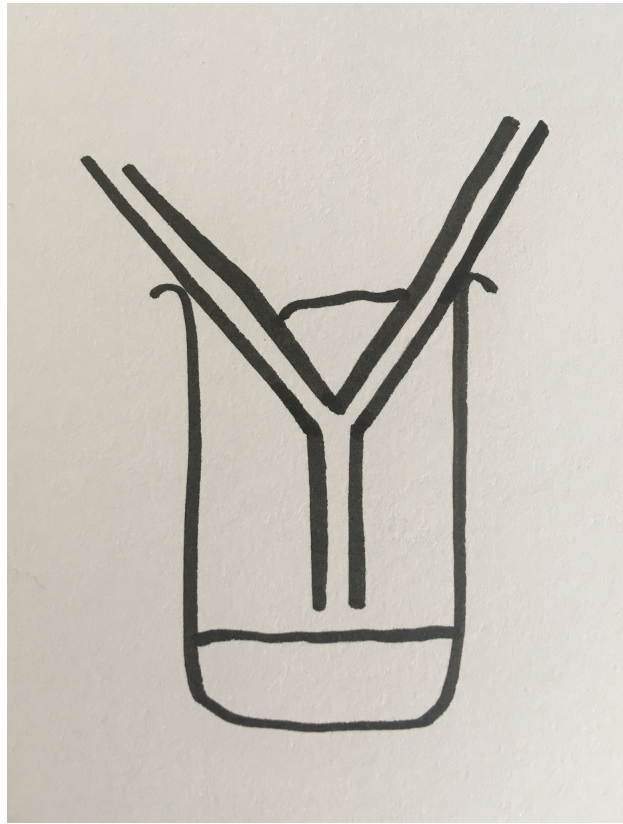
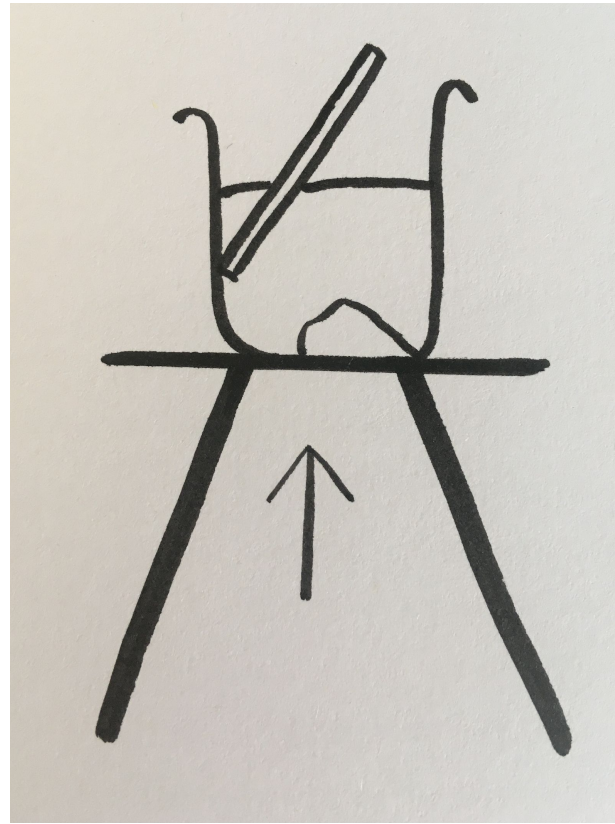
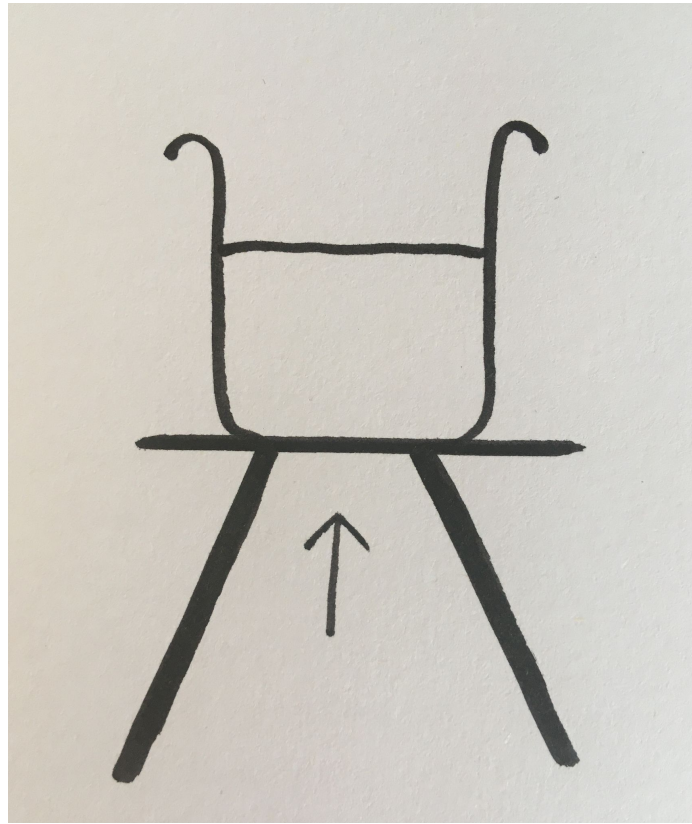
# Our Circumstances

Copper oxide + Sulfuric acid  $\rightarrow$  Copper Sulfate + Water

This is because using copper will take too long, we will produce too many waste products using copper carbonate and our lab may not have enough copper hydroxide for the reaction.



**Create a list of equipment you will need to complete this practical.**



# Equipment

Beaker x2

Tripod

Bunsen Burner

Glass Rod

Funnel

Filter Paper

Evaporating Basin

Measuring Cylinder

Spatula



# Imperative + Quantity + Equipment

You need to first of all collect some bread.

**Collect 2 slices of bread.**



# Imperative + Quantity + Equipment

Next you will need to find some butter which you spread on the bread.

**Spread 5g of butter on the bread using a knife.**



# Imperative + Quantity + Equipment

You should then cut up some cheese.

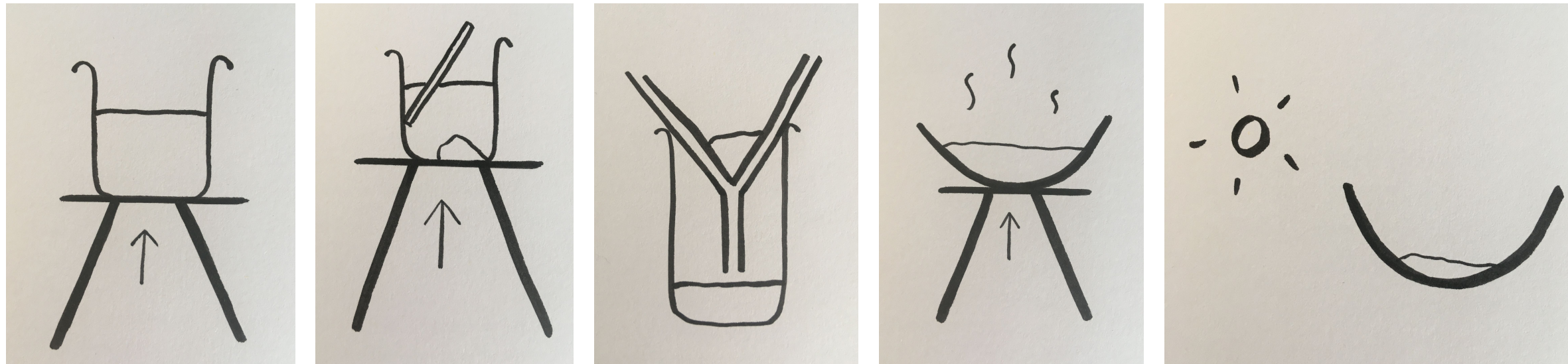
**Cut 3 slices** of cheese using a **chopping board** and **sharp knife**.



# Independent Practice

Imperative + Quantity + Equipment

Write a method for making copper sulfate. Use the pictures to help you.



# Independent Practice

Measure 50ml of sulfuric acid using a measuring cylinder.

Pour the sulfuric acid into a beaker.

Place the beaker on a tripod.

Heat the sulfuric acid gently for about 5 mins using a Bunsen Burner.

Add 5 spatulas of copper oxide to the sulfuric acid.

Stir for 1 min using the glass rod.

Continue to add copper oxide until it is in excess.

Place 1 piece of filter paper into a funnel

Put the funnel into a beaker.

Pour the reaction mixture into the filter paper.

Pour the filtrate into an evaporating basin.

Place the evaporating basin onto the tripod.

Heat until there is 1cm of liquid left using the Bunsen Burner.

Leave the evaporating basin on a windowsill for 24 hrs.

