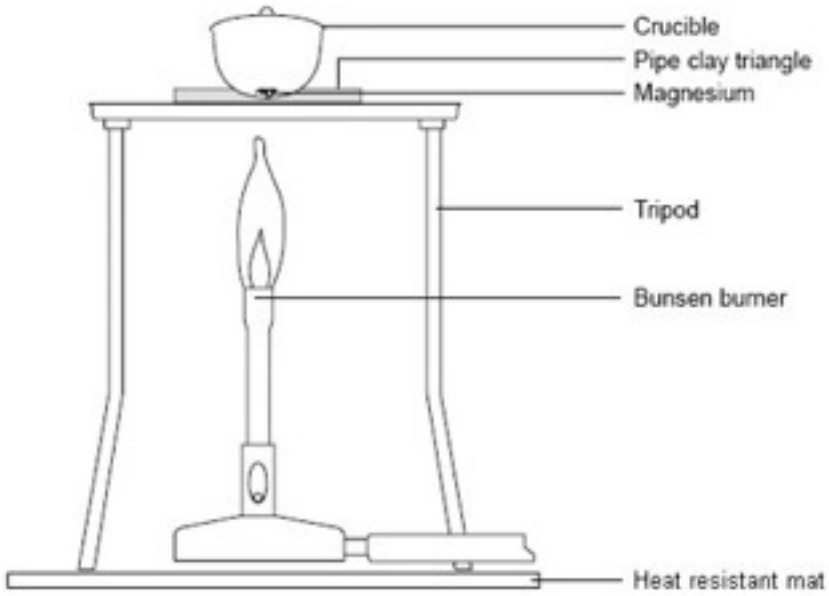
Synthesis Reaction – Magnesium and Oxygen

Materials

Eye protection
Crucible with lid
Tongs
Pipe clay triangle
Bunsen burner
Tripod
Heat resistant mat
Scale or Balance

Procedure

a Cut a piece of magnesium about 10-15 cm long. Twist it into a loose coil.
b Weigh the crucible with the lid (mass 1) and then the magnesium inside the crucible with the lid (mass 2). Record the mass in the Data Table.
c Set up the Bunsen burner on the heat resistant mat with the tripod. Place the pipe clay triangle over the tripod in a 'star of David' formation, ensuring that it is secure. Place the crucible containing the magnesium in the pipe clay triangle and put the lid on.



d Light the Bunsen burner and begin to heat the crucible. It is best to start with a gentle blue flame, but you will need to use a roaring flame (with the air hole fully open) to get the reaction to go.
e Once the crucible is hot, gently lift the lid with the tongs a little to allow some oxygen to get in. You may see the magnesium begin to flare up. If the lid is off for too long then the magnesium oxide product will begin to escape. Don't let this happen.
f Keep heating and lifting the lid until you see no further reaction. At this point, remove the lid and heat for another couple of minutes. Replace the lid if it appears that you are losing some product.
g Turn off the Bunsen burner and allow the apparatus to cool.
h Re-weigh the crucible with lid containing the product (mass 3).

Data Table

Mass 1 (g)	
Mass 2 (g)	

Mass 3 (g)	

Analysis

1. Calculate the mass of the Magnesium reactant.

2. Calculate the mass of the product.

3. Calculate the increase in mass.

4. Identify and write the balanced chemical equation for this Synthesis Reaction.

Evaluation

Identify possible errors in this activity that may result in unconvincing results.