

STUFF AND SUBSTANCE: MAGNESIUM AND OXYGEN

For many chemical reactions the substances have to be hot to react with each other. You are going to investigate the reaction between magnesium and oxygen.

Task A Heating magnesium in air

1. Your teacher will demonstrate what happens when magnesium ribbon is heated in air. What can you see happening?

Task B Reacting magnesium with oxygen

2. Your teacher will show you a video in which magnesium is placed in a test tube attached to a bag of pure oxygen. The magnesium is then heated. What do you predict will happen to the magnesium and the bag of oxygen?
3. Observe carefully. What can you see happening?
4. Can you use the ideas of particles to explain your observations?

Task C Measuring the change in mass

5. Take a piece of magnesium and curl it into a corkscrew shape. Put the magnesium into a crucible and replace the lid. Note the starting mass of the magnesium, crucible and lid.
6. Set up a Bunsen burner with a tripod and pipeclay triangle. Put the filled crucible on the pipeclay triangle. Strongly heat the crucible. Every few moments, use a pair of tongs and gently lift the lid slightly. Why is this necessary?
7. When you no longer get a white flash, turn off the Bunsen burner and allow the equipment to cool.
8. Measure the mass of the cold crucible, lid and its contents. What has happened to the mass?
9. Use the particle model to explain your observation.



Magnesium is highly flammable. Do not look directly at the burning magnesium. Blue glass or Polaroid glass should be used to shield the eyes.

