Mission Assignment: Outline the combustion reaction

KS3-14-04

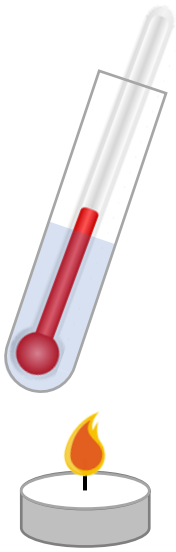
You are going to compare the heat released from different fuels.

Equipment
- matches
- boiling tube
- tongs
- thermometer
- stopwatch
- measuring cylinder
- 2dp mass balance
- water
- fuel samples

Method
1. Measure the mass of the fuel (if using a liquid fuel, measure the mass including the burner).
2. Measure out 10ml of water into the boiling tube. Measure the temperature of the water.
3. Light the fuel. Then, hold or clamp the boiling tube 2-4cm over the fuel. At the same time, start your stopwatch.
4. After 1 minute, remove the boiling tube from the heat and extinguish the flame.
5. Measure the temperature of the water and calculate the temperature change.
6. Measure the mass of the fuel and calculate the change in mass.
7. Repeat steps 2-5 for a different fuel.
8. Divide the change in temperature by the change in mass to determine which fuel released more energy.

Fuel	Start mass (g)	End mass (g)	Start temp of water (˚C)	End temp of water (˚C)

Fuel	Change in temp (˚C)	Change in mass (g)	Temp change per gram (˚C/g)



Temperature change per gram (˚C/g) = Change in temperature (˚C) ÷ Change in mass (g)