

Metal or non-metal

This task is about testing elements to see if they are metal or non-metal.

Carry out a series of tests on the elements listed below to find out if they are a metal, or a non-metal. Elements to be tested; magnesium (Mg), calcium (Ca), carbon (C), sulfur (S), zinc (Zn), copper (Cu), iodine (I), and aluminium (Al). You will need to carry out tests for; lustre, electrical conductivity, malleability.

The melting point of these elements has been put in the table.

Tests:

- . Malleability – does it bend or can it be beaten into shape?
- . Electrical conductivity – set up a simple circuit using a cell, wires, and bulb.
- . Lustre – does it shine when it is scratched or sanded?

a) Complete this table with your results.

Element	Malleability (yes or no?)	Melting point (high or low?)	Electrical conductivity	Lustre (yes or no?)
Magnesium		648°C		
Calcium		839°C		
Carbon (graphite)		3550°C		
Sulfur		112°C		
Zinc		419°C		
Copper		1083°C		
Iodine	No	113°C	No	No
Aluminium		660°C		

Check your results with your teacher ☐

b) Which elements appear to have the same characteristics? Place these elements into **two** groups based on these characteristics

Group 1: _____ Group 2: _____

c) i) Name any element(s) which does/do not appear to fit easily into either of these two groups.

ii) Why did you decide that this element(s) did not fit in with the others? ;

d) Look at a periodic table. On which side do you find the elements that do not have lustre, malleability, or can not conduct electricity? _____