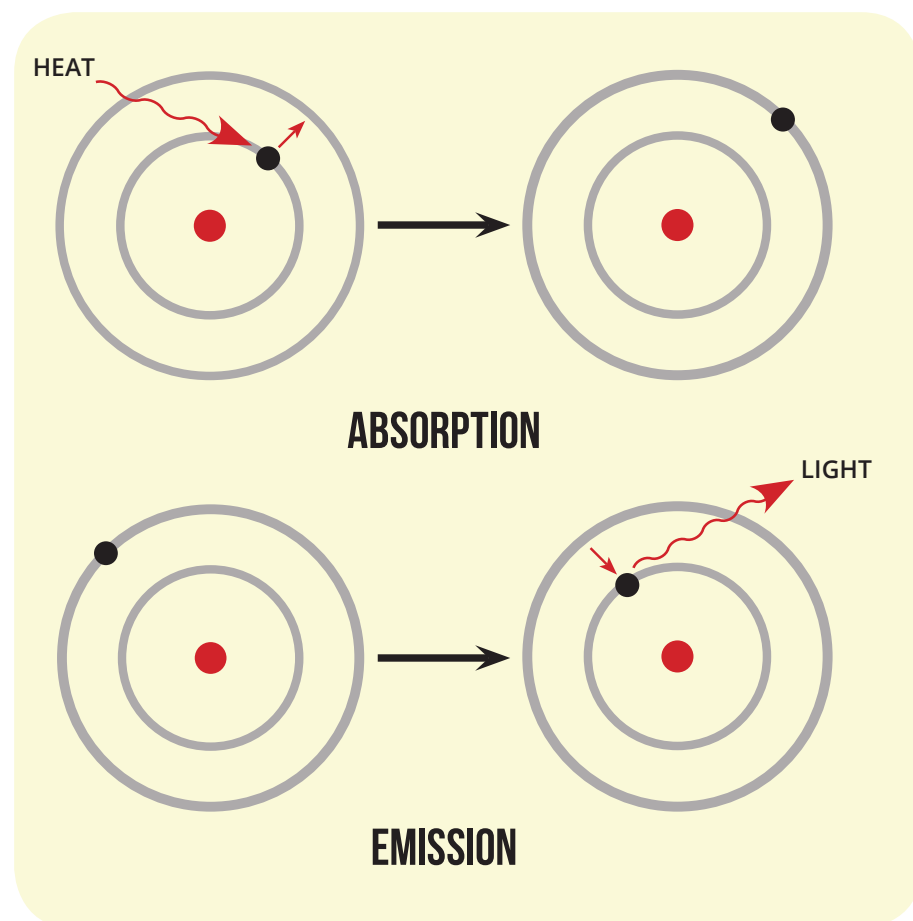


METAL ION FLAME TESTS

A flame test is an analytical procedure used by chemists to detect the presence of particular metal ions, based on the colour of the flame produced.



When heated, the electrons in the metal ion gain energy and can jump into higher energy levels. Because this is energetically unstable, the electrons tend to fall back down to where they were before, releasing energy as they do so. This energy is released as light energy, and as these transitions vary from one metal ion to another, it leads to the characteristic colours given by each metal ion.

 LITHIUM Li^+	 SODIUM Na^+	 POTASSIUM K^+	 RUBIDIUM Rb^+	 CAESIUM Cs^+	 CALCIUM Ca^{2+}
 STRONTIUM Sr^{2+}	 BARIUM Ba^{2+}	 RADIUM Ra^{2+}	 COPPER Cu^{2+}	 IRON $\text{Fe}^{2+}/\text{Fe}^{3+}$	 BORON B^{3+}
 INDIUM In^{3+}	 LEAD Pb^{2+}	 ARSENIC As^{3+}	 ANTIMONY $\text{Sb}^{3+}/\text{Sb}^{5+}$	 SELENIUM $\text{Se}^{2+}/\text{Se}^{4+}$	 ZINC Zn^{2+}