

## Class 7 Science – Metal oxides

In our last lesson, we undertook an experiment where we burned metal and metal-based compounds. The first substance we burned was the metal magnesium.

If you remember, when the thin ribbon of magnesium was heated enough it burned with a white, bright light and the product was a whitish greyish substance that would crumble quite easily into a powder.



You will remember that combustion reactions involve oxygen and it is no different with the combustion of magnesium. When metals react with oxygen they form metal oxides, in this case, magnesium oxide, which was the white/grey powdery substance.



Metal oxides are **basic**: This means they will react with acids (to form salts) and turn universal indicator blue(weak bases) or purple(strong bases) and can be somewhat corrosive. You hopefully remember our work on acids and bases in recent weeks where we tested acids and bases with universal indicator.

The second substance we burned was calcium carbonate which is found in rocks and minerals. In this case, we did not see much in the way of a reaction, but the product was also a metal oxide, calcium oxide which is also known as **lime** (not the fruit!).



Like other oxides, lime is very basic and can actually react with water to produce a lot of heat and is quite corrosive. We will do more experiments on lime when we get back to school. Lime or quicklime is used extensively in making steel and concrete and is also used to make glass, cement and other chemicals. It is also used as portable heat sources with its ability to produce heat by simply adding to water.

Historically, quicklime was used as a weapon called Greek fire by the Byzantine Empire, where they would heat it and then light it before turning it on their enemies. The Romans deployed choking clouds of lime powder on enemies that took refuge in caves.

