

3.1 - Properties and Uses of Metals	
Copper	Used for electrical wiring -> good conductor of electricity and ductile .
Gold	Used to make jewellery -> shiny and resistant to corrosion .
Steel	Used for buildings, bridges and cars -> very strong . Steel is an alloy of iron.
Aluminium	Used for aeroplanes and overhead cables -> has a low density so it is lightweight .
Titanium	Used for hip replacements -> resistant to corrosion , strong and low density .

3.2 - Reactivity Series (Practice writing metals in order of reactivity)

Most reactive  Least reactive	Potassium	Please
	Sodium	Send
	Calcium	Charlie's
	Magnesium	Monkeys
	Aluminium	And
	<i>Carbon</i>	
	Zinc	Zebras
	Iron	In
	Tin	The
	Lead	Lead
	<i>Hydrogen</i>	
	Copper	Cages
	Silver	Securely
Gold	Guarded	
Platinum	Please	

3.3 - Reactions of Metals	
Metal + Acid	metal + acid -> salt + hydrogen
	Metal will react if it is more reactive than hydrogen .
	Test for hydrogen gas using a lit splint . Listen for squeaky pop .
Metal + Oxygen	metal + oxygen -> metal oxide
	Oxidation reaction as metal gains oxygen .
Metal + Water	metal + water -> metal hydroxide + hydrogen
	Only very reactive metals e.g. group 1 alkali metals .
	Metal hydroxide produces alkaline solution. Turns universal indicator purple .
Displacement Reaction	A more reactive metal displaces a less reactive metal from its compound .
Rusting	Occurs when iron or steel reacts with both oxygen and water .

3.4 - Extraction and Recycling of Metals

Ore	A rock that you can extract a metal from.
Extraction using Carbon	Use if the metal is less reactive than carbon .
	Heat metal oxide with carbon . Carbon displaces metal from its oxide.
	e.g. carbon + iron oxide -> iron + carbon dioxide.
Extraction using Electrolysis	Use if the metal is more reactive than carbon .
	Split up metal oxide using an electrical current .
	e.g. aluminium oxide -> aluminium + oxygen
Advantages of Recycling	Less waste sent to landfill . Less energy used as less mining and extraction required. Conserves ores which are limited resources .

**Y8 Science Cycle 1 - Sheet 3
Metals**