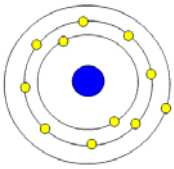
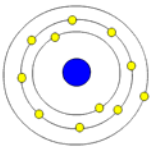
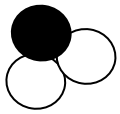
List 3 physical properties of metals.	List 3 chemical properties of metals.	Where on the periodic table are metals found?	Where on the periodic table are non-metals found?
Shiny, malleable, ductile, high mpt & bpt, conduct heat & electricity	Can react with oxygen, acid, water	Left hand side and middle	Right hand side
metal + acid produces …	metal + water produces …	metal carbonate + acid produces …	metal + oxygen produces
metal salt + hydrogen	metal hydroxide + hydrogen	metal salt + carbon dioxide + water	metal oxide
Explain why, chemically, Al is used to make window frames.	zinc + hydrochloric acid produces …	What is the formula for hydrochloric acid?	What is the formula for sulfuric acid?
Doesn't react with water as it forms a aluminium oxide layer which protects the metal	Zinc chloride + hydrogen	HCl	H_2SO_4
What is the formula for sodium hydroxide?	What is the formula for copper sulfate?	What is the formula for calcium hydroxide?	What is the formula for potassium carbonate?
NaOH	$CuSO_4$	$Ca(OH)_2$	K_2CO_3

What colour is copper oxide?	What colour is copper carbonate?	Complete this word equation: zinc + sulfuric acid	Complete this word equation: water + sodium
black	green	zinc sulfate + hydrogen	sodium hydroxide + hydrogen
Complete this word equation: magnesium + oxygen →	Complete and balance this equation: $Na + O_2 \rightarrow$	Name the 3 sub-atomic particles that make up an atom.	What do you call the outer electron shell around an atom?
magnesium oxide	$4Na + O_2 \rightarrow 2Na_2O$	Protons, neutrons and electrons	Valance shell
Up to how many electrons can the first orbital hold?	Up to how many electrons can the second orbital hold?	Up to how many electrons can the third orbital hold?	How do you test for CO_2?
Up to 2 electrons	Up to 8 electrons	Up to 8 electrons	Bubble it through lime water $Ca(OH)_2$ - it goes milky colour
What is an ion?	How do you store Li, Na and K?	Complete and balance this equation: $K + H_2O \rightarrow$	Complete and balance this equation: $Ca + H_2O \rightarrow$
An ion is a charged particle that has lost/ gained electrons to get a full outer shell	In oil as they react violently with the oxygen in the air.	$2K + 2H_2O \rightarrow 2KOH + H_2$	$Ca + 2H_2O \rightarrow Ca(OH)_2 + H_2$

Describe how to test for hydrogen gas.	Place these metals in order from most reactive to least reactive Mg, Cu, Na, Zn	Which metal would you use to make aircrafts from and why?	What is the formula of the hydroxide ion?
Place a light match in the gas and if the gas burns with a pop it's H_2	Na, Mg, Zn, Cu	Aluminium (or aluminium alloy) - it is strong and light / low density	OH^-
What is the formula of the carbonate ion?	What is the formula of the bicarbonate ion?	What is the formula of the sulfate ion?	What is the formula of the nitrate ion?
CO_3^{2-}	HCO_3^-	SO_4^{2-}	NO_3^-
Which ion do all acids contain?	What pH are acids?	What pH are bases?	What is the pH of a neutral solution?
Hydrogen ion H^+	Less than 7	Greater than 7	7
What colour is Universal indicator with a strong acid?	What colour is universal with a strong base/alkali?	What colour is Universal Indicator with a neutral substance?	acid + base produces what?
red	purple	green	A salt + water

What does this formula stand for? $NaHCO_3$	What does this formula stand for? $Fe_2(SO_4)_3$	What does this formula stand for? K_2CO_3	What does this formula stand for? CuO
sodium bicarbonate	Iron(III) sulfate	Potassium carbonate	copper oxide
What is the charge on a proton?	What is the charge on a electron?	What is the charge on a neutron?	If an atom has 6 electrons, how many protons does it have?
positive	negative	no charge	6
How many electrons does a Ca^{2+} ion have?	What is this atom called? 	**What is the electron arrangement of this atom?** 	What is the pH of dilute ammonia solution, pH 10 or 13?
18 (2.8.8)	sodium	2,8,1	pH 10
What is the charge on a sodium ion?	What is the charge on an oxide ion?	What is the charge on a potassium ion?	What is the charge on a magnesium ion?
1 Plus (Na^+)	2 negative (O^{2-})	1 positive (K^+)	2 positive (Mg^{2+})

What is an ionic compound?	What does the atomic number tell us?	What does the mass number tell us?	What is an element?
compounds made up of positive and negative ions bonded together so they are neutrally charged	How many protons an atom has	The number of protons plus the number of neutrons in the nucleus	a substance which is made up of only one type of atom
What is a compound?	What is a mixture?	What are the three states of matter?	Is this an element, compound or mixture? 
a substance which is made up of two or more elements chemically bonded together.	a substance made from different elements or compounds that are easily separated	solid, liquid and gas	compound
Is this an element, compound or mixture?	List 3 ways of separating mixtures?	$2Mg + O_2 \rightarrow 2MgO$ Name the reactants?	$2Mg + O_2 \rightarrow 2MgO$ Name the product?
element	Filtering, decanting, evaporation, distillation, centrifuge, chromatography	Magnesium and oxygen	Magnesium oxide
What is the pH of a strong base?	What is the pH of a weak acid?	How is acid rain formed?	What is the main gas produced when fossil fuels burn?
Greater than 12	3 to 6	Gases in smoke react with water in the clouds making acid rain which falls to the ground.	Sulfur dioxide

What acid is produced when SO_2 reacts with water?	What does acid rain do to buildings?	What does acid rain do to rivers?	List 2 ways of preventing rust.
sulfuric acid	If they contain carbonates they react causing damage	Lowers the pH which harms the fish and other aquatic life	coating the Fe with paint, galvanising the iron (coating with Zn),
List 3 things that iron can be used for?	List 3 things that copper can be used for?	List 3 things that lead can be used for?	List 3 things that gold can be used for?
car bodies, bridges, railway tracks, bolts, mixed with Cr & Ni to make stainless steel	electrical wires, hot water pipes, saucepan bottoms, jewellery	car batteries, flashings for roofs, casting to protect cables under the sea, component of solder	jewellery, ornaments, dentistry, coating on electrical wires, medicines
Group 2 of the periodic table have how many electrons in their valance shell?	Group 17 of the periodic table form ions with what charge?	What sub-atomic particles are found in the nucleus of an atom?	Li^+ has an electron arrangement of what?
2	1^-	Protons and neutrons	2
F^- has an electron arrangement of what?	Copper hydroxide contains these ions: Cu^{2+} and OH^- What is its formula?	Which is <u>not</u> a physical property of metals? Ductile, lustrous, react with acid, malleable.	What type of salts does sulfuric acid produce?
2,8	$Cu(OH)_2$	react with acid (a chemical property)	sulfates