






The periodic table - group 0, group 1, group 7 and the transition metals				
You should be able to:		Lesson covered	Check your understanding	
			Before	After
Development of periodic table	Describe how the modern periodic table (Mendeleev) was developed as scientists gained greater understanding.			
	Explain how the position of an element in the periodic table is related to the arrangement of electrons in its atoms (from its atomic number).			
Metals and non-metals	Elements that react to form positive ions are metals. Elements that do not form positive ions are non-metals.			
	Know where the metals and the non-metals are found in the periodic table.			
Group 0 - noble gases	The elements in Group 0 of the periodic table are called the noble gases. They are unreactive and do not easily form molecules because their atoms have stable arrangements of electrons.			
	The boiling points of the noble gases increase with increasing relative atomic mass (going down the group).			
	Explain how properties of the elements in Group 0 depend on the outer shell of electrons of the atoms and predict properties from trends down the group (data is provided).			
Group 1 - alkali metals	The elements in Group 1 are known as the alkali metals and have characteristic properties because of the single electron in their outer shell.			
	Be able to describe the reactions of the first three alkali metals with: <ul style="list-style-type: none"> oxygen chlorine water and link these to the trend in reactivity.			
	Explain how properties of the elements in Group 1 depend on the outer shell of electrons of the atoms and predict properties from given trends down the group.			

	The elements in Group 7 table are known as the halogens. They consist of molecules made of pairs of atoms.			
	You should be able to describe the nature of the compounds formed when chlorine, bromine and iodine react with metals and non-metals (ionic or covalent).			
Group 7 - halogens	Know that in Group 7, the further down the group an element is the higher its relative molecular mass, melting point and boiling point and be able to predict properties from given trends down the group (given data).			
	In Group 7, the reactivity of the elements decreases going down the group. Explain how properties of the elements in Group 7 depend on the outer shell of electrons of the atoms.			
	Know that a more reactive halogen can displace a less reactive halogen from an aqueous solution of its salt.			
Transition metals	The transition elements are metals with similar properties. You should be able to describe the difference compared with Group 1 in: <ul style="list-style-type: none"> • melting points • densities • strength • hardness • reactivity with oxygen • reactivity with water • reactivity with halogens. Be able to link these general properties by reference to Cr, Mn, Fe, Co, Ni, Cu.			
	Many transition elements have ions: <ul style="list-style-type: none"> • with different charges • form coloured compounds • are useful as catalysts. Be able to link these general properties by reference to compounds of Cr, Mn, Fe, Co, Ni, Cu.			

Help

These websites will provide you with extra help when we are studying the topic and are useful with revision.

BBC Bitesize Group 1	bbc.co.uk/education/guides/zvydmp3/revision	
BBC Bitesize Groups and Periods	bbc.co.uk/education/guides/zb3j6sg/revision	
BBC Bitesize Group 7	bbc.co.uk/education/guides/z3vwxnb/revision	
Fuse School Group 7 The Halogens	youtube.com/watch?v=yW_C10cEzMk	
YouTube Group 1 vs Transition Metals	youtube.com/watch?v=zQLPxHtqIKI	

Keywords:

- group
- period
- atomic number
- Mendeleev
- element
- noble gas
- alkali metal
- halogen
- displacement
- reactivity
- electron
- density
- compound