

Group 1 - alkali metals

They are very reactive with oxygen, water and chlorine		They only have 1 electron in their outer shell. They form +1 ions
The reactivity of Group 1 elements increases as you go down the group		As you go down the group the atoms get bigger. This means that the negative outer electron is further from the positive nucleus so it is more easily lost
react with oxygen	metal + oxygen → metal oxide	observe: bright light, flame, white solid produced
react with water	metal + water → metal hydroxide + hydrogen	observe: fizzing (gas produced), metal moves on water, flame (for Na or K). metals further down the group react more violently.
react with chlorine	metal + chlorine → metal chloride	observe: bright light, flame, white solid produced

Group 7 - halogens

halogens are made of molecules. Each molecule contains a pair of atoms.	halogen atoms have 7 electrons in their outer shells. They form -1 ions
melting and boiling points increase down the group (gas at the top, then liquid, then solid)	
reactivity decreases down the group because...	...as the atoms get bigger, the nucleus is further from the outer shell so has less attraction to outer electrons
react with metals metal + halogen → metal halide	e.g. $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$
react with hydrogen hydrogen + halogen → hydrogen halide	e.g. $\text{Cl}_2 + \text{H}_2 \rightarrow 2\text{HCl}$
take part in displacement reactions: a more reactive halogen will displace the less reactive halogen from the salt.	e.g. $\text{Cl}_2 + 2\text{KBr} \rightarrow 2\text{KCl} + \text{Br}_2$