

Group Trends

The key areas of study in this topic are:

- Group 1 elements (the Alkali Metals)
- Group 7 elements (the Halogens)
- Group 0 elements (the Noble Gases)

By the end of this topic I should be able to:

	Start	End
6.1 Explain why some elements can be classified as alkali metals (group 1), halogens (group 7) or noble gases (group 0), based on their position in the periodic table		
6.2 Recall that alkali metals are soft and have relatively low melting points		
6.3 Describe the reactions of lithium, sodium and potassium with water		
6.4 Describe the pattern in reactivity of the alkali metals, lithium, sodium and potassium, with water; and use this pattern to predict the reactivity of other alkali metals		
6.5 Explain this pattern in reactivity in terms of electronic configurations		
6.6 Recall the colours and physical states of chlorine, bromine and iodine at room temperature		
6.7 Describe the pattern in the physical properties of Cl ₂ , Br ₂ and I ₂ , and use this pattern to predict the physical properties of other halogens		
6.8 Describe the chemical test for chlorine		
6.9 Describe the reactions of Cl ₂ , Br ₂ and I ₂ , with metals to form metal halides, and use this pattern to predict the reactions of other halogens		
6.10 Recall that Cl ₂ , Br ₂ and I ₂ , form hydrogen halides which dissolve in water to form acidic solutions, and use this to predict the reactions of other halogens		
6.11 Describe the relative reactivity of the halogens chlorine, bromine and iodine, as shown by their displacement reactions with halide ions in aqueous solution, and use this pattern to predict the reactions of astatine		
6.12 Explain why these displacement reactions are redox reactions in terms of gain and loss of electrons, identifying which of these are oxidised and which are reduced		
6.13 Explain the relative reactivity of the halogens in terms of electronic configurations		
6.14 Explain why the noble gases are chemically inert, compared with the other elements, in terms of their electronic configurations		
6.15 Explain how the uses of noble gases depend on their inertness, low density and/or non-flammability		
6.16 Describe the pattern in the physical properties of some noble gases and use this pattern to predict the physical properties of other noble gases		