

Subject	Year	Term
Chemistry	12	1
Topic		
2.2.1 Electron structure		
Content (Intent)		
Prior Learning (Topic) KS4 10C1 Atomic structure and the periodic table 10C2 Bonding, structure, and properties of matter		
Energy levels, shells, sub-shells, atomic orbitals, electron configuration (a) the number of electrons that can fill the first four shells (b) atomic orbitals, including: (i) as a region around the nucleus that can hold up to two electrons, with opposite spins (ii) the shapes of s- and p-orbitals (iii) the number of orbitals making up s-, p- and d-sub-shells, and the number of electrons that can fill s-, p- and d-sub-shells (c) filling of orbitals: (i) for the first three shells and the 4s and 4p orbitals in order of increasing energy (ii) for orbitals with the same energy, occupation singly before pairing (d) deduction of the electron configurations of: (i) atoms, given the atomic number, up to $Z = 36$ (ii) ions, given the atomic number and ionic charge, limited to s- and p-blocks up to $Z = 36$.		
Future Learning (Topic) Y12 4.1.3 Alkenes Y13 5.3.1 Transition elements		
How will knowledge and skills be taught? (Implementation)	How will your understanding be assessed & recorded (Impact)	
<i>Practical work</i> Creating p subshell from blown up balloons <i>Written</i> Link to previous GCSE model of electron structure Explain orbitals, subshells, shells Model how to write electron structures Explain order of filling orbitals Electron arrangement of ions – order of losing electrons	<ul style="list-style-type: none"> - Practise questions and feedback given - 1 x standard homework (Grade given. Written feedback.) 	
How can parents help at home?		
Look at the topic specific resources on the VLE Use appropriate websites: MachemGuy, Allery Chemistry, Chemistry World – by Royal Society of Chemistry, ChemGuide. Take an interest! Ask your children what they have learnt and be curious about their learning.		
Helpful further reading/discussion		
Reading Chapter 5 of A level chemistry for OCR	Vocabulary Lists <i>Electron structure</i> <i>Orbitals</i> <i>Subshells</i> <i>Shells</i> <i>Principle quantum number</i>	Careers Links Analytical chemist Chemical engineer Clinical biochemist Forensic scientist Pharmacologist Process chemist

		Quality control analyst Research scientist Science writer Site chemist Teacher or lecturer Degrees; Chemistry Biochemistry Biomedical science Biological sciences Medicine Research chemist Veterinary medicine
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