

Year 9: Chemical World- Inside the Atom

	Check	Date
Revise assumed knowledge: SC4-16CW describes the observed properties and behaviour of matter, using scientific models and theories about the motion and arrangement of particles	<input type="checkbox"/>	
SC4-17CW explains how scientific understanding of, and discoveries about the properties of elements, compounds and mixtures relate to their uses in everyday life	<input type="checkbox"/>	
CW1 Scientific understanding changes and is refined over time through a process of review by the scientific community.		
DEVELOPMENT OF THE ATOMIC MODEL		
5CW1a. identify that all matter is made of atoms which are composed of protons, neutrons and electrons (ACSSU177)	<input type="checkbox"/>	
Define the terms matter, atom, protons, neutron, electrons	<input type="checkbox"/>	
Recall that matter is anything that has mass and takes up space (volume)	<input type="checkbox"/>	
Identify that matter is made up of atoms	<input type="checkbox"/>	
5CW1c. outline historical developments of the atomic theory to demonstrate how models and theories have been contested and refined over time through a process of review by the scientific community	<input type="checkbox"/>	
Outline historical developments of the atomic theory. Include the contributions of: Democritus, Dalton, Thomson, Rutherford, Chadwick, Bohr	<input type="checkbox"/>	
With specific reference to the atomic theory describe how theories are contested and refined over time through a process of review by the scientific community	<input type="checkbox"/>	
Describe Rutherford's gold foil experiment and its implications for the structure of the atom	<input type="checkbox"/>	
CODE: 9CW1 First-Hand investigation: Modelling Rutherford's experiment (Oxford pg11)	<input type="checkbox"/>	
Describe Chadwick's contribution to the atomic theory	<input type="checkbox"/>	
Describe Bohr's contribution to the atomic theory	<input type="checkbox"/>	
Construct a basic model of an atom	<input type="checkbox"/>	
LITERACY SET 1: COSMOS ARTICLE		
Assessment: Oxford online test- Development of the atomic model Students to achieve 100% in Support and Consolidate OR Consolidate and Extend	<input type="checkbox"/>	
SUBATOMIC PARTICLES		
5CW1b. describe the structure of atoms in terms of the nucleus, protons, neutrons and electrons	<input type="checkbox"/>	
Recall the terms nucleus, protons, neutrons and electrons	<input type="checkbox"/>	
Describe the <u>structure</u> of an atom, the <u>location</u> of the subatomic particles and their charge	<input type="checkbox"/>	
Define the terms atomic number and mass number	<input type="checkbox"/>	
Calculate the numbers of protons, neutrons and electrons in an atom given its mass and atomic numbers	<input type="checkbox"/>	

5CWadd1 use models to describe the arrangement of electrons in the energy levels of common elements	<input type="checkbox"/>	
Draw a range of diagrams of atoms showing where you would find the protons, neutrons and electrons.		
Construct an electron shell diagram for elements in the periodic table with an atomic number up to 20	<input type="checkbox"/>	
Outline how emission spectrums provide evidence for electron shells	<input type="checkbox"/>	
CODE: 9CW2 First-Hand investigation: Flame tests (Oxford pg21)	<input type="checkbox"/>	
LITERACY SET 2: MIXED ACTIVITIES	<input type="checkbox"/>	
Assessment: Oxford online test- Subatomic particles Students to achieve 100% in Support and Consolidate OR Consolidate and Extend	<input type="checkbox"/>	
RADIOACTIVITY		
5CW1d. identify that natural radioactivity arises from the decay of nuclei in atoms, releasing particles and energy (ACSSU177)	<input type="checkbox"/>	
Recall that not all atoms are stable	<input type="checkbox"/>	
Define the term isotopes	<input type="checkbox"/>	
Identify examples of common isotopes (Carbon, Uranium etc.)	<input type="checkbox"/>	
Define radioactivity	<input type="checkbox"/>	
Describe the three types of radiation that can be emitted from unstable atoms	<input type="checkbox"/>	
NUMERACY AND SKILLS SET	<input type="checkbox"/>	
CODE 9CW3 First-Hand investigation: Modelling Radioactive decay M&M lollie model: Fixed number in cup (eg 100). Pour out. Only M's up are removed. Place others back in cup. Keep repeating until none left. Students to predict number 'decaying' each time. Record numbers. Graph results. (Oxford pg29)	<input type="checkbox"/>	
5CW1e. evaluate the benefits and problems associated with medical and industrial uses of nuclear energy	<input type="checkbox"/>	
Case study: Carbon dating. Shroud of Turin. Fact or fiction	<input type="checkbox"/>	
Case study: Carbon dating. Aboriginal artefacts	<input type="checkbox"/>	
Describe the use of radiation in medicine	<input type="checkbox"/>	
Evaluate the advantages and disadvantages of the use of radiation in medicine	<input type="checkbox"/>	
Describe the use of radiation in industry (nuclear power)	<input type="checkbox"/>	
Evaluate the advantages and disadvantages of the use of nuclear power	<input type="checkbox"/>	
5CWadd2 research the development of ideas about the nature of radioactivity 🎓	<input type="checkbox"/>	
Research task: <u>Research</u> the development of ideas about the nature of radioactivity 🎓. Include key scientists, their research and key ideas	<input type="checkbox"/>	
Assessment: Oxford online test- Radioactivity Students to achieve 100% in Support and Consolidate OR Consolidate and Extend	<input type="checkbox"/>	
Assessment: Atoms Chapter Test	<input type="checkbox"/>	
Comments and Suggested improvements		

Name:

Signature:

Date: