



SUBJECT	Science: Chemistry	YEAR	10
Why do we study Science? We study Science so that we can understand the physical and natural world around us and so that we can make the world a better place by working and thinking like a scientist.			
What you will learn this year	What you have learned before	Where you can read more	
The Periodic Table & Atomic Structure			
Atoms of different elements have different internal structures. How our periodic table was developed. How the position of elements relates to atomic structure and their properties (reactivity, melting point etc).	All substances are made of atoms and that each type of element is made from "different" atoms. There are 100+ different elements arranged in the periodic table. The reactivity series compares reactivity of elements.	Book: A Kids' Guide to the Periodic Table: Everything You Need to Know about the Elements - by Edward P. Zovinka & Rose A. Clark	
Chemical Bonding			
The different types of bonding (Ionic, covalent, giant covalent and metallic) How type of bonding links to physical properties.	There are forces of attraction between particles which vary in strength for solids liquids and gasses. Mass is conserved during chemical reactions when bonds change.	Book: <i>Chemistry for Breakfast: The Amazing Science of Everyday Life</i> , by Dr. Mai Thi Nguyen-Kim	
Quantitative Chemistry			
What moles are and how to calculate the number of moles and concentration. Chemical calculations using Relative formula mass including % mass and moles. Use of Mole Ratios to predict reaction masses.	How to use the periodic table to determine the mass and atomic structure of elements.	Book: <i>Chemistry for Breakfast: The Amazing Science of Everyday Life</i> , by Dr. Mai Thi Nguyen-Kim	
Chemical Changes			
Linking the reactivity series to different methods for extracting metals (displacement, smelting, electrolysis) Reactions of Acids and Alkalis. Electrolysis and half equations to understand chemical separation.	More reactive elements will displace other elements from their compounds depending on where they are in the reactivity series. The strength of Acids and Alkalis are measured on the pH scale and they can neutralise each other	Book: <i>The Chemistry Book: Big Ideas Simply Explained</i> , by DK	
Chemical Energy			
Energy profile diagrams for Exothermic and Endothermic chemical reactions. Calculating energy changes using bond energies.	Reactions can be exothermic or endothermic if they absorb or release energy.	Book: <i>The Chemistry Book: Big Ideas Simply Explained</i> , by DK	