

KS4 Learning Overview

Combined Science

Exam Board: AQA

Year 11			
Term	Topics	Extra learning opportunities	
Autumn 1	1. Rate and extent of chemical change 2. Organic Chemistry	Research the effect of temperature on rate of reaction by making lava at home. Write a report on the outcome. Make sure you include pictures of your fun experiment. Use this link: <u>Make an Alka-Seltzer Powered Lava Lamp STEM Activity</u> (sciencebuddies.org)	
		Find out how perfumes are made and what are the key ingredients in them	
Autumn 2	1. Chemical Analysis	Research how chemical analysis is used in forensic science to solve a crime scene	
	2. Chemistry of the atmosphere	Using the link below, monitor the levels of pollutants example sulfur dioxide, particulates on a daily basis for a week, and write down what you notice, for example are there certain days or time of day where pollutants are highest/lowest and why you think that might be <u>Latest measured levels based on data provided by the Environment</u> <u>Agency - Defra, UK.</u>	

Spring 1	 Earth's resources Forces 	 Worldwide one in three people do not have access to safe drinking water. Research how different countries get their water How Different Countries Get Their Water (businessinsider.com) Magazines and journals: Physics World- The Institute of Physics own magazine covering current Physics research and latest developments New Scientist- Reports on current developments from across the world of science BBC Science News- the latest news in science from around the world Science Daily- Website featuring the latest Science developments, with a specific area for Physics research
		Formula 1 Car Development And Production HOW IT'S MADE - YouTubeBBC Documentary - Super Sub USS Submarines Ultimate Structures - National Geographic - YouTubeHow Gravity Shapes The Human Body With Jim Al-Khalili Gravity And Me Spark - YouTubeGravity, size and mass Physics - Wonders of Life - YouTubeBBC iPlayer - Brian Coxs Adventures in Space and Time - Series 1: 3. What Is Gravity?

Spring 2	1. Waves	Magazines and journals:
		Physics World- The Institute of Physics own magazine covering current Physics research and latest developments New Scientist- Reports on current developments from across the world of science BBC Science News- the latest news in science from around the world Science Daily- Website featuring the latest Science developments, with a specific area for Physics research
		Specific Topic resources:
		<u>Electromagnetism: Documentary on How the Electromagnetic Spectrum</u> <u>Works (Full Documentary) - YouTube</u>
		NASA - Tour of the Electromagnetic Spectrum - YouTube
		<u>How to Measure the Speed of Light with Marshmallows - Christmas</u> Lectures with Neil Johnson - YouTube
		Light waves, visible and invisible - Lucianne Walkowicz - YouTube
	2. Magnets and electromagnets	Magazines and journals:
		Physics World- The Institute of Physics own magazine covering current Physics research and latest developments
		New Scientist- Reports on current developments from across the world of science
		BBC Science News- the latest news in science from around the world
		Science Daily- Website featuring the latest Science developments, with a specific area for Physics research
		Specific Topic resources:
		Nikola Tesla Documentary The Forgetten Inventor - YouTube
		Research Nikola Tesla, and how electric cars work.