

Subject: Physics

Exam board: AQA

Year group: Year 9 to 11(new 2015 specification)

Curriculum Map

Year 9 (Sept-July)

Forces I – An introduction to how forces effect the world around us. Including the names of different forces and their effects. Students will also learn how springs work, and how they are used in important applications such as suspension and automated released objects.

Energy –In the Energy topic students learn the different forms energy can take. They will be able to explain how energy transforms from one form to the other and therefore be able to explain how objects such lightbulbs, radios and bungee cords work.

Matter –In the Matter topic students will learn what makes up the objects all around them. They will learn about the states of matter and understand what determines whether or not something is a solid, liquid or gas. They will begin to apply equations in understanding how materials can change from one form to the other.

Year 10(Sept-July)

Forces II – In forces II students expand upon their work in Forces I. They will study situations in which multiple forces act upon an object and apply this idea to situations such as sky diving, accelerating objects and vehicle speed limits. By the end of the topic students will be able to accurately predict, using equations, the behaviour of an object in many different situations.

Electricity I- In this topic students will learn how to build a basic circuit. They will look at applications such as Christmas lights and buzzers. Students will learn how to wire a plug and how to stay safe when using electricity.

Waves – Students will learn how energy is transferred from one place to another in many different situations. How light travels to the eye will be studied, including how eye glasses and telescopes work. The causes of earthquakes will be studied, as well as how sound waves are used in fish finding (sonar).

Space (Triple Science only) – In this topic students will understand how the universe has evolved since the big bang. The different structures of the universe will be analysed, including galaxies and solar systems. Finally, students will learn how stars change over time, from large clouds of gas to red giants.

Year 11(Sept-May)

Forces III This final covering of forces includes more complicated concepts, such as momentum and work. By the end of this topic students will be able to calculate how long it takes for a car to come to a stop, how high a roller coaster can go and how quickly things will fall. This topic also lays the foundations for students who will go on to study physics in more depth.

Electricity II-In electricity II students will learn to build more complex circuits. These circuits include thermistors which are used to control the temperature in homes and swimming pools and LDR's which help determine when street lights come on. They will also apply equations to understand the relationships between voltage, current and resistance.

Magnetism – Students will learn how magnets interact with each other. They will also learn how magnets can be switched on using the concept of electromagnetism and the uses for this.

Atomic – Students will learn how radiation is dangerous, but also how it is used. Students will understand the different uses of radiation and the considerations that have to be made before radiation is used. Further, students will apply equations to represent the nuclear decay that leads to radiation.

Exam Board, Qualification and Specification Code:

AQA

Combined Science (8464)

Physics only (8463)

Useful Websites and Resources:

Revision World - <https://revisionworld.com/gcse-revision>

CGP books - https://www.cgpbooks.co.uk/interactive_gcse_science

<http://www.aqa.org.uk/subjects/science/gcse/physics-8463> This website has a summary of what students need to know for their GCSE Physics studies across all years.

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