

YEAR 10 PHYSICS

Overall Intent:

- Maintain curiosity through exploring the ten Big Ideas of Science
- Acquire the full range of skills to learn to apply knowledge, critique information and actively solve problems
- Have a science education to progress their understanding of the issues that shape their lives during and beyond their school years

In Year 10, students study 3 hours per fortnight of the Physics aspect of AQA GCSE Trilogy Combined Science worth 2 GCSE qualifications or 5 hours of AQA GCSE Physics (a single GCSE but done in combination with the single GCSEs of Chemistry and Biology). They continue to explore each of the ten Big Ideas of Science, focussing on the four Big Ideas in Physics. These centre around energy and electricity where they build upon previous learning and expand their understanding of each idea. Students are assessed throughout the topics using Demonstrate and Connect tasks. End of topic assessments focus on their ability to communicate their knowledge and understand key scientific concepts. Homework will be issued at least once per topic and may comprise extended research or completing a skills grid following a practical investigation. Practical work is a key part of science and as well as completing numerous practical activities students will also be required to complete a series of required practicals, where they consolidate scientific concepts, develop transferable investigative skills and acquire a range of practical skills.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic/area of study	Recap of energy stores and calculations Electricity - Circuits	Domestic electricity Energy Transfers	Particle model of matter	Atomic Structure	Forces	
Key learning aims – knowledge and skills	Students study energy transfers between stores and can quantify these changes. They build series and parallel circuits, measure and predict current and potential difference and use these to calculate resistance using Ohm's law.	Students study direct and alternating current and explain safety features of domestic electricity use and supply. They can quantify electrical energy transfers using equations for power and energy.	Students use the particle model to describe change of state, motion of gases and calculate density from experimental work. They can describe, investigate and calculate specific heat capacity and specific latent heat of a range of materials.	In content common with chemistry students consolidate knowledge of atomic structure and how scientific progress is made through models based upon evidence. This knowledge is taken further in physics as students look at radioactive decay of atoms and can categorise the 3 types of radiation, link properties to dangers and use and write nuclear equations.	Students start paper 2 content by consolidating KS3 knowledge of contact and non-contact forces before adding a quantitative dimension to their studies by investigating and calculating work done, energy transfer and elasticity. They then investigate and calculate how forces cause movement in a variety of situations.	
Assessment	End of topic tests	AP1 exam	End of topic tests	AP2 exam		End of year exam (AP3)

