Richmond School & Sixth Form College
Being the best we can be

Year 9 Physics

We begin teaching the GCSE Physics course which builds on knowledge and understanding of Science in Year 7 and 8. Unit P1 builds on the Key Stage 3 topic 'energy' by deepening understanding of energy stores and pathways, energy equations and energy resources. P3 builds on the Key Stage 3 'matter' topic by developing understanding of solids, liquids and gases, and gas pressure. It goes further in developing knowledge of specific latent heat and links back into P1 to combine specific heat capacity with specific latent heat. P8 builds on the Key Stage 3 topics 'waves' by deepening understanding of frequency and wavelength by introducing the term red-shift, and from 'Earth' by looking at the position of the Earth in the solar system, as well as a more complex understanding of Cosmic Microwave Background Radiation (CMBR).
Investigative skills are developed by a number of required practical activities. There are also other practical activities that enrich the learning, as well as practical demonstrations that do the same.

Methods of deepening and securing knowledge:	
Spaced practice	Nearly all topics are visited on multiple occasions throughout the three-year GCSE Physics provision. This is sometimes to re-visit topics in preparation for assessments. On other occasions it is to prepare for the learning of deeper and more challenging learning within the same concept area.
Retrieval practice	All lessons have retrieval practice in them. This is usually as a starter activity, but is also found in the body of the lesson.
Elaboration	P1 and P3 link together SHC and SLH, so P3 elaborates on the content covered in P1.
Interleaving	Retrieval practice includes interleaved questions from previous topics, making connections between topics where possible. Many ideas from Key Stage 3 are revisited during Year 9 lessons.
Concrete examples	Every equation is taught with concrete examples to model how to approach calculations. Definitions are required of tier 3 terms e.g. students are given a concrete example of the definition of specific heat capacity.
Dual coding	All required practicals have a dual coding instruction sheet. Duel coding is regularly used in physics to explain abstract ideas, and for modelling.

	Autumn term 1	Autumn term 2	Spring term 1	Spring term 2	Summer term 1	Summer term 2
Topic(s)	**Unit P1 Energy** - Energy changes in a system and the ways energy is stored before and after such changes, conservation and dissipation of energy		**Unit P1 Energy** National and global energy resources **Unit P3 Particle Model of Matter** Changes of state and the particle model, internal	**Unit P3 Particle Model of Matter (Continued)** Changes of state and the particle model, internal energy and energy transfers	**Unit P3 Particle Model of Matter** Particle model and pressure **Unit P8 Space Physics** - Solar system; stability of orbital motions; satellites, red-shift	

			energy and energy transfers			
Assessment	Aiming High 1 test – taken in the first 2 weeks of year 9 (baseline assessment) Covers KS3 content and aids with retrieval of KS3 knowledge for year 9.					Pre-public exam – covering all topics taught up to that point in Year 9.

Homework:
Homework is a core part of learning and serves to support the learning in class, enrich the student experience and develop knowledge and skills. There are two types of homework set in Physics e.g. Educake revision (an online platform that support retrieval of knowledge) and past paper questions that develop exam literacy. Preparing for assessment is an essential part of each topic as each assessment allows teachers and students to see their progress. It is crucial that revision is completed so students can demonstrate what they know.