

Year 11 Physics

The GCSE Physics course continues to build on knowledge and understanding of Science from Years 9 and 10 as well as some topics originally studied in key stage 3. P5 builds on Key Stage 3 idea of 'forces', which also expands upon P3, linking gas pressure and atmospheric pressure. P5 is also taught in Year 11 to align with GCSE maths in which students are taught Pythagoras and vectors in Year 10. This allows us to build on this knowledge in P5. P7 builds on the Key Stage 3 topic 'electromagnets' and further develops P1 through the understanding of how transformers work, rather than just the application of transformers.

2020 2021 only – P8 builds on P6 and develops the idea of waves through the introduction of red-shift.

Investigative skills are developed by a number of required practical activities. There are also other practical activities that enrich 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 3 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 topics 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	P5 elaborates on P1 as it links back to energy. It also elaborates on P3 as it links back to gas pressure. P7 elaborates on P1 and P2 through the National Grid and power stations.
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 11 lessons.
Concrete examples	Every equation is taught with concrete examples to model for students how to approach calculations. Definitions are required of Tier 3 vocabulary e.g. students are given a concrete example of the definition of Newton's Law, etc.
Dual coding	All required practicals have a dual coding instruction sheet. Dual 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)	P5 Forces - Forces and their interactions, work done and energy transfer, forces and elasticity, moments levers and gears, pressure and pressure differences in fluids, describing motion along a line, forces acceleration		P5 Forces (continued) - Newton's laws of motion, forces and braking, momentum	P7 Magnetism and electromagnetism - the motor effect, induced potential transformers and the National Grid	Revision	

	and Newton's laws of motion, forces and braking, momentum		P7 Magnetism and electromagnetism - Permanent and induced magnetism, magnetic forces and fields	P8 Space physics (Yr 11 2020 and 2021 only) - Solar system; stability of orbital motions; satellites, red-shift		
Assessment	November PPE to cover a full past paper on P1-P4 units		February PPE to cover a second past paper on P5 and B6 units. (From 2022 this will also include P8)		Full public exams in May and June	

Homework:

Homework is a core part of learning and serves to support learning in class, enrich student experience and develop knowledge and skills. There are 2 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 show what they know.