



PHYSICS KS4 CURRICULUM AND ASSESSMENT MILESTONES

KS3 review	Lessons are planned to revisit key topic areas from across Y7,8 and 9, including energy, electricity and forces. These include key ideas that need to be built upon through KS4 and also to address common misconceptions.
P1: Energy	Pupils build on knowledge from the KS3 national curriculum but expand into greater depth. Topics like energy stores, transfers, efficiency and energy resources are revisited and new topics are introduced like specific heat capacity. There is also a deeper focus on calculating values associated with energy.
P2: Electricity	Pupils extend their knowledge of circuits from KS3. Previous work on topics like series and parallel circuits and modelling electricity is expanded whilst incorporating more complex ideas like IV curves and special components. There is also increases focus on calculating values associated with circuits.
P3: Particle Model of Matter	Pupils build upon ideas about states of matter and changes of state developed in KS3. Concepts like specific latent heat and internal energy are introduced. This is all tackled using a simple model of assuming all matter is comprised of basic particles.
P4: Atomic Structure	This topic is mostly new content not covered in KS3. Whilst there is a short section at the start which overlaps with chemistry ideas about the structure of the atom and the history of its development, this topic then covers the new ideas of nuclear physics. It explores nuclear radiation, radioactivity and half-life with nuclear fusion and fission being taught to the triple science pupils as well. It also evaluates the risks and applications of using nuclear radiation in everyday life.
P7: Magnetism	This topic is taught out of sequence in Y10 as it has been identified as a topic that pupils can find challenging. It includes abstract new ideas. By teaching it earlier, this allows for more time for retrieval practise and to revisit the topic before it is fully reviewed in Y11. This is a relatively short topic for foundation trilogy pupils, covering magnetism fundamentals, finding the shape of magnetic fields and building electromagnets. For higher pupils, it also includes the concept of the motor effect. For those studying separate sciences, it goes into more depth about applications of the motor effect and the generator effect.
P5: Forces	This large topic is taught across the end of Y10 and into Y11. This is a big topic covering forces, how they affect motion and how we can represent this information using diagrams and graphs. It also includes many equations used to calculate values relating to forces. This topic has been introduced in KS3 and is extended in KS4. In the first half, taught in Y10, pupils revisit types of forces and the idea of resultant force and its effects on motion. They also extend learning about weight and elasticity.
P5: Forces (continued from Y10)	Following a recap of Y10 forces, pupils continue through this topic. They revisit how motion can be represented using graphs, learning new skills to analyse them. They focus on ideas of acceleration, terminal velocity, Newton's laws and stopping distance amongst others during the rest of this topic.
P6: Waves	Ideas from KS3 are extended in this topic. Transvers and longitudinal waves, properties of waves and electromagnetic waves are revisited and learnt in more depth. They also study the applications and risks of different waves in more detail. Calculations involving properties of waves are also incorporated into this topic. Pupils on the separate science course extend this topic by looking into topic areas such as the reflection and refraction of light and how lenses work, the concept of colour and seismic waves, sound and ultrasound.
P8: Space (Triple Physics only)	Building on the foundations from KS3, pupils explore key ideas about the universe. This topic covers knowledge about space and the solar system in more detail but has the big ideas of stars and the origins of the universe as its key elements.

ASSESSMENT MILESTONES

Throughout the lessons, pupils progress is assessed using retrieval grids at the start of each lesson. Previous topics are revisited and TLAC's show call is used on pupil's books to provide live feedback under the visualiser which all pupils use to mark and improve tasks based on prior learning.

Throughout each lesson, learning is assessed using TLAC cold calling and show me amongst other assessment for learning techniques to check understanding and look for areas that need to be revisited and retaught. At the end of lessons, exam questions are used to practise exam technique and to assess progress for that lesson. These are marked and improved during the end of the lesson, again providing live feedback to the pupils.

Following the completion of each of the above topics, pupils are assessed using formal AQA assessments. Results are analysed and the following lesson are dedicated to PRIDE, where misconceptions and common errors are revisited and improved upon, as per the pupil needs.