Astley Community High School

Physics Curriculum Overview

What are the aims of the Physics curriculum?
Our Physics curriculum provides students with an exciting insight into the world of physics. This allows students to develop their understanding of how physics plays a key role in a range of processes. Working from a scale as large as the vast expanse of the Universe to looking at the constituents of the atom. As our students progress through to KS4 we focus further on a range of topics that explain events and processes over this range of scale linking them to everyday events and technologies. Allowing students to practically apply and develop their knowledge. Key Stage 5 aims to deepen and build on the knowledge and understanding of ideas developed in GCSE Physics. For some students it will be the foundations for more advanced studies and the foundations for careers in STEM, for others it will provide an understanding of the natural world in an increasingly technological society.

How does the Physics curriculum support the Seaton Valley Federation's curriculum vision and intent?
Physics provides interesting and varied knowledge and skills that challenge students, it also provides opportunities for engagement and wonder in understanding all the constituents of the Universe. Students use their literacy and numeracy skills to solve problems and conduct experiments throughout the curriculum. Physics also allows our students to become independent learners through application of this knowledge and skill in a variety of areas. Encouraging high level independent problem solving to develop as well as encouraging discussions around the ethics and applications of science within society.

How is the Physics curriculum sequenced to support pupils to make effective progress?
The fundamental skills of working scientifically are woven and developed throughout the physics curriculum. At key stage 3 students develop ideas about how energy and forces impact everyday life. Linking this into how magnetic materials interact as well as how charge particles behave. They also investigate density and states of matter These foundations are then refined and developed during key stage 4 as our physics students recap and expand on work they have done during lower school. These include energy and forces, particle model of matter, atomic structure, electricity and waves. Students moving into KS5 build on the knowledge they gained in the GCSE course. These areas of study are expanded again throughout the 2 year A Level course .In year 12 the students delve deeper into a number of topics, electricity, forces, waves, radiation and quantum phenomena which further increases their understanding of how physics impacts all areas. Many elements of which are required for understanding and progression through topics in year 13.

How is assessment used to aid progress?
In the first instance students across KS3 and KS4 are regularly assessed through question and answer within lessons with oral feedback given. Peer and self assessments are also regularly used to consolidate and confirm learning and understanding. Regular formal assessment is carried out throughout the curriculum, to monitor students progress and performance; this takes the format of both mini assessments, tracking and topic assessments and formal mock exams during KS4. When moving through to KS5 formative and summative assessment is carried out throughout the course, to monitor students progress and performance. In year 13 they then undertake a number of P1, P2 and P3 past papers that are conducted under exam conditions, with grades and feedback given each time. Mock exams sat at the end of year 12 and then again in year 13. With final assessments taking place after Easter in the summer term.

How is staffing organised within the subject?
KS3 & KS4 PHYSICS TEACHERS Lead teacher in physics - Mr. S. Henderson. Physics teacher - Miss Airey, Mr P. Suetterlin Other members of the science department depending on timetable constraints A-LEVEL PHYSICS TEACHERS Lead teacher in physics - Mr. S. Henderson. Physics teacher - Mr. P. Suetterlin

Examined courses – exam board and course code (exams and controlled assessment elements)
AQA GCSE Trilogy Physics - 8464 AQA GCSE Physics - 8463 AQA AS Physics - 7407 Physics AQA A Level Physics - 7408A Physics (Astrophysics Option)