



Physics Curriculum Overview

Physics is a mixture of highly conceptual thinking and very practical applications. Students have the opportunity to be able to think about abstract ideas such as fields, then to look at the world around them and see how those ideas can be applied to advance science, engineering and understanding.

Learning to think like a physicist will help students develop the skills to get to the root of any problem and draw connections that are not obvious to others. Physics won't give all the answers, but it will teach students how to ask the right questions.

If you have an enquiring mind, an ability to solve problems in a creative way and a desire to find out more about the Universe we inhabit, then Physics would be an excellent choice for you.

KS3 - In Year 8 we aim to build on the scientific skills and attitude taught in the Year 7 Science course but also introduce all of the key Physics concepts that students will need such as motion, forces, electricity, fields, moments and pressure. These topics are taught using as much practical work as possible, and delivered promoting reflection and discussion of the main concepts. At this early stage we do not cover topics in great depth but just focus on building conceptual models which will provide a strong framework later on to attach facts and contexts that students will visit in Years 9, 10 and 11.

GCSE - In Year 9 we start to follow the AQA GCSE Physics Trilogy course. With core concepts already in place, we start to develop the students' mathematical skills by introducing simple equations such as power and work. It is important at this stage that students learn about energy which is one of science's 'big ideas'. This leads to energy production and world energy resources. We also look at waves, lenses and then red shift in Year 9. In Year 10 we introduce tougher equations that require more skill to rearrange and alongside these, we tackle core GCSE topics such as motion, forces and electricity. Year 11 contains mostly synoptic topics where students can review learning from all the previous years and solve problems that bring all of those previous topics together. For example, within the topic of energy changes there might be a transfer from electrical energy to kinetic energy. Radioactivity is also covered in Year 11 and this ties in to their previous learning in Chemistry. Also at the end of Year 11 students tackle the hardest, most abstract concepts and these are pressure and electromagnetism.

A-level: In Year 12 and 13 students follow the AQA GCE Physics course with an Astrophysics option. Topics covered in the first year include Mechanics, Quantum Physics, Particle physics, Waves, Electricity, Capacitors and Materials. In the second year students tackle the most difficult topics. The topics are the most abstract with some mathematical demand: Further Mechanics, Gravitational and Electric Fields, Magnetism, Thermodynamics, Nuclear and Astrophysics.

KS3 Physics Curriculum

	Year 8	Year 9
Autumn Term 1	Forces Motion	Energy
Autumn Term 2	Moments	Waves
Spring Term 1	Pressure	Lenses
Spring Term 2	Current	Red shift
Summer Term 1	Fields	Colour
Summer Term 2	Proportionality Space	Projects

KS4 Physics Curriculum

	Year 10	Year 11
Autumn Term 1	Static electricity	Moments Models of the atom
Autumn Term 2	Circuits	Radioactivity Fission
Spring Term 1	Motion	Fusion Forces
Spring Term 2	Forces	Work energy and power Particle model of matter
Summer Term 1	Forces	Pressure electromagnetism
Summer Term 2	Projects	

KS5 Physics Curriculum

	Year 12	Year 13
Autumn Term 1	TEACHER 1 Measurement Mechanics TEACHER 2 Particles Quantum	TEACHER 1 Gravitational Fields Electric Fields TEACHER 2 Further mechanics Thermal Physics
Autumn Term 2	TEACHER 1 Mechanics TEACHER 2 Particles Quantum	TEACHER 1 Electric Fields Magnetic Fields TEACHER 2 Further mechanics Thermal Physics
Spring Term 1	TEACHER 1 Electricity TEACHER 2 Waves	TEACHER 1 Astrophysics TEACHER 2 Nuclear Physics
Spring Term 2	TEACHER 1 Electricity Capacitors TEACHER 2 Waves Materials	TEACHER 1 Astrophysics TEACHER 2 Nuclear Physics
Summer Term 1	Revision	Revision
Summer Term 2	Exam feedback and review. Consolidation of identified knowledge gaps. Teacher directed and supported project work and/or progressing to learn new material. 6th Form Progression Programme.	