KS4 Curriculum handbook subject page

Subject: GCSE PHYSICS

Syllabus: Pearson Edexcel GCSE (9-1) in Physics (1PH0)

What will I learn?

Physics is the branch of science concerned with the nature and properties of matter and energy. This includes mechanics, heat, light and other radiation, sound, electricity, magnetism, and the structure of atoms. This course aims to develop the following key ideas:

- the use of models, as in the particle model of matter or the wave models of light and of sound
- the concept of cause and effect in explaining such links as those between force and acceleration, or between changes in atomic nuclei and radioactive emissions
- the phenomena of 'action at a distance' and the related concept of the field as the key to analysing electrical, magnetic and gravitational effects
- that differences, for example between pressures or temperatures or electrical potentials, are the drivers of change
- that proportionality, for example between weight and mass of an object or between force and extension in a spring, is an important aspect of many models in science
- that physical laws and models are expressed in mathematical form

How will I be assessed?

There are two exams at the end of the two years for GCSE Physics, both of which are 1 hour and 45 minutes long. At least 15% of the marks for GCSE Physics are based on what you learned whilst completing the eight required practicals which are a key part of this course.

How will this prepare me for my next steps?

GCSE Physics will provide the foundations of knowledge needed to embark upon further study and careers in the Physical Sciences, as well as those in the fields of Engineering, Medical Physics, Materials Science and Manufacturing. Furthermore, the course will develop analytical and problem solving skills which are essential in approaching a wide range of A Level, Vocational and Higher Education courses.

Contribution to UTC/Studio aims

Studying Physics equips students with the knowledge and skills essential to understanding and applying the basic principles that govern the world around us. Through this course students develop the critical thought processes needed to understand and challenge complex ideas, and apply them to contexts that are both familiar and abstract. Our delivery of Key Stage 4 Physics aims to provide a unique educational experience that delivers both theory and practice to the highest possible standards. By combining scientific skills with rigorous theoretical study, we aim to allow students to exceed expectations in lessons that are innovative, stimulating and exciting, leading them to successful careers and life experiences.

Careers/job ideas

According to UCAS, Physics and the problem solving skills it develops is useful in many types of career including:

- construction
- engineering and manufacturing
- medicine and nursing
- medical technology
- research.
- agriculture
- environmental sciences,

In order to continue into a career linked to Physics, there are a range of different course or apprenticeship options. These include:

Academic subjects such as A Levels, that are linked to Physics, such as:

- Physics
- Maths/Further Maths
- Engineering
- Chemistry
- Biology
- Computing
- Geography/Geology

Vocational qualifications (such as BTECs, NVQ/SVQs and Diplomas):

- construction and built environment
- electrical engineering
- mechanical engineering
- applied science
- computer science
- engineering
- information technology

Apprenticeships that link to an interest in physics such as:

- construction, planning and built environment, e.g. civil engineering technician
- engineering and manufacturing technologies, e.g. installation electrician
- information and communication technology, e.g. software developer, network engineer
- arts, media and publishing, e.g. sound technician
- life sciences, e.g. laboratory technician, science technician