

SUPPORTING CAREERS EDUCATION IN SCIENCE

Y7 Units	Career Focus
Introduction to Science	This unit introduces the importance of health and safety and COSHH regulations in industry.
Particles and Solutions	Pupils will carry out a chromatography practical to solve a forensic puzzle. Distillation is demonstrated and the use of this method in different industries is discussed, for example in separating crude oil to make it more useful.
Forces	Pupils learn how balanced and unbalanced forces affect the motion of an object. The role of design engineers in researching and designing racing cars and other fast moving /race vehicles is discussed.
Y8 Units	Career Focus
Light and Sound	Use of light in stage management by using different coloured filters to change the colour of light is investigated. The role of environmental health linked to sound is also studied.
Microbes	Careers in microbiology and medicine.
Digestion and respiration	Pupils learn about diet and nutrition and how the role of a nutritionist is to promote good health and prevent disease in individuals.
Y9 Units	Career Focus
Motion and pressure	Moment calculations, pressure calculations and their use in the engineering world; use of cranes, building of dams as examples.
Inheritance, health, and muscles	Farming and the use of selective breeding and its implications.
Periodicity and chemical reactions	Pupils will learn about different chemical reactions and how they are used in the world. For example, the Thermite reaction and its use in fixing railway lines.
Y10 GCSE	Career Focus
Quantitative Chemistry	The role of analytical chemists in analysing samples to keep water and sewage systems safe and operational.
Obtaining and using metals	The importance of chemistry to solve the future of sustainability, as everything is made from chemicals. The role of a sustainability manager and their work on advising companies on how to be more sustainable.
Evolution, natural selection and genetic modification	Archaeology, as an important career to understand the past and how living things have evolved.

	The role of a genetic engineer and how they use technology to modify an organism's genes, in order to change the genetic makeup of cells.
Genetics	The role of a geneticist, a genetic councillor or a research geneticist and how their research on genetics affects human health, medicinal treatments and agricultural improvements. DNA analyst working in the health service or for the police in forensics.
Radiation	Nuclear industry has many opportunities for working in many roles including engineering.
Energy	More jobs will become available as we transition to more renewable forms of electricity generation. This topic looks in detail at the different ways we can produce electricity and allows pupils to make informed decisions regarding best way to generate electricity.
Y11 GCSE	Career Focus
Organic chemistry	The role of a fine fragrance evaluator and flavour chemist is examined when studying organic compounds, like esters.
Homeostasis	As part of this unit diabetes and other health conditions related to problems with the body's hormones are studied. Endocrinologists can diagnose and treat hormone problems and the complications that arise from them. This unit also covers IVF and fertility treatment so the role of an embryologist is looked at.
Ecology	Climate change is currently a major world issue; this topic (along with other topics covered in Chemistry and Physics) signposts the pupils to the wide range of jobs that are linked to climate change. For example, working with industries to decarbonise them, sustainability manager, environmental modeller, ecological adviser.
Electricity and magnetism	Many jobs in the power generation industries including the national grid. More jobs will become available as we transition to more renewable forms of electricity generation. This topic focusses on how electricity is generated and distributed and is highly relevant to many industries where a knowledge of electrical engineering is a prerequisite.

To inspire pupils to want to pursue a STEM related career and enhance their science capital, the department offers the following activities/ trips.

Activity/Trip	Career Focus
Year 7 and 8 Science club	To encourage pupils to make links between Maths, Science and Technology. Pupils who join will take part in different projects to raise awareness of innovations and careers within STEM.
Year 8 overnight trip to London to visit the Natural History and Science museums.	Pupils go beyond the curriculum and explore cutting edge science and interesting facts that will hopefully lead to an increased interest in STEM subjects and careers.
Year 9 and 10 Masterclasses at Runshaw college.	Pupils take part in workshops in Physics, Chemistry and Biology and are introduced to Science beyond GCSE level.
Year 10 GCSE Science Live lectures.	Experience of listening to a series of lectures from leading Scientists, who are all working at the cutting edge of their specialisms.