

Applied Science A-Level

The A-Level in Applied Science is a two year course of study. It is an ideal qualification for those students who want a broad background in science, which will allow flexible progression to related subjects in Higher Education (tech or university) as well as a valuable preparation for careers in many areas of science. Examples of possible career paths include environmental work, biochemical sciences, nursing and sports studies. However, you must speak to your teachers and careers advisor to learn more about possible pathways suited to your own interests and also to develop an understanding about what other subjects you might study which would complement this course in helping you achieve your goals.

The fundamental philosophy of the course is that, in order to understand the nature of science, students must actively experience the science environment. This will be achieved through work experience, links with local employers and universities, case studies and research. The course is divided into six units, each of which is outlined on the following page.

Minimum Entry Requirements:

CC - Double Award Science GCSE

Or

C - Biology GCSE (After school Chemistry and Physics 'catch-up' is essential)

Also C – GCSE Mathematics

AS Unit 1: Investigating Science at Work (Yr 13 - Portfolio based assessment)

In this unit you will produce a portfolio of evidence to show you have researched how science is used to provide products and services in different kinds of science based organisations. You will learn about the types of organisation which use science, how science is used in these organisations, how the organisations impact on the local community.

AS Unit 2: Energy Transfer Systems (Yr 13 - Exam based assessment)

This Unit is delivered in two sections. The first is Biology focused and the second is Physics focused. Through the Biology section of the unit you will learn, through study and practical activity such as dissection, about the structure and function of the circulatory and respiratory systems, how these systems can be monitored and investigated and their role in energy transfer in the body. This unit also considers some of the ethical issues relating to monitoring, diagnosis and treatment of circulatory and respiratory illnesses. Through the Physics section of the Unit you will learn how to manipulate a number of energy calculations. You will learn about energy efficiency and heat transfer in the home. You will then investigate the practical usage of the wide range of energy resources available to us for generating electricity.

AS Unit 3: Finding out about Substances (Yr 13 - Portfolio based assessment)

In this unit you will produce a portfolio of evidence to show you have learned how to conduct a range of scientific analytical techniques. Scientists working in analytical laboratories are called analysts. One of the tasks undertaken by analysts is the analysis and identification of chemical and biological substances. This could be, for example, in research for new pharmaceutical products, the quality control of existing products, or in a forensic or pathology laboratory. Your portfolio will be based on four practical investigations which are designed to develop your analytical skills.

AS Unit 7: Planning and Carrying out a Scientific Investigation (Yr 14 - Portfolio based assessment)

In this unit you will produce a portfolio to show you have learned how to plan and conduct a practical investigation and how to evaluate your investigation and present it to a client. Many industries employ scientists who are involved in investigation or research. In this unit you will use the knowledge and skills you have gained in the other units of the course to undertake research and investigative work of your own.

A2 Unit 14: The Healthy Body (Exam based assessment)

In this unit you will learn, through study and practical activity, how to monitor concentrations of oxygen and glucose in the blood, the structure and function of the digestive system, how a healthy diet helps maintain a healthy body and how to monitor levels of cholesterol, vitamins and minerals in the body. This unit is particularly important for those wishing to progress to health care and sporting careers.

A2 Unit 16: Ecology, Conservation and Recycling (Portfolio based assessment)

In this unit you will produce a portfolio to show you have learned, through study and conduction of practical fieldwork, about the type and populations of organisms that live in a habitat and the relationships that exist between organisms within their physical and biological environment. You will also learn about environmental change and damage, recycling and how to manage conservation. Ecology forms the basis of our understanding of agriculture, forestry and fisheries. For present and future generations, knowledge of ecology is necessary to understand, maintain and preserve life on the planet.