Environmental Science A Level

Qualification: Advanced Level Environmental Science

Exam Board: AQA

Subject Leader: Miss Mim Segal

Entry Requirements:

Minimum Entry Requirements:

Students should have GCSE Levels of a 5/5 or above for science, 5 in maths, plus 5 in English and a 5 in geography (if studied)

Why study Environmental Science?

Living in an age with increasing numbers of environmental challenges we need to find real life solutions to ensure the sustainability of our planet. This makes studying environmental science a key part of this process. The course will make you more aware of what is happening to the Earth's environment and the issues we are currently facing. Using real life case studies, you will investigate and conduct experiments researching the best methods to obtain data. Applying biological, chemical, and physical principles to environmental issues and to provide solutions to environmental problems.

What can the study of environmental science lead to?

You can study environmental science degree leading to careers in environmental management, horticulture, minerals surveyor, water quality scientist. You may also work for the environmental agency and DEFRA.

Environmental Science Extras

The Environmental Science Department is dedicated to developing the whole individual, not just in terms of academic attainment but to their interest and enthusiasm for the subject. Students will have opportunity to go on trips to areas of interest and organisations and Universities. We run an after-school session for those students who need extra support or want to extend their knowledge and understanding. We will give students the opportunities to enter competitions giving them opportunities to develop problem solving skills and learn to think more creatively and test their knowledge in new, real world situations.

Course content

The key scientific principles of the subject will be developed throughout the course, using examples to illustrate these whenever appropriate.

Environmental science is a holistic subject with many interconnected systems and processes. A change to one process can affect many other processes over different spatial and temporal scales.

Consideration of environmental issues and the conclusions reached should be based on reliable evidence-based information and quantitative data.

Students will develop an understanding of how human society relies upon natural systems for resources and life support systems.

An understanding of these systems should be used to propose changes in society that would produce sustainable lifestyles.

1. The Living Environment

   Develops students understanding of the interactions of living organisms with each other and their abiotic environment, and how an understanding of this can inform decisions that lead to sustainable human activities. Students must apply their understanding of these interactions in a wide range of contexts throughout this area.

2. The physical environment

   Develops students understanding of how anthropogenic activities are inter-connected with physical processes, to formulate management strategies and plan sustainable activities. Supplies of renewable physical resources may be maintained by the control of activities that may cause over-exploitation and by protecting the processes that aid their production. Supplies of non-renewable physical resources may be extended by controlling exploitation and developing improved technologies to harness them.

3. Energy resources

Develops students understanding of the importance of energy resources in both past and future developments in society should be analysed. The impact of future energy supply problems should be evaluated and how improvements in technology can provide increasing amounts of energy from sustainable sources. Quantitative data will be used to compare and evaluate new and existing technologies.

4. Pollution

Develops students understanding of how the properties of materials and energy forms interact to result in environmental change. Students will apply this knowledge to suggest solutions to minimise current pollution problems and prevent future problems. Students should apply their understanding through a range of different historic and contemporary pollution events.

5. Biological resources

Develops students understanding of the challenge posed by the need to provide food and forest resources for a growing human population without damaging the planet's life support systems. The interaction of the production of biological resources with other areas of the subject should be emphasised, including with conservation of biodiversity, energy resources, pollution and the physical environment.

6. Sustainability

Develops students understanding that sustainability is the key principle and that the focus in all topics will be used to develop a holistic understanding of sustainability and the circular economy. Examples should be taken from throughout the areas of study to gain an understanding of the interconnected nature of environmental problems and solutions to these problems. Students should consider sustainability on local, national and global scales.

7. Research methods

Develops students understanding that research methods include details of the methods used to investigate a wide range of environmental issues. Students experimental and investigative activities, including appropriate risk management, in a range of environmental contexts. They must also know how to use a range of practical equipment and materials safely and correctly.

External Assessment

This qualification is linear. Linear means that students will sit all their exams and submit all their non-exam assessment at the end of the course. The exam assessment is two external exams at the end of the two years, students are expected to draw on knowledge and understanding of the entire course of study to show a deeper understanding of the interconnections between topics.

Paper 1 and 2 both have a 3-hour exam with 120 marks and 50% of the Alevel. Both papers have a mixture of question types such as multiple choice, short answer, and extended writing questions. Students will be expected to draw on knowledge and understanding of the entire course of study to show a deeper understanding of the interconnections between topics. In paper 1 and 2 at least 15% of the marks for A-level Environmental Science qualification will require the assessment of practical skills

Paper 01- The physical environment, energy resources, pollution, research methods.

Paper 02 – the living environment, biological resources, sustainability, research methods.

Non- exam assessment practical activities

Practical skills are assessed on the non- exam assessment part of the course. It is based on **w**orking scientifically tasks that give students the opportunities for practical skills development and independent thinking at the end of each subject content section**.** These include skills related to the methodologies and sampling techniques that students must gain through first-hand experience and skills related to research methods that can be gained through class-based and/or practical activities. Students will submit all their non-exam assessment at the end of the course in May. Non-exam-based assessment has a minimum requirement of 4 days of fieldwork for A-level or 2 days of fieldwork plus 12 laboratory-based. Comberton Sixth Form Environmental Science department run a practical heavy course. Universities have stated that any body wishing to undertake a Scientific Degree must have passed their non-exam assessment.