Biology A-Level

Exam Board: AQA

Why A-Level Biology?

Biology is concerned with understanding the wonders of life, from exploring the complex and diverse relationships within ecosystems to how chemicals create and maintain cells. Investigating life has led to a vast array of discoveries, deepening our insights and leading to opportunities to explore and potentially solve many problems facing our biosphere and humanity.

Thinking and Life Skills you will develop:

- Conveying opinions in a balanced and informed way, using precision in use of language
- Understanding and applying statistical analyses, using them in evaluating data
- Applying accuracy and attention to detail mathematically and in written word
- Developing practical scientific skills involving independent and teamwork
- Using logic and creativity in deduction with the ability to interpret, spot trends, make links, evaluate and predict
- Working to deadlines with the ability to self-manage and motivate
- Communicating in a concise and detailed manner according to scientifically accepted conventions.

Entry requirements:

Minimum grade 6:6 in GCSE Combined Science, or if separate sciences - Biology 6. English 6 and Mathematics 6.

What will you study?

Biology covers a variety of life, populations and environment (which links well with part of the Geography syllabus), The wonders of DNA and genetics and how this impacts on the species and the environment around us, disease, control in cells and organisms (including studying various organ systems such as respiratory, circulatory and nervous), genetics, homeostasis and energy transfer (including a detailed understanding of respiration and photosynthesis).

University degrees that require or often prefer Biology include:

Biology, Human Biology, Biochemistry, Dentistry, Medicine, Veterinary Science, Pharmacology, Nursing and Midwifery, Dietetics, Molecular Biology, Genetics, Environmental Science, Sports Science, Agricultural Science and Anthropology.

Possible careers:

Directly related: Physiologist, cytogeneticist, marine biologist, microbiologist, systems biologist, medical scientist, phlebotomist, environmental health officer, biotechnologist, radiologist, immunologist, biometric consultant and toxicologist.

Further afield: Journalism, pharmaceutical sales, law, computing, accountancy, civil service and analytical research.

'It's the little things that make the difference. My little thing is planting trees'
Wangari Maathai

Chemistry A-Level

Exam Board: AQA

Why A-Level Chemistry?

To gain a fundamental understanding of the processes and phenomena that makes up all materials and the foundations of life itself. Chemistry sits between Physics and Biology, since advances in all three fields are mainly reliant on chemical ideas. Humankind will benefit greatly from innovations in materials with properties tailored to new uses in fields as diverse as construction and medicine.

Thinking and Life Skills you will develop:

- Application of skills to tackle unfamiliar problems
- Relating theory to practical application
- Research and analytical skills
- Critical and evaluative thinking
- Practical dexterity
- Ability to analyse qualitative and quantitative data thoroughly.

What will you study?

Fundamental principles that form the basis of chemistry such as atomic structure, bonding, periodicity and an introduction to organic chemistry. Equilibria, polymers, aromatic chemistry, thermodynamics, energetic chemistry and inorganic chemistry are also included.

University degrees that require or often prefer Chemistry include:

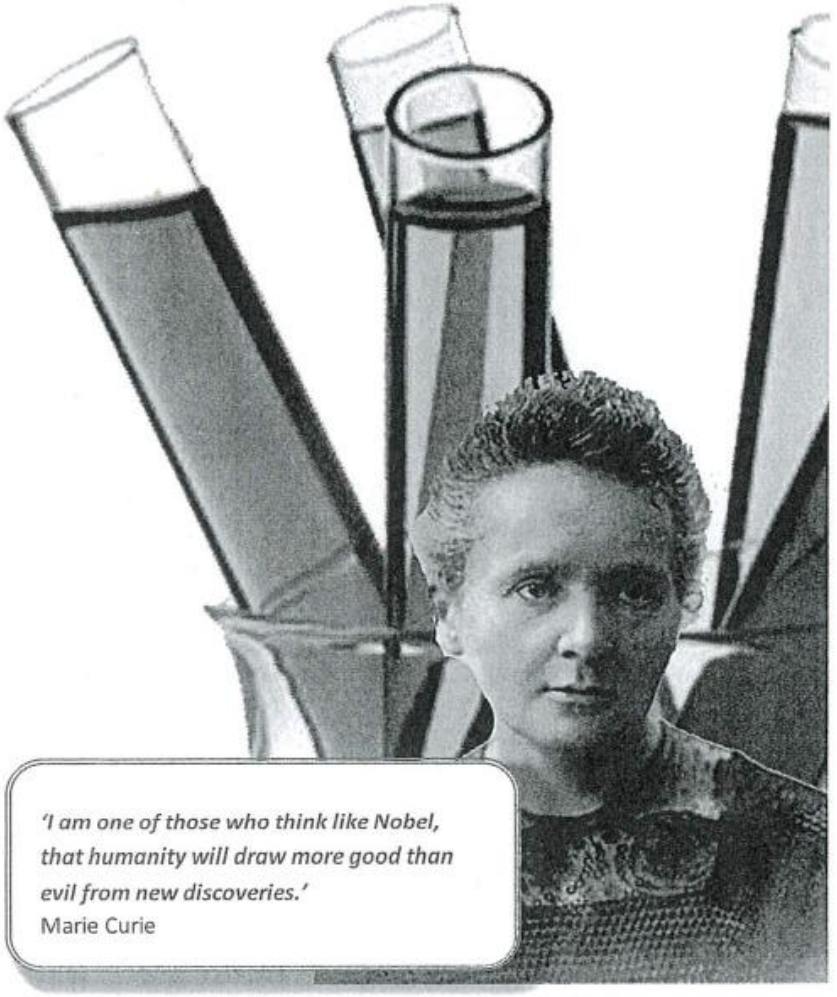
Pure Chemistry, Biochemistry, Dentistry, Medicine, Veterinary science, Environmental Science, Materials Science, Natural Science, Biomedical Science, Pharmacy, Chemical Engineering, Dietetics and Psychology.

Possible careers:

Directly related: Food scientist, pharmaceutical research, cosmetic scientist and doctor.
Further afield: Computer programmer, lawyer, journalist and company management.

Entry requirements:

Minimum grade 6 in all GCSE Chemistry modules. Minimum of grade 6 in English and grade 6 in GCSE Mathematics.



'I am one of those who think like Nobel, that humanity will draw more good than evil from new discoveries.'
Marie Curie

Physics A-Level

Exam Board: AQA

Why A-Level Physics?

Physics is an exploration of rules describing the behaviour of matter and energy on every scale – from the interaction of subatomic particles such as quarks, to the motion of objects, to the evolution of stars, galaxies and the universe. Discoveries and inventions have transformed our lives, fuelling the modern technological revolution. In physics, the sky is certainly not the limit: the potential is limitless!

Thinking and Life Skills you will develop:

- Problem-solving and logical reasoning skills presented in a coherent way
- Proficiency with technical equipment to test ideas and theories, including IT
- Producing reports according to scientific conventions requiring data handling and processing
- Applying knowledge and understanding to areas of investigation
- Researching areas of interest.

Entry requirements:

Minimum grade 6:6 in GCSE Combined Science, or if separate sciences - Physics 6. Grade 7 in GCSE Mathematics due to high maths content and grade 6 in English Language.

What will you study?

Mechanics (Newtonian laws), materials and waves, electrons and photons, particles, quantum phenomena, electricity and astrophysics or engineering physics. Data handling, use of formulae and numerical relationships.

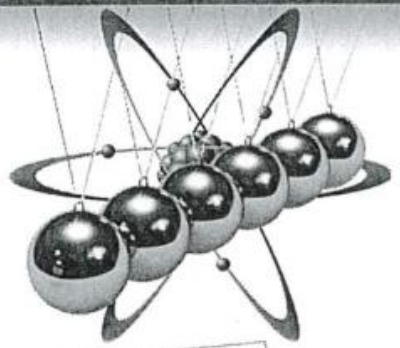
University degrees that require or often prefer Physics include:

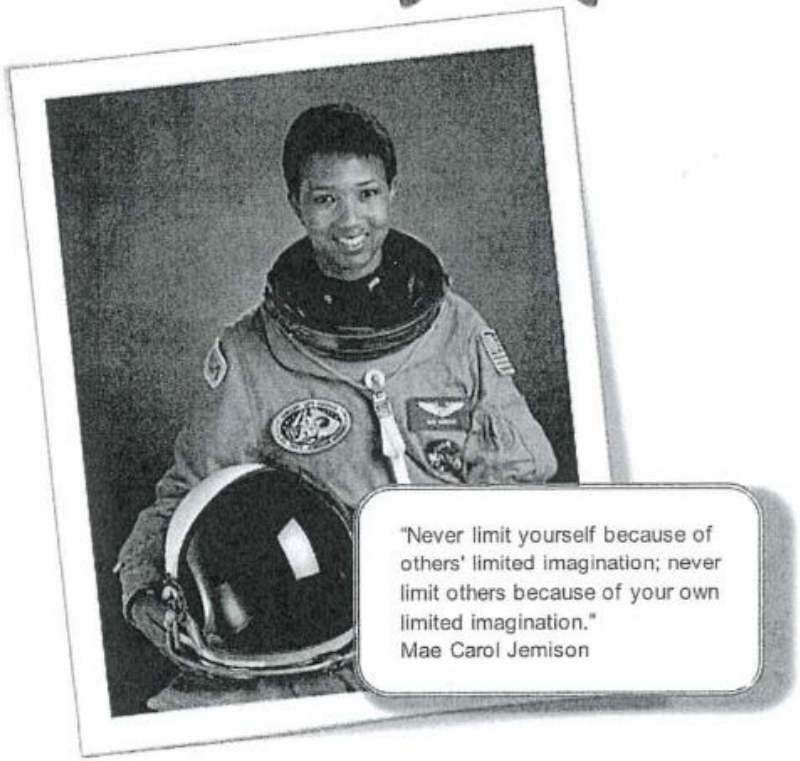
Physics, Mathematics, Engineering, Chemistry, Environmental Science, Optometry, Geology, Materials Science, Medicine, Veterinary Science, Dentistry, Physiotherapy and Computing.

Possible careers:

Directly related: All forms of engineering : civil, mechanical, electrical, aeronautical, satellite, sound, nuclear ... , therapeutic or diagnostic radiologist, medical physicist, research scientist, geophysicist, nanotechnologist – the list is very long.

Further afield: Meteorologist, product development scientist, technical author, defence industry, manufacturing, business management.





"Never limit yourself because of others' limited imagination; never limit others because of your own limited imagination."
Mae Carol Jemison