

Subject:	Separate Sciences (Biology, Chemistry & Physics)
Level:	GCSE
Awarding Body:	Edexcel
Specification Code:	1BIO, 1CH0, 1PH0
Awarding Body website:	www.edexcel.com
ASSESSMENT:	
Controlled Assessment %:	0%
When will it be taken?	N/A
Examination %:	100%
When will it be sat?	May/June at the end of Year 11
TIERS:	
Higher Tier Grades:	9 - 4
Foundation Tier Grades:	5 - 1
No Tier Grades:	N/A
Subject Leader:	Miss J Guest
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Description

The very first time a child turns over a rock or bangs the pots and pans together in the kitchen they are 'doing science'; they are experimenting. 'How does this work? Why does this happen? What would happen if...?' All of these are key questions that humans should ask throughout their lives and it is such questions that have allowed us to reach the heights of technology and medicine that we see in the world around us today.

Students can opt to take separate sciences resulting in three GCSEs; biology, chemistry and physics. Separate sciences give the students the chance to study science in a greater depth and provides the best platform for further study. It is designed for those students who are consistently achieving at least a grade 5 in science at the end of KS3, as the demand of the work is beyond that of combined science.

What will I learn?

Common to all courses:

WORKING SCIENTIFICALLY

Development of scientific thinking; Experimental skills and strategies; Analysis and evaluation; Scientific vocabulary, quantities, units, symbols and nomenclature

Course specific content includes:

- BIOLOGY** Overarching concepts in biology; Cells and control, Genetics; Natural selection and genetic modification; Health, disease and the development of medicines; Plant structures and their functions; Animal coordination; control and homeostasis; Exchange and transport in animals; Ecosystems and material cycles
- CHEMISTRY** Overarching concepts in chemistry: atomic structure, the periodic table, ionic bonding, covalent bonding, types of substance, calculations involving masses; States of matter; Methods of separating and purifying substances; Acids; Obtaining and using metals; Electrolytic processes; Reversible reactions and equilibria; Transition metals, alloys and corrosion; Quantitative analysis; Dynamic equilibria and calculations involving volumes of gases; Chemical cells and fuel cells; Groups 1, 7 and 0; Rates of reaction; Fuels; Heat energy changes in chemical reactions; Earth and atmospheric science; Qualitative analysis: tests for ions; Hydrocarbons; Polymers; Alcohols and carboxylic acids; Bulk and surface properties of matter including nanoparticles
- PHYSICS** Overarching concepts of physics: motion, forces and conservation of energy; Waves; Light and the electromagnetic spectrum; Particle model –1; Radioactivity; Astronomy; Energy - Forces doing work; Forces and their effects; Electricity and circuits; Static electricity; Magnetism and the motor effect; Electromagnetic induction; Particle model - 2

How will I be assessed?

For each GCSE there are two written examinations, making six in total for the three courses. Each examination is 1 hour and 45 minutes in length. While there is no longer any controlled assessment, eight core practical's per course must be completed. Students will be tested on their practical and investigative skills as part of the written examinations.

Future opportunities

Success in separate sciences provides a solid foundation for students wishing to study A-level sciences in sixth form. It paves the way for further study in A-level biology, chemistry, physics or applied science vocational qualifications and these can lead to higher level study at university.

Choosing Separate Sciences is a good route into a wide range of careers in any science or technology based field. Such fields include; nursing, midwifery, dentistry, medicine, engineering, computing, the chemical industry, research, and the sciences themselves.

The separate sciences also provide students with an excellent combination of theoretical/practical skills for those wishing to undertake a higher level apprenticeship in an industry allied to science.