

Science Courses at Concord College

Students may choose one of the following options on Science Courses B and D:

B1/D1	Maths and Physics
B2/D2	Chemistry and Physics
B3/D3	Chemistry and Biology
B4/D4	Maths and Biology

The level of teaching depends on the strengths of the group but the level is pitched to include the weakest member of the class.

Content varies each year and depends on the interests and skills of the teacher. It is always heavily "practical" based to develop and improve manipulative skills, design of experiments, data recording and evaluation of results. Theory lessons would lead into the topic being assessed in practical so that there is some development of each topic e.g.

- The theory of foods and food tests in practical
- The theory of separation of mixtures and carrying out these techniques in practical

A theme is usually developed in each subject area so that a block of related work can be covered.

The programme for the Science course is difficult to predict. It depends on a number of factors:

1. The previous experience of the students (a short test is given at the start to try to establish this).
2. The interests and specialities of the teachers employed each year.
3. Any new initiatives which are introduced into Science teaching that year.

In general the course is aimed at students aged 13 – 17 following the British GCSE syllabus. We aim to give the students as much practical experience as possible as it seems that they do a lot of theory in schools at home but do not have quite as much hands-on experience. Our laboratories are very good and we want to utilise them as much as possible.

The subject matter varies from year to year but the main topics covered last year in each subject were:

Biology

Food types and structure and importance of each food
Food tests
Diet
Digestion
Enzymes and factors affecting enzymes
Photosynthesis
Food chains
Respiration

Chemistry

Elements, compounds and mixtures:
Separating mixtures
Chemical analysis
Titrations
Types of chemical reaction
Rates of reaction

Maths

Algebra

Basic algebraic methods
Factorisation
Surds
Linear Equations

Quadratic Equations
Simultaneous Equations

Geometry

Triangles
Quadrilaterals
Polygons
Statistics
Calculus
Trigonometry
Arithmetic and geometrical progressions

Physics

Measurements
Pendulum
Hooke's Law
Elasticity
Experiments to determine acceleration due to gravity
Newton's Laws
Work, energy and power
Pulleys
Vectors and linear motion
Density
Momentum and impulse
Velocity of sound
Frequency and tension
Heat and kinetic theory
The gas laws
Light refraction – prisms and lenses
Electricity and Ohm's Law
Magnetism

Please note that there are no "English only" classes for Science students but, of course, they are practising their reading, speaking, listening and writing skills in all the science lessons.

We regret we cannot mix science and English classes on one course. The lesson times are the same in Science as in the English as a Foreign Language classes. The full social and recreation programme is available to Science students once classes finish at 3.00 pm.

Outside the classroom we encourage use of English in all the activities.