Why Study Biology?
The field of Biology is continuing to exert a major influence in all areas of society – medical, technical, moral and ethical. Biology also remains at the forefront of modern scientific advance, particularly in areas of biotechnology and genetics.

Biology Results 2019
A*–A 52%
A–C 90%

What Subjects Should I Study With Biology? Suggestions include:
- Chemistry
- Physics
- Mathematics
- Geography
- Physical Education
- Psychology
- Geology

Careers Using Biology
- Biochemist
- Botanist
- Dietician
- Optometrist
- Medicine (If you are intending to be a Doctor you MUST also study Chemistry)
- Ecologist
- Environmental Health Officer
- Horticulture
- Marine Biologist
- Microbiologist
- Nutritionist
- Pharmacist
- Radiographer
- Veterinary Surgeon
- Zoologist

Ecology Fieldtrip
There is an Ecology field trip during the course, which is residential and therefore has a cost involved of about £350 (bursaries available through 6th form if needed). The students complete field work in a range of habitats and using a variety of techniques. We will provide more information about this as soon as we can in Year 12.

While students are on the field trip we aim to complete one of the required practicals:
12. Investigation into the effect of a named environmental factor on the distribution of a given species

Questions: Please contact sogilvy@swchs.net
What Do I Study on the A-Level Biology Course?

A Level (Yr 12 and 13) Biology Course Content

1. Biological molecules
2. Cells
3. Organisms exchange substances
4. Genetic information, variation and relationships between organisms
5. Energy transfers in and between organisms
6. Organisms respond to changes in environments
7. Genetics, populations, evolution and ecosystems
8. The control of gene expression

A-Level Biology Teaching Team
Mrs S Ogilvy
Mr R Milne
Mrs H Butler
Mrs D Chadwick
Dr Evans

What’s Assessed
• Any content from Topics 1-4, including relevant practical skills

Assessed
• Written exam: 2 hours
• 91 marks
• 35% of A-Level

Questions
• 76 marks: a mixture of short and long answer questions
• 15 marks: extended response questions

Paper 1

Paper 2

What’s Assessed
• Any content from Topics 5-8 including relevant practical skills

Assessed
• Written exam: 2 hours
• 91 marks
• 35% of A-Level

Questions
• 76 marks: a mixture of short and long answer questions
• 15 marks: comprehension question

Paper 3

What’s Assessed
• Any content from Topics 1 - 8, including relevant practical skills

Assessed
• Written exam: 2 hours
• 78 marks
• 30% of A-Level

Questions
• 38 marks: questions, including practical techniques
• 15 marks: critical analysis of given data
• 25 marks: one essay from a choice of two titles

The A-Level Biology Course

These qualifications are linear. Linear means that students will sit all the exams at the end of the course.

Practical Work

A variety of practical work is essential to develop students’ skills and understanding of the process of scientific investigation.

A student’s practical skills are assessed throughout the year in the lab books/folders, as well as in the written exams.

CPAC practical endorsement

The practical skills for the A-Level are completed throughout twelve practical investigations over the course and are assessed in the written exams. There is a separate endorsement of practical skills, which are assessed throughout the course using the lab books.

The required practicals are:

Yr 12 Biology
1. Investigation into the effect of a named variable on the rate of an enzyme-controlled reaction
2. Preparation of stained squashes of cells from plant root tips
3. Production of a dilution series of a solute to produce a calibration curve with which to identify the water potential of plant tissue
4. Investigation into the effect of a named variable on the permeability of cell-surface membranes
5. Dissection of animal or plant gas exchange or mass transport system or of organ within such a system
6. Use of aseptic technique to investigate the effect of antimicrobial substances on microbial growth

Yr 13 Biology—some are covered on the field trip
7. Use of chromatography to investigate the pigments isolated from leaves of different plants
8. Investigation into the effect of a named factor on the rate of dehydrogenase activity in extracts of chloroplasts
9. Investigation into the effect of a named variable on the rate of respiration of cultures of single-celled organisms
10. Investigation into the effect of an environmental variable on the movement of an animal using either a choice chamber or a maze
11. Production of a dilution series of a glucose solution and use of colorimetric techniques to produce a calibration curve with which to identify the concentration of glucose in an unknown “urine” sample

CPAC practical endorsement

The practical skills for the A-Level are completed throughout twelve practical investigations over the course and are assessed in the written exams. There is a separate endorsement of practical skills, which are assessed throughout the course using the lab books.

The required practicals are:

Yr 12 Biology
1. Investigation into the effect of a named variable on the rate of an enzyme-controlled reaction
2. Preparation of stained squashes of cells from plant root tips
3. Production of a dilution series of a solute to produce a calibration curve with which to identify the water potential of plant tissue
4. Investigation into the effect of a named variable on the permeability of cell-surface membranes
5. Dissection of animal or plant gas exchange or mass transport system or of organ within such a system
6. Use of aseptic technique to investigate the effect of antimicrobial substances on microbial growth

Yr 13 Biology—some are covered on the field trip
7. Use of chromatography to investigate the pigments isolated from leaves of different plants
8. Investigation into the effect of a named factor on the rate of dehydrogenase activity in extracts of chloroplasts
9. Investigation into the effect of a named variable on the rate of respiration of cultures of single-celled organisms
10. Investigation into the effect of an environmental variable on the movement of an animal using either a choice chamber or a maze
11. Production of a dilution series of a glucose solution and use of colorimetric techniques to produce a calibration curve with which to identify the concentration of glucose in an unknown “urine” sample

CPAC practical endorsement

The practical skills for the A-Level are completed throughout twelve practical investigations over the course and are assessed in the written exams. There is a separate endorsement of practical skills, which are assessed throughout the course using the lab books.

The required practicals are:

Yr 12 Biology
1. Investigation into the effect of a named variable on the rate of an enzyme-controlled reaction
2. Preparation of stained squashes of cells from plant root tips
3. Production of a dilution series of a solute to produce a calibration curve with which to identify the water potential of plant tissue
4. Investigation into the effect of a named variable on the permeability of cell-surface membranes
5. Dissection of animal or plant gas exchange or mass transport system or of organ within such a system
6. Use of aseptic technique to investigate the effect of antimicrobial substances on microbial growth

Yr 13 Biology—some are covered on the field trip
7. Use of chromatography to investigate the pigments isolated from leaves of different plants
8. Investigation into the effect of a named factor on the rate of dehydrogenase activity in extracts of chloroplasts
9. Investigation into the effect of a named variable on the rate of respiration of cultures of single-celled organisms
10. Investigation into the effect of an environmental variable on the movement of an animal using either a choice chamber or a maze
11. Production of a dilution series of a glucose solution and use of colorimetric techniques to produce a calibration curve with which to identify the concentration of glucose in an unknown “urine” sample

CPAC practical endorsement

The practical skills for the A-Level are completed throughout twelve practical investigations over the course and are assessed in the written exams. There is a separate endorsement of practical skills, which are assessed throughout the course using the lab books.

The required practicals are: