BIOLOGY

SPECIFICATION

A Level AQA Biology spec ref: 7402

OBJECTIVES OF THE COURSE

A-level Biology is a steppingstone to future study, the course content will inspire students to nurture a passion for Biology and lay the groundwork for further study in courses like biological sciences and medicine. The latest advances in areas such as genetics and health are referred to constantly in order to reflect the rapid expansion of biological knowledge and its applications in a modern society. Students will develop synoptic links and be able to apply a range of biological concepts in order to explain information and data presented to them in novel situations.

Biology is fundamentally an experimental subject. This specification provides numerous opportunities to use practical experiences to link theory to reality and will equip students with the essential practical skills they need for future scientific study.

CONTENT AND ASSESSMENT

A Level

Paper 1: 2-hour examination. — Paper 1 – Topics 1 - 4

Paper 2: 2-hour examination. — Paper 2 – Topics 5 – 8

Paper 3: 2-hour examination. — Paper 3 – Any content from topics 1 - 8

All three examinations are taken in June.

The Topics that will be covered are:

Year 12

1 Biological molecules.
2 Cells.
3 Organisms exchange substances with their environment.
4 Genetic information, variation and relationships between organisms.

Year 13

5 Energy transfers in and between organisms.
6 Organisms respond to changes in their internal and external environments.
7 Genetics, populations, evolution and ecosystems.
8 The control of gene expression.

Questions will require students to demonstrate:

- Their knowledge and understanding of the content developed in one section or topic, including the associated mathematical and practical skills.
- The ability to apply mathematical and practical skills to areas of content they are not normally developed in.
- The ability to synoptically draw together different areas of knowledge and understanding within one answer.

A range of question types will be used, including those that require extended responses. Extended response questions will allow students to demonstrate their ability to construct and develop a sustained line of reasoning which is coherent, relevant, substantiated and logically structured. Extended responses may be in written English, extended calculations, or a combination of both, as appropriate to the question.

Importance is given to the use of mathematics (including statistics) to manipulate and analyse data in questions, this will contribute to at least 10% of the total qualification.

There are 12 required practical assignments and a variety of experiments undertaken in Years 12 and 13 which will enable students to learn how to use a range of apparatus and practical skills. Students will be assessed by their teacher on their practical competency. Students will be awarded a pass or fail for their practical skills, and this will be reported on their examination certificate. At least 15% of the marks on the written examination papers will also assess practical skills.

METHODS OF STUDY

A variety of teaching methods are employed such as group and individual work, class discussion, class presentations and practical work. Students are expected to complete a significant amount of independent study and are provided with a handbook at the start of the course which outlines the extent of work needed for success.

In addition, educational visits to places of interest are planned to extend knowledge beyond the classroom, including fieldwork, lectures and visits.

SPECIAL FEATURES OF THE COURSE

Students have the opportunity to deliver Science practical activities to primary school pupils, deliver Crest Award project activities to KS3 students and support Biology students in lower year groups.

More able students are provided with the opportunity to enter the Biology Olympiad competition.