

Subject: Biology

Biology Lead: Pam Sutliff

Exam Board: AQA

Qualification type: GCSE

Intent

Principles of the Biology Curriculum

The United Curriculum for Biology is built upon the core United Curriculum principles available **here**.

Our biology curriculum is sequenced so that students build an increasingly deep knowledge. All students learn the 3 science disciplines, biology, chemistry and physics at KS3 and KS4 but the most able scientists are selected to study for the three single science GCSEs rather than GCSE Combined Science (Trilogy) equivalent to two GCSEs. In biology, new content is introduced in small steps, and students are supported to develop their understanding by connecting this new content with their prior knowledge. Knowledge is revisited over the years to restimulate memory in new contexts. Where appropriate, meaningful links are made with other subjects, particularly geography and mathematics.

Our curriculum links learning to real-life contexts and highlights the relevance of biology to everyday situations. Curiosity is nurtured through a practical approach and students develop confidence in the skills and security in the knowledge needed to achieve the highest aspirations. Students continue to study biological courses at university including medicine, dentistry, physiotherapy and marine biology.

The rationale behind the sequencing of lessons:

The topics are sequenced so that content builds on previously learned concepts. Topics on paper 1 of the GCSE are delivered first to maximise revision time prior to the year 10 exams and scaffold the progress to GCSE. Do now tasks are used to check recall and understanding of previously taught topics that are then developed within the lesson. eg. Students need to understand cell structure before they study the function of the chloroplast and bioenergetics builds on the basics of photosynthesis taught at KS3. Homework is used to consolidate learning and practise skills required eg. numeracy and extended writing.

Implementation

In Key Stage 4 the Biology curriculum is implemented as follows:

Year 10

The year 10 biology curriculum builds on the National Curriculum for KS3 and covers the KS4 GCSE content. Students learn through direct instruction, modelling, practical work and independent research. Required practicals are an important part of the exam assessment and allow students to learn through hands on exploration while developing working scientifically skills including planning, recording data, graph skills, analysis and evaluation. Homework is integral to our curriculum and provides a structured opportunity for students to consolidate their learning through the use of online tools eg. Seneca and past paper questions.

Year 11

The year 11 biology curriculum completes the National Curriculum for KS4 and the GCSE content. Students learn through direct instruction, modelling, practical work and independent research. Required practicals are an important part of the exam assessment and allow students to learn through hands on exploration while developing working scientifically skills including planning, recording data, graph skills, analysis and evaluation. Homework is integral to our curriculum and provides a structured opportunity for students to consolidate their learning through the use of online tools eg. Seneca and past paper questions.

Impact

The careful sequencing of the curriculum – and how concepts are gradually built over time – is the progression model. If pupils keep up with the curriculum, they are making progress. Formative assessment is prioritised and is focused on whether pupils are keeping up with the curriculum.

In general, this is done through:

- Questioning in lessons. Teachers check understanding so they can fill gaps and address misconceptions as required.
- Pupil conferencing with books. Subject leads and SLT talk to pupils about what they have learnt – both substantive and disciplinary knowledge – and how this connects to the vertical concepts that they have been developing in previous years and other subjects.
- Post-learning quizzes at the end of each unit. These give teachers an understanding of the knowledge that pupils can recall at the end of the unit and can be used to identify any remaining gaps to be filled.
- Pre-learning quizzes at the start of each unit. These assess pupils' understanding of the prior knowledge that is required to access the new content in the unit. These are used to identify gaps to be filled prior to teaching the new unit.