

Biology Curriculum Intent

KS5

Our ultimate aim is to produce Biologists of the future who are going to influence the community around them in their later lives. They must be curious and know how their work is applicable to the wider world. Our students should enjoy the challenge and will show thought and resilience when faced with biological questions. A good biologist has a clear understanding of the core concepts and is able to use this knowledge to apply it to a wide range of situations both in practicals and in written work. Our curriculum promotes resilience, independence and organisation.

The scope and nature of A-Level Biology A (Pearsons- Salters Nuffield) ensures we cover aspects of both human and plant, macro and micro, historic interpretations of the living world and ideas firmly looking to the future application of Biology. It encourages students to be inspired, motivated and challenged by the subject matter and the achievements that this science has brought about. Students are helped to appreciate how the complex and diverse natural world can be explained with the basic principles of the big ideas, these include the building blocks of life – the biological molecules and how these interact inside cells and organisms. We look at how organisms regulate themselves through homeostasis and then how the organisms interact with each other in ecosystems. The interdependence of all life is explored and the variety and survival of organisms is looked at through the sphere of genetics. We look to the future and how our knowledge of genetics can influence how we target and treat diseases. We are committed to providing a stimulating, engaging and intellectually challenging learning environment to enable all our students to develop scientific consciousness, from the basic biological molecules of organisms to species interactions within ecosystems. This will allow our students to become informed citizens and empower them to make decisions in future careers and their own lives that will benefit society as a whole. We challenge our students by offering the opportunity to read around the syllabus and include current events and discoveries in lessons. We participate in the Biology Olympiad Intermediate challenge. Our learners are scientifically literate and are able to articulate their knowledge and thinking in many different ways. There has been a recent change to the curriculum to increase the focus on practical skills as these will be vital when moving on to the workplace or to further education providers. We aim to support our students to become outstanding scientists who are able to complete an experiment from beginning to end. They will be able to plan valid experiments and make adjustments where necessary. They will be skilled with a wide range of apparatus and will be able to select the correct apparatus for the relevant task. Results obtained will be recorded within scientific convention and will be analysed and evaluated in a wide range of ways using mathematical tools and reasoned written justifications. Our curriculum encourages and facilitates further studies or potential careers in the subject, whilst empowering students to have a greater appreciation and awareness of Biology related issues in the world around them.

Biology Curriculum Implementation

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 12	Cytology: Biochemistry Heart, CVD and Diet Enzymes Exchange and transport		Completion of any topics and then: Voice of the Genome 1 - Cell division and Fertilisation Voice of the genome 2 Stem cells and Gene interactions DNA and Genetics, Protein synthesis		Biodiversity and Classification Plant Biology Evolution and Speciation (Yr 13 content)	
Year 13	Forensics and Modern Genetic Techniques Photosynthesis Biodiversity and Ecosystems Global warming Immunity Nerves and synapses		Completion of any topics needed and then: Respiration Muscles Homeostasis Brain and Learning		Pre-Release material Revision.	

Biology Curriculum Impact KS5

		FORMATIVE; <i>The instructional guidance that identifies central points of learning and plans for the progression of individual students.</i>	SUMMATIVE; <i>This describes individuals learning at the end of an instructional unit by comparing it against a standard or benchmark. (High Stakes Assessment)</i>	EVALUATIVE; <i>This is about institutional accountability and comes after terminal exams. External agencies.</i>
TIME SCALE	Annually		Year 12: - End of Year assessment (June) - based upon all topics taught in year 12. - 2 Papers are sat for the two halves of the course - 90 minutes for each paper Year 13: - Mock Examinations (September, December and February) - based upon all topics taught to this point.	Nationally standardised summative assessment takes the form of A-levels and vocational qualifications at the end of Key Stage 5. A-level exam board: Edexcel A Salters Nuffield Exam structure: (all equally weighted) Paper 1 : Paper 2 -

			- 2 Papers are sat for the two halves of the course. - 90 minutes for each paper	Paper 3 -
	Interim (termly or half-termly)		<u>Cumulative Testing:</u> • Each half term- yr 12 OR termly - yr13 students will sit cumulative tests covering all topics covered to date. • The exam will use questions taken from the exam board which have previously been in real exams. • The assessments will be approximately 60-90 minutes • Exams are marked by specialists and moderated in-house. • Grade boundaries from the most recent exam series are used where possible and fine grades used to identify those needing intervention. <u>End of topic exams</u> End of topic test continuing practice questions for the cumulative tests are provided to students to complete during their 10th- non face to face lesson for Biology. Students complete this test under exam conditions and then self assess using the mark scheme and grade boundaries provided. <u>Homework booklets</u> At the start of each topic a booklet of questions is handed out. These are longer style questions that require students to develop their use of key terminology. An extension task is also included to stretch the most able students beyond the syllabus. Booklets are collected by staff and marked - ReACT activities are recorded on the front of the booklet. <u>Folder checks</u> Folders are collected half termly to ensure students are managing their notes and time well. Feedback is provided via pink sheets. Practical Assessments:	

			Practicals will constitute 15% of each exam paper and EDEXCEL has identified 18 Required practicals for students to complete. Practical skills are assessed for CPAC which is awarded (pass/fail) separately from the A level exams. Each practical has specific criteria staff are to assess and monitor via a shared spreadsheet provided by the exam board. Students are given practical sheets made in house with sections to complete to achieve each criteria. CPAC: Practical assessments are carried out throughout the course. A cycle of moderation from the exam board is carried out to check on teacher assessment. Students write up the required practicals and get feedback as each is marked to enable students to perform better in subsequent write-ups.	
	Weekly	Teachers role: - Identify how students are performing and use this to provide support, evaluate student learning and plan future lessons. - Provide oral and/or written feedback. - Keep track of student progress using department internal and school wide data systems. - Scaffold feedback to students for effective self/peer assessment. - Exam questions set fortnightly according to schemes of work - students submit for marking and feedback given. Students role: - Engage in self assessment. - Engage in peer assessment. - Be proactive in ReACT tasks. - Revise content.		

		- Redraft and submit work which is completed to the best of their abilities. - Identify their own strengths and weaknesses and ask for support from their subject teachers.	
	Hourly	<i>'Every Lesson Every Day'</i> techniques are embedded in lessons formative assessment takes place using the following strategies: - Questioning - Low stakes testing - Spiral learning - Oral feedback - Whole-class feedback - Retrieval practice tasks	