

The National 3 / National 4 Course will be of value to those wishing to develop skills, knowledge and understanding of biology. It aims to develop scientific understanding of biological issues, with an emphasis on practical activities. The Course is a broad and up-to-date selection of concepts and ideas relevant to the central position of life science within our society. An experimental and investigative approach is used to develop knowledge and understanding of biology's key areas. The Course covers major areas of biology ranging from cellular to whole organism and up to ecosystems. The key areas of biodiversity, interdependence, body systems and cells and inheritance are developed through the Course. The Course allows flexibility and personalisation within each Unit and within the Added Value Unit of the Course by offering choice in the contexts studied.

The National 5 Course covers major areas of biology ranging from cellular to whole organism and up to ecosystems. The key areas of biodiversity, interdependence, body systems and cells and inheritance are developed through the Course. The focus on cellular level processes will lead to an understanding of the importance and roles of the cell. By comparing the processes in multicellular plants and animals, learners investigate increasing levels of complexity. In Life on Earth, the key areas of biodiversity and interdependence are covered, along with the processes leading to evolution as well as food security and ethical issues.

The Higher course allows learners to develop deeper understanding of the underlying themes of biology: DNA and the Genome, Metabolism and Survival, Sustainability and Interdependence. Within each of the Units, the scale of topics ranges from molecular through to whole organism. In addition, to increase the relevance of the Course, within each Unit the most relevant applications of biological understanding are highlighted. Recent biological advances in the news are discussed and their relevance to the course underlined.

The Advanced Higher course provides an integrated study of a range of topics which build on the concepts developed in Higher Biology. The content of the course reflects the importance of cell and molecular biology and environmental biology in the world today. It provides opportunities for the students to develop their knowledge and understanding of biology, their skills in problem solving and their practical abilities.

NATIONAL 3/4 BIOLOGY	
REQUIREMENTS	This course is offered to all pupils in S4, S5 or S6. No prior knowledge is required.
COURSE CONTENT	The course consists of three units of approximately the same length: <ul style="list-style-type: none"> • Life on Earth • Cell Biology • Multicellular Organisms
ASSESSMENT	Pupils are required to complete: <ul style="list-style-type: none"> • An end of unit assessment for each unit studied. • A short report relating to one of the units covered, describing the application of Biology in a particular area and its effect on Society. • A practical investigation and a written report, which is internally assessed. • A research assignment. Candidates must pass all internal assessments (written and practical) to be awarded a National 4 Biology pass.
PROGRESSION / NEXT STEPS	A pass in this course will allow progression into other Science subjects at National 4 level. A pass in National 4 Biology will provide opportunity for progression into National 5 Laboratory Skills. Pupils may wish to discuss relevant work experience/placements with Faculty staff and their Guidance Teacher.

NATIONAL 5 BIOLOGY	
REQUIREMENTS	This course is offered to all pupils in S4, S5 or S6. Pupils are expected to have completed the S3 Biology course and achieved Level 4.
COURSE CONTENT	<p>The course consists of three units of approximately the same length:</p> <ul style="list-style-type: none"> • Life on Earth • Cell Biology • Multicellular Organisms <p>Each unit builds upon and extends the fundamental concepts of Biology introduced in S3 Biology.</p>
ASSESSMENT	<p>Pupils are required to complete:</p> <ul style="list-style-type: none"> • An end of unit assessment for each unit studied. • A short report relating to one of the units covered, describing the application of Biology in a particular area and its effect on Society. • A practical investigation and a written report, which is internally assessed. • An externally assessed research assignment. This counts as 20% of the final grade awarded. • The SQA's written external exam is 2 hours long. This counts as 80% of the final grade awarded <p>Candidates must pass all coursework and the SQA exam to be awarded a National 5 Biology pass.</p>
PROGRESSION / NEXT STEPS	<p>There are a number of skills that are acquired and developed throughout National 5 Biology that can be useful in other curricular areas. These include:</p> <ul style="list-style-type: none"> • Applying knowledge to new situations, interpreting informations in an aim to solve problems. • Selecting, processing and presenting information in various formats. • Planning, designing and safely carrying out investigations. • Making predictions and conclusions from information an giving explanations supported by evidence. <p>A good pass in National 5 Biology will provide opportunity for progression into Higher Biology or/and a different Science subject at National 5 level. National 5 Biology is a good basis for continuing Biology as a choice for further study beyond school at college and/or university. There are many careers where skills and knowledge acquired from Biology are essential such as in nursing, medicine and veterinary practice; health and beauty careers; working in food and hospitality and careers in ecology and agriculture. Pupils may wish to discuss relevant work experience/placements with Faculty staff and their Guidance Teacher.</p>

HIGHER BIOLOGY	
REQUIREMENTS	This course is offered to S5 and S6 Pupils who have a pass in National 5 Biology at either Grade A or Grade B.
COURSE CONTENT	<p>The Higher Biology course consists of 3 units of approximately the same length:</p> <ul style="list-style-type: none"> • DNA and the Genome • Metabolism and Survival • Sustainability and Interdependence <p>Each unit builds upon and extends the fundamental concepts of Biology introduced at National 5.</p>
ASSESSMENT	<p>Internal Assessment</p> <ul style="list-style-type: none"> • At the end of each Unit a written exam will be given. These are important as the candidate must pass each, in addition to the external exam at the end of the course. Candidates who fail to pass a Unit exam are given one resit opportunity. • Students must also complete a practical investigation and produce a written report, which is internally assessed. <p>External Assessment</p> <ul style="list-style-type: none"> • Research Assignment: The purpose of the assignment is to assess the application of skills of scientific inquiry and related biology knowledge and understanding. This counts as 17% of the final exam. • Exam: The SQA's written external exam is 2¹/₂ hours long. It is split into three sections: A multiple choice part, a short answer part and extended response part. <p>Candidates must pass all internal assessments (written and practical) and the SQA exam to be awarded a Higher Biology pass.</p>
PROGRESSION / NEXT STEPS	<p>Students will have the chance to relate learning experiences to employment opportunities. Students will be encouraged to engage with a rapidly developing scientific field. Students will also have the opportunity to use digital and online resources to help them with their studies.</p> <p>At school level a Higher Biology pass can be followed by Advanced Higher Biology. Higher Biology is a very desirable qualification for entry into many Higher /Further Education courses and will be an essential entry requirement into any Biology related field such as medicine, dentistry, veterinary medicine, nursing, agriculture, forensics, genetics, fisheries biology. Pupils may wish to discuss relevant work experience/placements with Faculty staff and their Guidance Teacher.</p>

ADVANCED HIGHER BIOLOGY	
REQUIREMENTS	A Grade A or Grade B pass in Higher Biology
COURSE CONTENT	<p>The course consists of 3 mandatory units:</p> <ul style="list-style-type: none"> • Cells and Proteins • Organisms and Evolution • Investigative Biology <p>Each unit builds upon the fundamental concepts of Higher Biology</p>
ASSESSMENT	<p>Internal</p> <ul style="list-style-type: none"> • Each unit has a written assessment at the end. As in Higher Biology, a pupil must pass these, as well as the external written assessment, before they are awarded a grade in the subject. • Practical Abilities will be formally assessed within each unit by testing the students' competence at carrying out and writing a report of a set experimental investigation. <p>External</p> <ul style="list-style-type: none"> • Research Investigation and Report: An investigation will be marked externally. The investigation report will be required to contain the presentation and analysis of results obtained during the investigation, details of procedure, a conclusion and a critical evaluation. As far as is practicable, the investigation is of the candidate's choosing and design. This counts towards 23% of the final award • Exam Paper <p>The grade awarded for the course will depend on the total marks obtained for the question paper (total 100 marks) and for the investigation (total 30 marks).</p>
PROGRESSION / NEXT STEPS	<p>Pupils will have the opportunity to visit the University of Aberdeen. Here they can work with proteins in a teaching laboratory and attend lectures from experts in molecular biology. Students can also work with local employers whilst completing their own unique biology investigation. Aberdeenshire Rangers, Glentanar Estate, the River Dee Trust, and Aberdeen University have all helped AH students learn the skills to complete their projects successfully. Working with people already employed as biologists can help students to relate their learning experiences to work opportunities and career paths.</p> <p>Advanced Higher Biology is a highly desirable qualification. It will provide entry into relevant Higher Education Courses and prepare pupils for their first year at University. For those not choosing Higher Education, Advanced Higher Biology is a qualification highly regarded by all employers. Fields such as: medicine, dentistry, veterinary medicine, nursing, agriculture, forensics, genetics, and fisheries biology all demand biology as a pre requisite qualification.</p>