

Curriculum Intent Biology: Providing students with the knowledge of human biology to better understand health and disease and how organisms interact with their environment through ecology.

End Points for end of Year 11 Biology: Key knowledge - Skills - Character

Key Knowledge: Cells and organisation of humans and plants, disease and bioenergetics in humans and plants, biological responses in human biology, genetics and reproduction, ecology and the impact of humans on the environment.

Skills: Investigative Skills (Required Practicals) Method Writing. Maths Skills: Plotting and interpreting graphs, evaluating tables, calculating means and identifying abnormalities, determining the gradient of a graph, percentages, ratios, fractions.

Character: Developing Independence And Resilience

Term	Module (number of lessons)	Essential Knowledge, Key words and skills learnt in this module (How this module contributes to the intent)	Links to Prior Learning	Links to future learning
Y10 Term 1	B3. Organisation and Digestion (10)	- Organisation structure of the human body - Digestion and enzymes - Practical analysis of enzymes and food tests.	Y7 – Cells Y7 – Organisation Y9 – B1 Cell structure and transport	Y10 – B5 Communicable Disease BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Anatomy, Molecular Biology Clinical Scientist Microbiologist Nutritionist
Y10 Term 1	B4. Organising Animals & Plants (11)	- The circulatory system - The heart, blood and blood vessels in detail. - Breathing and gas exchange - The organisation structure of plants - The transport system in plants	Y7 – Cells Y7 – Organisation Y9 – B1 Cell structure and transport	Y10 – B5 Communicable Disease BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human

				Biology, Anatomy, Molecular Biology, Botany. Performance Sports Scientist Veterinary nurse and vet
Y10 Term 2	B5. Communicable Disease (7,11)	- Health and disease. - Disease causing pathogens - Growing bacteria in the lab (Separates). - Preventing the spread of diseases - The human response to disease - Plant diseases and how plants respond to them (Separates).	Y7 – Cells Y7 – Food Science Y8 – Health and disease Y9 – B1 Cell structure and transport	Y10 – B6 Preventing and Treating Disease BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Immunology, Anatomy, Molecular Biology, Botany. Clinical Scientist Doctor, Dentist or Nurse Veterinary nurse and vet Tree surgeon Pharmacist Florist
Y10 Term 2	B6. Preventing and Treating Disease (4,6)	- Vaccinations and how it works - Antibiotics and painkillers - Discovering and developing drugs - Making and the use of monoclonal antibodies (Separates)	Y7 – Cells Y8 – Health and disease Y9 – B1 Cell structure and transport	BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Immunology, Anatomy, Molecular Biology. Clinical Scientist Doctor, Dentist or Nurse Veterinary nurse and vet Pharmacist

Y10 Term 2	B7. Non-communicable Disease (5)	- Examples and definition of non-communicable diseases. - Cancer. - Smoking. - Alcohol and other carcinogens. - Diet and exercise.	Y8 – Health and disease Y9 – B1 Cell structure and transport	BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Immunology, Anatomy. Community Nurse Pharmacist
Y10 Term 3	B9. Respiration (4)	- Aerobic and anaerobic respiration - The response of the body to exercise - Metabolism and the liver	Y7 – Organisation Y9 – B1 Cell structure and transport	BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Immunology, Anatomy. Sports Scientist
Y10 Term 3	B8. Photosynthesis (4)	- Photosynthesis and leaf adaptations. - Measuring the rate of photosynthesis. - How plants use glucose - Maximising photosynthesis.	Y9 – B1 Cell structure and transport	BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Biology, Botany. Horticulturist Farmer Florist
Y10 Term 3	B10. Human Nervous System (3,6)	- Basics of homeostasis. - The nervous system and neurons. - The reflex arc.	Y7 Cells Y9 – B1 Cell structure and transport	BTEC in Applied Biology or A-level in Biology

		- The brain and eye (Separates)	Y9 - Biomimicry	Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Immunology, Anatomy, Neuroscience. Optician Neurologist
Y10 Term 3	B11. Hormonal Coordination (8,10)	- The concepts of hormonal control in the human body. - Controlling blood glucose levels. - Diabetes. - Negative feedback loops. - Human reproduction and the menstrual cycle. - The control of infertility and treatments. - Plant hormones and their responses (Separates).	Y7 - Reproduction	BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Immunology, Anatomy, Neuroscience. Diabetic nurse Nutritionist Horticulturist
Y10 Term 3	B12 Homeostasis in Action (Separate Science Only)	- Kidney and kidney dialysis - Body temperature - Waste products	Y7 - Reproduction Y10 - B10 Y11 - B11	
Y11 Term 1	B13. Reproduction (7, 10)	- Types of reproduction. - Cell division. - DNA and the genome. - DNA and protein synthesis (Separates). - Gene expression and mutation (Separates). - Genetic cross diagrams	Y7 - Cells Y7 - Reproduction Y9 - B1 Cell structure and transport Y9 - B2 Cell Division	Y11 - B14 Variation & Evolution Y11 - B15 Genetics & Evolution BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human

		- Inherited disorders and screening for them.		Biology, Immunology, Anatomy, Genetics, Molecular Genetics. Embryologist
Y11 Term 1	B14. Variation & Evolution (5, 7)	- Variation. - Natural Selection. - Genetic engineering. - Cloning and Adult cell cloning (Separates) - The ethics associated with genetics.	Y7 – Adaptations and Ecology Y7 – Cells Y7 – Reproduction Y9 – B1 Cell structure and transport Y9 – B2 Cell Division	BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Anatomy, Evolutionary Biology. Embryologist Geneticist
Y11 Term 2	B15. Genetics & Evolution (6,10)	- The theories of evolution and history of genetics (Separates) - Accepting Darwin's theories (Separates). - Speciation (Separates). - Evidence for evolution and fossils. - Antibiotic resistance. - The classification of organisms.	Y7 – Adaptations and Ecology Y7 – Cells Y7 – Reproduction Y9 – B1 Cell structure and transport	BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Immunology, Anatomy, Evolutionary Biology, Ecology. Gardener Palaeontologist
Y11 Term 2	B17. Organising an Ecosystem (3, 4)	- Feeding relationships. - The Materials and Carbon cycle. - Rates of decomposition (Separates)	Y7 – Adaptations and Ecology Y9 – B16 Adaptations and Competition	BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Physiology, Human Biology, Ecology, Anatomy, Evolutionary Biology.

				Countryside Officer Gardener
Y11 Term 2	B18. Biodiversity & Ecosystems (6, 12)	- The human population explosion. - Land, air and water pollution. - Deforestation and peat destruction. - Global warming. - Maintaining biodiversity.	Y7 – Adaptations and Ecology	BTEC in Applied Biology or A-level in Biology Degree in Cell Biology, Biology, Biochemistry, Ecology, Conservation Biology, Evolutionary Biology. Environmental consultant Energy Assessor Rural surveyor