

## UoB School Curriculum Outline – BIOLOGY 2017/2018

	Term 1a	Term 1b	Term 2a	Term 2b	Term 3a	Term 3b
Yr 7 2h/2wk	<p><b>Safety and cells.</b></p> <p><i>Find out about cells, the building blocks of living things and discover how to use a microscope and earn your microscope licence.</i></p>	<p><b>Reproduction in plants</b></p> <p><i>Learn the names and jobs of all the parts of a flower and then discover the fascinating ways plants have developed to reproduce and disperse their seeds around the globe.</i></p> <p><b>Assessment point 1</b> Cell structure and function</p>	<p><b>Reproduction in animals 1:</b> structures and functions</p> <p><i>Learn the structure of human reproductive organs and practice explaining the sequence of events involved in fertilisation of an egg and the menstrual cycle.</i></p> <p><b>Assessment point 2</b> Plant and human reproduction.</p>	<p><b>Reproduction in animals 2:</b> Control and development</p> <p><i>Practice using the vocabulary you learnt last term whilst discovering how twins are formed and how the foetus grows and develops in the womb.</i></p> <p><i>Develop your data analysis skills by taking measurements, plotting bar and line graphs and describing the trends.</i></p>	<p><b>Inheritance and DNA</b></p> <p><i>Learn about the structure and function of chromosomes and genes. Practice your graph drawing skills and learn the difference between a bar graph and a histogram. Carry out your own research on how the structure of DNA was discovered.</i></p> <p><b>Summer exam</b> Reproduction and Inheritance.</p>	<p><b>Adaptation and Natural selection</b></p> <p><i>Develop your oracy and scientific writing skills by describing and justifying animal adaptations and explaining the process of natural selection.</i></p>

<p>Yr 8 3h/2wks</p>	<p><b>Moving useful substances:</b> Plant organs and tissues</p> <p><i>Find out about how plants can make their own food by a process called photosynthesis. Develop your numeracy skills by calculating surface area / factors / mass change &amp; percentage mass change whilst carrying out an experiment investigating water loss from plants (transpiration). View plant sections down a microscope and use your creative skills to make scientific drawings.</i></p>	<p><b>Energy production and use:</b> Photosynthesis and respiration</p> <p><i>Investigate the effect of light intensity on the rate of photosynthesis using pond weed. Then make algal balls and use them to investigate photosynthesis and respiration. Develop your data analysis skills by Identify and describing trends on graphs plotted of your experimental results.</i></p> <p><b>Assessment point 1</b> Plant adaptations and photosynthesis.</p>	<p><b>Minerals and growth:</b> use and abuse</p> <p><i>Develop your scientific writing skills by explaining the process of eutrophication. Investigate the effect of gravity on the direction of growth of radish seed shoots and roots. Take measurements, consider variables and draw conclusions.</i></p> <p><b>Assessment point 2</b> Minerals use and abuse</p>	<p><b>Transferring energy:</b> Understanding food webs and energy transfer</p> <p><i>Learn about Ecological terms including populations, ecosystems, niche, interdependence, trophic levels and then continue to develop your scientific writing skills by describing how populations of predators and prey change over time.</i></p>	<p><b>Environmental issues and interactions:</b> Understanding how humans can influence biodiversity.</p> <p><i>Learn about how different pollutants can effect biodiversity. Then carry out your own experiment to find out how copper sulfate effects germination of cress seeds.</i></p> <p><b>Summer exam</b> Plant structure, photosynthesis and ecology.</p>	<p><b>Cycles in nature:</b> Understand how elements such as carbon are recycled in nature.</p> <p><i>Bring together everything you have learnt this year to create a poster explaining the carbon cycle. Then determine your own carbon footprint and discover how you could improve it and at the same time develop your oracy and scientific writing skills.</i></p>
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<p>Yr 9 AQA Biology 2h/2wks</p>	<p><b>Organisation:</b> Tissues, organs and organ systems in humans</p> <p><i>Find out about the structure and function of lungs, heart, blood vessels and blood. Develop your scientific writing skills by using your new knowledge and vocabulary to explain how the lungs are adapted for their function.</i></p>	<p><b>Health and disease:</b> Risk factors for non-communicable diseases &amp; cardiovascular disease.</p> <p><i>Learn about risk factors associated with non-communicable diseases such as coronary heart disease and find out about the latest advances in modern medicine.</i></p> <p><b>Assessment point 1</b> Organisation, health and disease.</p>	<p><b>Infection and response:</b> Fighting disease and drug development.</p> <p><i>Find out about the fascinating world of pathogens &amp; discover what your body does to defend itself from being infected by them. Develop your analysis skills by Interpreting data on vaccination rates and reported cases of disease such as the MMR vaccine.</i></p> <p><b>Assessment point 2</b> Communicable disease</p>	<p><b>Cell biology:</b> Cell structure, differentiation, specialisation and microscopy.</p> <p><i>Find out about prokaryotes and eukaryotes. Then develop your practical skills by staining, viewing and drawing cells down a microscope. Learn about other more powerful microscopes that are available for scientists to use and think about how this has helped biologist understand more about the structure of a cell.</i></p>	<p><b>Organisation:</b> Human digestive system and enzymes</p> <p><i>Discover how your body uses enzymes to break down (digest) your food. The learn how to do laboratory tests to detect fats, carbohydrates and proteins in the food you eat.</i></p> <p><b>Summer exam</b> Cell biology, organisation and disease.</p>	<p><b>Organisation:</b> Human digestive system and enzymes continued.</p> <p><i>Carry out experiments to discover what conditions different enzymes work best in. You will then need to use your data analysis skills to plot graphs and interpret your results.</i></p>
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<p>Yr 12 OCR Biology A New Spec</p> <p>Teacher A 4hrs/2wks</p> <p>Teacher B 5hrs/2wks</p>	<p>Cells and microscopy.</p> <p>Chemicals for life : biologically important molecules and their reactions</p>	<p>Cell division and cell development.</p> <p>Enzymes and proteins</p>	<p>Mass transport in animals:</p> <p>Exchanging substances with the environment and transport in plants</p>	<p>Communicable disease, disease prevention and the immune system.</p> <p>Evolution and classification</p> <p>Biodiversity</p>	<p>Revision/<b>Exam</b></p>	<p>Ecosystems</p> <p>Populations</p>
<p>Yr 13 OCR Biology A New Spec</p> <p>Teacher A 4hrs/2wks</p> <p>Teacher B 5hrs/2wks</p>	<p>Homeostasis: Hormonal and neuronal control</p> <p>Cellular control and patterns of inheritance</p>	<p>Excretion as an example of homeostatic control.</p> <p>Manipulating genomes, cloning and biotechnology</p>	<p>Animal responses and respiration</p> <p>Plant responses and photosynthesis</p>	<p>Pulling it together.... Synoptic review of Y12 and Y13</p>	<p>Revision/ <b>Exam</b></p>	