

Oswaldtwistle School KS4 GCSE Biology Long Term Plan

	Topic/Learning Pathway	Key Words	Links to previous learning	Links to wider curriculum
<b>AUTUMN 1</b>	<p>Cells and Organisation</p> <ul style="list-style-type: none"> <li>cell structure and transport</li> <li>cell division</li> </ul>	<p>Cell, diffusion, osmosis, active transport, mitosis</p>	<p>KS1 Naming plants, basic structure of plants, Identifying animal kingdoms (birds, mammals etc) and groups (herbivore etc)</p> <p>KS3 Microscopy, basic cell structure, organelle function, comparing cells, diffusion,</p>	<p>KS4 - Maths, Summer 1 – graphs and charts</p>
<b>AUTUMN 2</b>	<p>Cells and Organisation</p> <ul style="list-style-type: none"> <li>organisation and digestion</li> <li>organising animals and plants</li> </ul>	<p>Enzyme, catalyst, digestion, circulation, gas exchange, transpiration.</p>	<p>KS1 Naming body parts, linking organs to senses,</p> <p>KS2 Breaking down food for energy, use of different teeth, function of heart/blood vessels, nutrient transport systems</p> <p>KS3 Cells/tissues/organs, blood production, dirt, food groups, energy requirements, digestion, plants using carbs, gas exchange,</p>	<p>KS4 - PE, Spring 1 – exercise and the body</p>
<b>SPRING 1</b>	<p>Disease and Bioenergetics</p> <ul style="list-style-type: none"> <li>communicable disease</li> <li>preventing and treating disease</li> <li>non-communicable disease</li> </ul>	<p>Communicable, pathogen, antibiotic, vaccination, antibodies, antigens</p>	<p>KS1 Requirements for humans- health (water, exercise, types of food, hygiene)</p> <p>KS2 Nutrition, changes through age in humans, impact of diet/drugs on health</p> <p>KS3 Drugs and health,</p>	<p>KS3 – PSHE, Autumn 2 – healthy eating KS3 – PSHE, Summer 1 – legal and illegal drug/sex/STIs</p>

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<p><b>SPRING 2</b></p>	<p>Disease and Bioenergetics</p> <ul style="list-style-type: none"> <li>• Photosynthesis</li> <li>• respiration</li> </ul>	<p>Photosynthesis, endothermic, exothermic, respiration, aerobic, anaerobic</p>	<p>KS1 Plant requirements (light, water CO<sub>2</sub>) KS2 Plant requirements (nutrients), variation between plants and needs, life cycles seed dispersal, KS3 Photosynthesis equation, dependency of life on photosynthesis, leaf adaptations, equations for respiration, comparing respiration types, surface area to volume ratio</p>	<p>KS4 - Maths, Summer 1 – graphs and charts KS4 - PE, Spring 1 – exercise and the body</p>
<p><b>SUMMER 1</b></p>	<p>Biological Responses</p> <ul style="list-style-type: none"> <li>• the human nervous system</li> </ul>	<p>Homeostasis, neuron, central nervous system, myopia, hyperopia</p>	<p>KS2 Muscles, skeleton, nerves KS3 Skeleton, biomechanics</p>	
<p><b>SUMMER 2</b></p>	<p>Biological Responses</p> <ul style="list-style-type: none"> <li>• hormonal coordination</li> </ul>	<p>Thermoregulation, diabetes, gland, hormone</p>	<p>KS1 All living things have babies</p>	<p>KS4 - Maths, Summer 1 – graphs and charts</p>

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<p><b>AUTUMN 1</b></p>	<p>Biological Responses</p> <ul style="list-style-type: none"> <li>• homeostasis in action</li> </ul>	<p>Menstrual cycle, hormone, contraception</p>	<p>KS1 Organs in humans, KS2 nutrient transport</p>	<p>KS3 – PSHE, Summer 1 – contraception</p>

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<p><b>AUTUMN 2</b></p>	<p>Genetics and reproduction</p> <ul style="list-style-type: none"> <li>reproduction</li> </ul>	<p>Meiosis, asexual, genetic disorder, mutation, DNA</p>	<p>KS1 All living things have babies</p> <p>KS2 Life process/reproduction in specific animals/plants, similarities to parent</p> <p>KS3 Animal reproduction, plant reproduction, gestation, birth, seed dispersal, inheritance, chromosomes,</p>	<p>KS4 - Maths, Spring 1 – fractions, decimals and percentages.</p> <p>KS3 – PSHE, Autumn 2 -puberty</p>
<p><b>SPRING 1</b></p>	<p>Genetics and reproduction</p> <ul style="list-style-type: none"> <li>variation and evolution</li> <li>genetics and evolution</li> </ul>	<p>Variation, natural selection, evolution, selective breeding, genetic modification, speciation, extinction, classification</p>	<p>KS2 Classification, observable characteristics for classification, fossils-changes over time</p> <p>KS3 Inheritance, chromosomes, variation between species, adaptations</p>	<p>KS4 - Maths, Summer 1 – graphs and charts</p> <p>KS4 - Maths, Spring 1 – fractions, decimals and percentages.</p>
<p><b>SPRING 2</b></p>	<p>Ecology</p> <ul style="list-style-type: none"> <li>adaptation, interdependence and competition</li> <li>organising an ecosystem</li> </ul>	<p>Community, interdependence, ecosystem, adaptation, extremophile</p>	<p>KS1 Recognising living and non-living, habitats of specific animals, basic life cycles</p> <p>KS2 Environmental changes pose threats, adaptations for habitat/survival – evolution</p> <p>KS3 Feeding relationships, accumulation of toxic materials in environments, extinction, adaptation</p>	<p>KS3 – Nurture, Spring 1 /2 - Amazon Adventures (biodiversity, predator/prey)</p> <p>KS3 – Nurture, Summer 1 – The Lord of the Rings (adaptation)</p>
<p><b>SUMMER 1</b></p>	<p>Ecology</p> <ul style="list-style-type: none"> <li>organising an ecosystem</li> <li>biodiversity and ecosystems</li> </ul>	<p>Recycling, combustion, decomposition, biodiversity, pollution, greenhouse gas, biomass</p>	<p>KS1 Simple food chains, food sources,</p> <p>KS2 Predator/prey, constructing food chains,</p> <p>KS3 Feeding relationships, food security and pollination, maintaining</p>	<p>KS3 – Art, Summer 1 /2 – our environment</p> <p>KS4 - Maths, Summer 1 – Graphs and charts</p>

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			biodiversity	
<b>SUMMER 2</b>	Revision Exams			