Curriculum Summary

Subject: Biology

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<tr><th>Year 7</th><th>Year 8</th><th>Year 9</th><th>Year 10</th><th>Year 11</th></tr>
<tr><td><u>Cells and Organisation</u> Describing the structure of eukaryotic and prokaryotic cells and how microscopes helped developed our understanding.</td><td><u>Digestion, Nutrition and Respiration</u> Exploring the structure and function of the digestive system and the importance of good nutrition. Comparing aerobic and anaerobic respiration.</td><td><u>Cell Structure and Transport</u> Developing deeper understanding of the difference between eukaryotic and prokaryotic cells, and the different types of cell transport.</td><td><u>Non-communicable disease</u> Identifying and explaining how different factors can affect health and causes disease.</td><td><u>Genetics and Evolution</u> Exploring different evolutionary ideas and evaluating evidence for natural selection. Describing how scientists classify organisms and how the process has evolved.</td></tr>
<tr><td><u>Reproduction</u> Explaining sexual reproduction in plants and animals and the causes of variation between individuals.</td><td><u>Ecology</u> Explaining how organisms are interdependent on each other, and how they are classified. Investigating distribution in species.</td><td><u>Cell Division</u> Outlining the stages of the cell cycle. Evaluating the importance of stem cells and therapeutic cloning.</td><td><u>Photosynthesis</u> Outlining the process of photosynthesis; factors that can affect how it works and its importance in agriculture and horticulture.</td><td><u>Adaptations, Interdependence and competition</u> Describing how organisms adapt to their environment, how they are reliant on other species and different types of competition.</td></tr>
<tr><td colspan="2" rowspan="6">Biology is taught as part of timetabled Science lessons in Year 7 and 8.
Students study four units in each Science subject: Biology, Physics and Chemistry.</td><td><u>Organisation and the digestive system</u> Describing the structure and function of the digestive system. Explaining the role of digestive enzymes.</td><td><u>Respiration</u> Compare and contrast aerobic and anaerobic respiration and how exercise affects the body.</td><td><u>Organising an ecosystem</u> Describing the feeding relationships between organisms and nutrient cycles.</td></tr>
<tr><td><u>Organising animals and plants</u> Outlining the structure and function of the heart and lungs. Describing diseases that can affect them. Explaining how substances are transported in plants.</td><td><u>The human nervous system</u> Describing the structure and function of the nervous system. Explaining the importance of homeostasis.</td><td rowspan="5"><u>Biodiversity and Ecosystems</u> Explaining the effect of humans on the environment and sustainable food production.</td></tr>
<tr><td><u>Communicable disease</u> Identifying different pathogens and how they can cause and spread disease.</td><td><u>Hormonal Coordination</u> Outlining the importance of hormonal control, focussing on diabetes and human reproduction as examples.</td></tr>
<tr><td rowspan="2"><u>Communicable disease</u> Identifying different pathogens and how they can cause and spread disease.</td><td><u>Homeostasis in action</u> Explaining the importance of thermoregulation. Outlining the role of the kidney and how dialysis and transplants work.</td></tr>
<tr><td><u>Reproduction</u> Comparing asexual and sexual reproduction. Outlining the structure of DNA, modes of inheritance and inherited disorders, specifically cystic fibrosis and polydactyly.</td></tr>
<tr><td><u>Preventing and treating disease</u> Understanding the function of the immune system. Describing how vaccination, painkillers and antibiotics work. Explaining how new drugs are trialled.</td><td><u>Variation and Evolution</u> Evaluating different types of gene technology and exploring ethical issues linked to them.</td></tr>
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