

Subject

Year 7

Autumn

Year: 7		Term: Autumn			
Subject	Topic	Key Knowledge	Links to prior learning	Wider curriculum connections	Knowledge booklet / Quizlet
Biology - Organisms	Movement	Levels of organisation, including cells, tissues and organs. The skeleton including main parts and functions The structure and function of joints and muscles	Basic structure and function of humans and animals including skeletons, muscles and some organ systems		Year 7 Organisms
	Cells	State and describe cells Use of a microscope Plant and animal cells, difference, similarities, structure and function Examples of specialised cells Movement of substances in and out of cells	Builds on ideas of what makes up plants and animals		Year 7 Organisms

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Spring

Year: 7		Term: Spring			
Subject	Topic	Key Knowledge	Links to prior learning	Wider curriculum connections	Knowledge booklet / Quizlet
Biology – Ecosystems and Genes	Interdependence	State and describe food chains and food webs Effect of pollutants on food chains and webs Factors that affect the population of a species Describe what an ecosystem is Competition by animals and plants for resources	Builds on knowledge of plants and animals including food chains, predators and prey, their habitats and the dangers posed to them if these change		Year 7 Ecosystems
	Plant Reproduction	Identify the main structures of a flower Describe the differences between wind and insect pollination Describe the process of fertilisation and germination	Build on knowledge of basic plant structure		Year 7 Ecosystems

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		Identify ways that seeds are dispersed			
	Variation	<p>State what variation is in a species</p> <p>Explain that variation can be genetic or environmental</p> <p>Explain how organisms adapt to environmental changes</p>	<p>Builds on knowledge that organisms can be grouped in a variety of ways. Use of classification keys to group, identify and name different living things</p>		Year 7 Genes and Reproduction

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Summer

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Biology - Genes	Human reproduction	Describe the changes to the body during puberty and adolescence	Builds on knowledge of the reproductive systems in plants and animals		Year 7 Genes and Reproduction
		Describe the main features of the reproductive systems in males and females			
		Describe how fertilisation occurs in humans			
		Describe the development cycle of babies in humans			
		Describe the menstrual cycle and methods of contraception			

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Year 8

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Subject	Topic	Key Knowledge	Links to prior learning	Wider curriculum connections	Knowledge booklet / Quizlet
Biology - Organisms	Breathing	<p>Describe how gases are exchanged in the body</p> <p>Describe the function of the lungs</p> <p>Explain the effects on the body of drugs, alcohol and smoking</p>	Builds on knowledge of basic organ systems		Year 8 Organisms
	Digestion	<p>Describe the components of a healthy diet</p> <p>Carry out and describe food tests for starch, lipid, sugars and proteins</p> <p>Describe the effects on our bodies of an unhealthy diet</p> <p>Describe how the digestive system works</p>	Builds on prior knowledge of healthy diets and lifestyles		Year 8 Organisms

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Biology - Ecosystems	Respiration	State and describe aerobic and anaerobic respiration Describe what biotechnology is and how it is applied to fermentation	Builds on knowledge of basic organ systems		Year 8 Ecosystems
	Photosynthesis	Describe how plants get the resources they need and how they make glucose Describe the structure and function of a leaf Investigate the factors that affect photosynthesis Describe the use of fertilisers	Build on knowledge of basic plant structure		Year 8 Ecosystems

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Subject	Topic	Key Knowledge	Links to prior learning	Wider curriculum connections	Knowledge booklet / Quizlet
Biology - Genes	Evolution	<p>Describe theory of natural selection</p> <p>Describe Darwin's ideas on natural selection</p> <p>Explain the factors that lead to extinction</p> <p>Describe what an endangered species is and the techniques used to preserve species</p>	Builds on knowledge that organisms can be grouped in a variety of ways. Use of classification keys to group, identify and name different living things		Year 8 Genes
	Inheritance	<p>Describe and explain how characteristic are inherited</p> <p>Describe the structure of DNA</p> <p>Describe the differences between dominant and</p>	Builds on knowledge of the reproductive systems in plants and animals and how characteristics are determined		Year 8 Genes

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		recessive alleles and how this gives us our characteristic			
		Explain the ideas behind genetic modification			

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Year 9

Autumn

Year: 9		Term: Autumn			
Subject	Topic	Key Knowledge	Links to prior learning	Wider curriculum connections	Knowledge booklet / Quizlet
Biology	B1 – Cell structure and transport	Components and use of the microscope Prokaryotic and eukaryotic cells Specialisation in plant and animal cells Diffusion, osmosis and active transport systems	Links to basic ideas of plant and animal structures and cells		B1 – Cell structure and transport
	B2 – Cell Division	Cell division by mitosis Cell growth and differentiation Stem cells and ethical considerations of their use	Links to KS3 studies on plant and animal cells		B2 - Cell Division
	B3 – Principles of organisation	Organisation of cells into tissues and organs	Links to KS3 work on organisation and the		B3 - Principles of Organisation

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		The human digestive system and its function	digestive system		
		Biological enzymes and factors affecting enzyme action			
		Use of food tests to identify food groups			

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Year 9

Spring

Year: 9		Term: Spring			
Subject	Topic	Key Knowledge	Links to prior learning	Wider curriculum connections	Knowledge booklet / Quizlet
Biology	B4 – Organising animals and Plants	<p>The role of the blood and the structure and function of the blood vessels</p> <p>Structure and function of the heart</p> <p>Breathing and gas exchange</p> <p>Tissues and organs in plants</p> <p>Transport systems in plants</p> <p>Evaporation and transpiration</p>	<p>Students have studied the digestive system as well as the function of the lungs and gas exchange.</p> <p>They will also have studied the structure of plants and their organs</p>		<p>B4 - Organising Animals and Plants</p>
	B5 – Communicable Diseases	<p>The role of pathogens in the spread of disease</p> <p>Bacteria, viruses, fungi and protists</p> <p>Preventing bacterial growth</p>			<p>B5 - Communicable Diseases</p>

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		Diseases caused by pathogens			
		Human defence response			
		Plant diseases and plant defence response			

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Biology	B6 – Preventing and treating disease	Describe the stages in vaccination Use and function of antibiotic and painkillers Developing drugs Production and use of monoclonal antibodies			B6 – Preventing and treating disease
	B7 – Non-communicable Diseases	Describe what non-communicable			B7 – Non-communicable Diseases

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		<p>e diseases are</p> <p>Cancer and it's treatment</p> <p>Smoking and the risk of disease</p> <p>The role of diet and exercise and links to disease</p> <p>Effect of alcohol and other carcinogens</p>			
	B8 - Photosynthesis	<p>Describe the function of photosynthesis</p> <p>Describe the factors affecting photosynthesis</p> <p>Uses of glucose in plants</p>	<p>Students will have studied photosynthesis at KS3 and its importance in plants</p>		B8 - Photosynthesis
	B9 - Respiration	<p>Aerobic respiration</p> <p>The response to exercise</p> <p>Anaerobic respiration</p> <p>Metabolism and the role of the liver</p>	<p>Students will have met the different types of respiration at KS3</p>	Sports studies	B9 - Respiration

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Year 10

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Subject	Topic	Key Knowledge	Links to prior learning	Wider curriculum connections	Knowledge booklet / Quizlet
Biology	B10 – The human Nervous System	Homeostasis – how the body controls temperature, water level, electrolytes Structure and function of the nervous system Reflex action Structure and function of the brain Structure and function of the eye			B10 - The Human Nervous System
	B11 – Hormonal Control	Control of blood glucose Treating diabetes Human reproduction Hormones and the reproductive system Artificial control of	Students will be aware of human reproduction from KS2 and 3, but will not have covered the role of hormones		B11 - Hormonal Control

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		<p>fertility</p> <p>Fertility treatment</p> <p>Use of plant hormones to control plant growth</p>			
	B14 – Variation and Evolution	<p>Explain how variation arises through natural selection</p> <p>Use of selective breeding</p> <p>Use of genetic engineering</p> <p>Cloning</p> <p>Ethics of genetic engineering</p>	Students have begun to study the ideas of evolution at KS3		B14 - Variation and Evolution
	B15 – Genetics and Evolution	<p>Theory of Evolution</p> <p>Evidence for Darwin's Ideas</p> <p>Evolution and speciation</p> <p>Fossils and extinction</p> <p>Evidence for evolution</p> <p>Classification systems</p>	Students have begun to study the ideas of evolution at KS3, and how living things are classified.		B15 – Genetics and Evolution

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Biology	B12 – Homeostasis in Action	Controlling body temperature and removing waste products Structure and function of the kidney Dialysis and kidney transplants	Links to prior topics in the nervous system and hormonal control		B12 – Homeostasis in Action
	B13 - Reproduction	Types of reproduction (sexual and asexual) Cell division in sexual reproduction DNA and the genome DNA structure and protein synthesis Genetic disorders	Links to reproduction topics at KS2 and KS3		B13 - Reproduction

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Subject	Topic	Key Knowledge	Links to prior learning	Wider curriculum connections	Knowledge booklet / Quizlet
Biology	B16 – Adaptations, Interdependence and Competition	Organisms and their environment Competition in animals and plants Adaptations in animals and plants	Links to prior learning in KS3 about plants and animals and their environment		B16 – Adaptations, Interdependence and Competition
	B17 – Organising an Ecosystem	Feeding relationships The Carbon Cycle Decomposition			B17 – Organising an Ecosystem

Subject

Year 11

Autumn

Year:		Term:			
Subject	Topic	Key Knowledge	Links to prior learning	Wider curriculum connections	Knowledge booklet / Quizlet
Biology	Bespoke revision				

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Spring

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Biology	Bespoke revision				

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Summer

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Biology	Bespoke revision				