Health and Lifestyle

Opportunities for Breadth and Challenge: Understanding the impact on human health of diet, exercise and various drugs			
Links to Sequencing for Learning: This unit links to previous work on cellular respiration covered in Y7 unit 1 and organ systems in Y7 unit 2 This unit prepares pupils for work in			
Section	What we are learning (Key knowledge)	Key words	Assessment
1	**Diet and Health:** • To describe the jobs of different nutrients in the body. • To give examples of foods that are high in each nutrient. • To explain why we need a balanced range of nutrients	Nutrient, Carbohydrate Protein, Fat Vitamins and minerals Fibre	Prior knowledge – students likely to have looked at the 'Eat Well Plate' in food technology
2	**Understanding Nutrition Labels** • To be able to use and interpret nutrition information on food packaging.	Nutritional information Carbohydrate, Protein Fat Vitamins and minerals Fibre	Identifying correct information Analysing and comparing foods
3	**Food Tests** • Describe the scientific tests for glucose, fat, starch and protein	Glucose, fat, starch and protein, Benedict's Ethanol, Iodine Buirette's	Practical skills
4	**Measuring the energy content of foods** • To be able to use a scientific method to measure the energy content of different foods • To plan a scientific investigation	Independent, dependent, control variable	MUM: Practical planning sheet – planning of equipment, prediction, safety hazards
5	**Measuring the energy content of foods** • To be able to use a scientific method to measure the energy content of different foods To plan a scientific investigation	Kilocalorie, Kilojoule Joule, Thermometer Temperature	MUM: Practical planning sheet – collecting results, analydid and writing conclusions
6	**Digestive System** • To describe the structure and function of the digestive system. • To describe the process of digestion	Digestion, Absorption, Villi, Peristalsis,	Recalling names of organs and organ system
7	**Bacteria and Enzymes in the digestive system** • To describe the role in enzyme digestion. • To describe the role of bacteria in digestion.	Enzymes, Bacteria, Catalysts, Carbohydrase Amylase, Lipase	Practical skills
8	**Drugs** • To describe the difference between recreational and medicinal drugs.	Medicinal, Recreational, Addition, Withdrawal.	

	• To describe the effects of drugs on health and behaviour.		
9	**Alcohol** • To describe the effects of alcohol on health and behaviour. • To describe the effects alcohol has on conception and pregnancy.	Ethanol, Depressant, Conception, Miscarriage, Cirrhosis.	
10	**Smoking** • To describe the effects of tobacco smoke on health. • To describe the effects of tobacco smoke on pregnancy.	Passive smoking, stimulant, Emphysema	Analysis effects on the body
11	Unit Review		Class assessment sheet
12	End of Unit Assessment		EUT
13	Feedback		Test feedback sheet

Ecosystem Processes

Opportunities for Breadth and Challenge: Pupils should gain an understanding of how key processes in the natural world link together			
Links to Sequencing for Learning: This unit links to previous work on ecosystems done in KS2 and helps to prepare them for further work on ecosystems. This unit prepares pupils for work at GCSE where pupils learn in greater depth about key processes including photosynthesis and respiration.			
Section	What we are learning (Key knowledge)	Key words	Assessment
1	**Photosynthesis** • Describe the process of photosynthesis • State the word equation for photosynthesis • Describe how to test a leaf for the presence of starch	Chloroplast Chlorophyll Iodine	Prior knowledge of plant cell structure
2	**Leaf structure** • To know the layers that make up the leaf structure • To describe the role of stomata in gas exchange.	Iodine Glucose starch	Retrieval Qs of keywords
3	**Plant minerals** • Name some minerals needed by plants • Be able to describe how a plant uses minerals for healthy growth • Explain the role of nitrates in plant growth	Nutrient Nitrate Deficiency Fertiliser	Homework: independent research for poster on plant fertilisers
4	**Chemosynthesis** • Describe where chemosynthesis takes place. • Describe how the process works • Discover how knowledge of this has changed over time	Chemosynthesis Hydro-thermal vent	
5	**Aerobic respiration** • To know what aerobic respiration is and why its essential to life. • To know the chemical reaction for respiration.	Glucose Energy Energy transfer	Carry out practical investigation into respiration
6	**Anaerobic respiration** • State the word equation for anaerobic respiration. • Describe the differences between aerobic and anaerobic respiration.	Glucose Lactic acid Muscle fatigue	Carry out practical investigation into anaerobic respiration MUM – Compare aerobic and anaerobic respiration
7	**Food chains** • Describe what food chains show • Describe what food webs show • Linking food chains and food webs to energy transfers	Producer Consumer, Herbivore, Carnivore Energy transfer	
8	**Disruption to food chains** • Describe how toxic chemicals pass up a food chain	Bioaccumulation	

9	**Measuring Ecosystems** • To describe how different organisms co-exist within an ecosystem. • To know some sampling techniques	Ecosystem Quadrat Sampling Pooter	
10	Revision		Class assessment sheet
11	End of Unit Test		EUT
12	Test Feedback		Test feedback sheet

Adaptation and Inheritance

Opportunities for Breadth and Challenge: Pupils should gain an understanding of the fundamentals of Natural Selection and Genetics			
Links to Sequencing for Learning: This unit links to previous work on ecosystems done in KS3 on cell biology and ecosystems and helps to prepare them for further work on genetics in KS4. This unit prepares pupils for work at GCSE where pupils learn in greater depth about natural selection, Darwin's theory, classification and genetics.			
Section	What we are learning (Key knowledge)	Key words	Assessment
1	**Competition and Adaptations** • Describe some resources that plants and animals compete for. • Describe how organisms are adapted to their environments.	Competition Adaptation	Prior knowledge – assess understanding of what they key words mean in this context, Identify key adaptations of examples provided in lesson.
2	**Adapting to Change** • Describe how organisms adapt to environmental changes. • Describe how competition can lead to adaptation. • Identify trends in predator–prey relationships.		Retrieval Qs of keywords Identify key information in an article about Polar bears. Analyse data in a predator / prey graph.
3	**Variation** • Describe how variation in species occurs. • To be able to explain the difference between genetic and environmental variation.	Nucleus Chromosome DNA, Genetic variation Environmental variation	Identify types of variation Collect data from a class survey
4	**Continuous and Discontinuous Variation** • Describe the difference between continuous and discontinuous variation. • Represent variation within a species using graphs. • Record results in a table and plot a histogram.	Continuous Discontinuous Histogram Frequency	Assess prior graph knowledge with a 'spot the mistakes' starter. Data handling – produce frequency graphs of continuous and discontinuous data collected in previous lesson.
5	**DNA and Inheritance** • Describe the structure of DNA. • Describe how scientists worked together to develop the DNA model.	Double helix, Collaboration,Watson, Crick, Franklin, Wilkins,X-ray crystallography	Pupils analyse the contributions made by W,C,F,W in discovering the DNA double helix
6	**Natural Selection** • Describe the process of natural selection. • Describe how organisms evolve over time. • Create an evolutionary family tree, giving justification for the route chosen in the tree.	Charles Darwin Competition Natural Selection Evolution Adaptation	
7	**Extinction** • Describe some factors that may lead to extinction.	Gene bank Extinction	MUM – Research an extinct or endangered species.

	• Describe the purpose of gene banks. • Interpret evidence provided in scientific texts to explain the most likely theory for dinosaur extinction. • Fossil formation.		
8	Revision		Class assessment sheet
9	End of Unit Test		EUT
10	Test Feedback		Test feedback sheet