Curriculum Rationale and Overview

Subject: Biology **Year group: 8**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
National Curriculum context	Chemistry and Physics content taught in this term	Chemistry and Physics content taught in this term	The effects of recreational drugs (including substance misuse) on behaviour, health and life processes The contents of a healthy human diet and why each is needed The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases The tissues and organs of the human digestive system.	Heredity as the process by which genetic information is transmitted from one generation to the next. Differences between species and the variation between individuals within a species. The variation between species and between individuals of the same species meaning some organisms compete more successfully, which can drive natural selection Changes in the environment which may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction	Chemistry content is taught in this term	The interdependence of organisms in an ecosystem, including food webs and insect pollinated crops. The importance of plant reproduction through insect pollination in human food security. How organisms affect, and are affected by, their environment, including the accumulation of toxic materials. The reactants in, and products of, photosynthesis Aerobic and anaerobic respiration in living organisms, including the breakdown of organic molecules to enable all the other chemical processes necessary for life
Scheme of Learning Title:			Health: Health and Lifestyle	Genetics and Natural Selection: Adaptation and Inheritance		Plants and Ecosystems: Ecosystem Processes

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Content *What will students know?*			The components of a healthy diet. The tests that would need to be used to identify different food groups. How lifestyle can affect daily energy intake. Explain the importance of the digestive system. The impact of different drugs on the body.	How different organisms are adapted for survival. Defining and using examples to represent the term adaptation. How characteristics are inherited by offspring. The process of evolution and the impact on organisms. Why some organisms become extinct.		The importance of photosynthesis in the food chain. The difference and similarities between aerobic and anaerobic respiration. The relationship between organisms in a food chain/web.
What will students understand?			Drugs can be beneficial or damaging to health. A healthy diet consists of all of the food groups in different amounts Enzymes in the body are used to break down different food into smaller molecules before they can be absorbed into the body.	Animals and plants compete for food, water, shelter, space, mates. Genetics are passed on from parents to offspring. Animals and plants both have adapted over time to enable the 'survival of the fittest'. This could lead to extinction of species if not adapted. Variation between species due to biological/environmental factors and can be classified as continuous and discontinuous.		Plants produce glucose during photosynthesis. This can be tested using a starch test. The leaves are adapted to photosynthesise by the presence of stomata and chloroplast. How toxic materials are passed through food webs.
What will students be able to do?			Test for different food groups Explain the process of digestion through the digestive system from ingestion to excretion.	Display continuous and discontinuous data in suitable graphs.		Test for starch on leaves The process of fermentation with yeast. Construct a food web

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How will they be formally assessed?			End of topic and term tests to include Explain the effect of malnutrition, alcohol, some illegal drugs and smoking can have on the human body.	End of topic and term tests to include: Describe the general structure of DNA. Explain how some organisms are adapted to their location or habitat and how variation in organisms can lead to some surviving and others not.		End of topic and term tests to include: Describe the process of photosynthesis using word equations. Describe food chains and webs the importance of interdependence.