Nobel

Year: 8

Subject: Biology

Vision **The purpose of KS3 is to embed the building blocks of scientific knowledge and enquiry, and to inspire a sense of wonder and awe at the world around us.**

Year 8 starts by looking at the digestive system building on the work done on body systems in year 7. It introduces the idea that lifestyle can affect this body system, (diet and recreational and illegal drugs, and how these can affect the foetus through the placenta) The curriculum moves on to consider how organisms affect and are affected by the environment, looking at variation, inheritance, evolution and extinction. Finally exploring biochemical processes of photosynthesis and respiration and their role in transferring energy within ecosystems and the environment.

As well the assessments detailed below there will be 2 cumulative tests which will include Biology, Chemistry and Physics topics and an end of year exam.

	Foci	Assessment	Knowledge Organiser
Unit 1	• **Health and Lifestyle** The tissues and organs of the human digestive system, including adaptations to function and how the digestive system digests food (enzymes simply as biological catalysts).Content of a healthy human diet. Practical work to include simple food tests for starch, simple (reducing) sugars, protein, and lipids The consequences of imbalances in the diet, including obesity, starvation, and deficiency diseases. The effects of 'recreational' drugs (including substance misuse) on behaviour, health, and life processes. - The effect of maternal lifestyle on the fetus through the placenta	Formative assessments throughout the topic including multiple choice questions, extended writing, and practical work End of topic Test	**Healthy Lifestyle**
Unit 2	• **Adaptation and Inheritance** How organisms affect, and are affected by, the environment. Differences between species that can drive adaptation, competition, natural selection and extinction. An introduction to heredity, a simple model of chromosomes, genes, and DNA in heredity, including the part played by Watson, Crick, Wilkins, and Franklin in the development of the DNA model. Practical work to collect data and present observations and data using appropriate methods, including tables and graphs.	Formative assessments throughout the topic including multiple choice questions, extended writing, and practical work End of topic Test	**Adaptation and Inheritance**
Unit 3	• **Ecosystems** The interdependence of organisms in an ecosystem, including food webs and insect pollinated crops. The process of photosynthesis and the adaptations of leaves for photosynthesis. The processes of respiration and anaerobic respiration (including fermentation). The roles of these processes in building organic molecules that are an essential form of energy.	Formative assessments throughout the topic including multiple choice questions, extended writing, and practical work End of topic Test	**Ecosystems**