

Curriculum Description – Science

The pupils at GCSE level follow the AQA Human Health and Physiology GCSE topic. This enables students to learn about how the human body works, the structures that make it work and how to keep it healthy. The course has been designed to give it a more practical approach: students learn about some of the science used by health professionals working in health and medical care.

The topics covered are;

Nutrition.....	Muscles, bones and movement
Digestion.....	Human reproduction and birth
Cells.....	Human growth and development
Special Cells.....	Inheritance and genetic engineering
Cell Processes (diffusion and Osmosis).....	Pathogens and defence against disease
Tissues and Organs.....	The Immune System
Blood and the circulation system.....	Cancer and other diseases
The respiratory system.....	Twenty first century health
Gas Exchange and Excretion.....	The controlled assessment.

The pupils are given many opportunities to carry out practical investigations. There is a science lab in school which enables them to carry out investigations such as looking how substances diffuse through a semi permeable membrane and using a microscope to see blood cells and organ tissue. An example of a recent experiment into diffusion was when we looked used agar plates and food colouring a measured the time it took for them to diffuse into each other.

The pupils working at key stage three level follow the Nelson Thorne's Scheme of Work in Science (biology only at the moment) called Fusion. This provides them with a good baseline opportunity to prepare them for their GCSE in Human Health and develops the same principles as the AQA. Students build deeper knowledge of the life processes through Key Stages 1-3 as they cover topics such as; excretion, respiration, nutrition, sensitivity, growth, movement, and reproduction within a human health context.

Fusion gives students various practical assessments and investigations to work on and allows them to develop their scientific skills. In the key stage three topics we also cover the theme of plants and animals and focus closely on plant reproductions, plant cells and growth as well as photosynthesis and adaptation. There is a science lab in school which enables them to carry out investigations such as looking at how starch in produce in a leaf during photosynthesis.

The pupils enjoy all levels of practical work and is also develops their skills in numeracy as well. They are also given the opportunity to visit off site educational facilities when they interact with other scientific resources, for example the investigations in to bacterial evolution which took part in at TechniQuest.