



Hallmoor Key Stage 4 Science Long Term Plan

Entry Level Certificates (ELCs) are nationally recognised qualifications which give students the opportunity to achieve a certificated award. The assessment is on demand so students can complete assignments when they are ready, helping to keep them motivated.

This qualification is linear. Linear means that students submit all components that form the assessment at the end of the course. Two Entry Level Certificate Science qualifications are available:

- Entry Level Certificate (Single Award) – 3 components
- Entry Level Certificate (Double Award) – 6 components

Students will be entered for either ELC Science – Single Award or ELC Science – Double Award. Students will submit a portfolio of work containing the appropriate number of Externally-set assignments (ESAs) and Teacher-devised assignments (TDAs). There are three levels of award available: Entry 1, Entry 2 and Entry 3. Entry 3 is the most demanding.

The specification comprises six components. Each component has two assessments: one externally set and one internally set. The six components meet the Programme of Study Key Stage 4 requirements.

Pathway 3/Semi-Formal students will achieve their qualification through AQA Unit Award Scheme (UAS), the units will be selected so they are relevant to the topic and the skills that are being focused upon. This will give them the opportunity to be able to move to ELC if they are able to.

	Components are taught across the year for ELC. The 10 outcomes for each component are delivered, followed by revision, ESA and then TDA. UAS are delivered 1 component per term.		
	Biology	Chemistry	Physics
Year 1	<p>Component 1</p> <p>The human body is composed of structures called organs, which are organised into organ systems that carry out all of the key processes of life. These systems all require energy, which is contained in food and released in the cell by respiration. The organ systems are responsible for delivering food and oxygen to the cells and taking away waste. All these key processes, including reproduction, are coordinated by the nervous system and a hormone system. A healthy body can be maintained by a balanced diet, exercise and a healthy lifestyle. Health can be damaged by microbes, which can cause infectious diseases. The body can defend itself against most diseases but will sometimes need drugs in order to alleviate the symptoms and speed recovery.</p>	<p>Component 3</p> <p>Matter is composed of tiny particles called atoms and there are about 100 naturally occurring types of atoms called elements. Elements are shown in the periodic table and are either metals or non-metals. Atoms are the building blocks for all substances. When two or more elements combine chemically a compound is produced. Different substances have different combinations of atoms joined together in different ways, which gives them different properties, such as whether they are solid, liquid or gaseous at room temperature. Many materials we use are mixtures. Mixtures can be separated by processes such as filtration. Polymers have many useful applications.</p>	<p>Component 5</p> <p>Forces are pushes or pulls, and if a force causes an object to move then work is done and energy is transferred. Energy can be transferred usefully, stored or dissipated, but cannot be created or destroyed. A braking force will cause an energy transfer that makes a vehicle slow down and heats the brakes. The braking distance of a vehicle depends on many different things, such as the speed of the vehicle. The energy resources available to use may be divided into renewable and non-renewable. Energy can also be released from atoms, which contain smaller particles such as neutrons and protons in the nucleus, because atoms can break down to emit particles or gamma rays.</p>
Year 2	<p>Component 2</p> <p>Life on Earth is dependent on photosynthesis to fix carbon dioxide and produce the organic molecules used as the fuels for respiration and life processes. Living organisms interact with one another and their environment in many different ways. Human behaviours may have beneficial or detrimental effects on natural populations and the environment. The</p>	<p>Component 4</p> <p>Acids react with metals, alkalis and bases to produce compounds known as salts. Many chemical reactions produce a change in temperature. Chemical reactions can be made to go faster or slower by changing the conditions. The Earth's atmosphere has changed over billions of years. Human activities increase the amounts of some substances in the atmosphere. Water that is safe to drink is essential for human health.</p>	<p>Component 6</p> <p>Electricity is used in domestic and industrial situations to supply energy. Electric current is a flow of electrical charge and measured in amps. Direct current (d.c.) is supplied by cells and alternating current (a.c.) is supplied by the mains, but in both cases the size of the current depends on the resistance in the circuit. When a current flows through a coil</p>

	<p>chemicals in the environment are continually cycling through the natural world. Life on Earth has evolved over time by natural selection, which accounts for biodiversity and how organisms are related. The characteristics of living things depend on both their environment and their genome. Humans can now use genetic engineering to modify organisms.</p>		<p>of wire an electromagnet is formed, which like permanent magnets, can exert a force over a distance. Electric currents can also be used to produce electromagnetic waves, which have many uses including the transmission of information and the transfer of energy from one place to another.</p>
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