

 **Key Stage 4**

 **AQA Science Double Award with GCSE extension**

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|  | **Autumn term** |  |  | **Spring term** |  |  | **Summer term** |
| **Year 10** | **Component 1: the Human Body****Key knowledge:*** Understanding how the body is organised
* Exploring how the body’s processes are co-ordinated
* Looking at how health and disease can impact our body

**Additional GCSE content:**Refer to MTP(AQA-5960-Co-teach-B part 1)**Suggested ELC TDA:** Investigating which food (biscuits or crisps) contain the most energy.**Required practical activities for GCSE:****1:** Using a microscope to observe, draw and label a selection of plant and animal cells **3:** Use qualitative reagents to test for a range of carbohydrate, lipids and proteins**4:** Investigate the effect of pH on the rate of reaction of amylase enzyme. **6**: Plan and carry out an investigation into the effect of a factor on human reaction time. *Additional opportunities for ELC / GCSE practical development and required practicals are included within the medium-term planning**Where practicable some elements of this topic will be taught at the end of KS3 at the point that all KS3 knowledge is secure* |  | **Year 10** | **Component 3: Elements, mixtures & compounds****Key elements of the module:*** Understanding that everything in the Universe is made of atoms.
* Know that mixtures contain two or more elements and that these can be separated.
* Understand that compounds are formed when two or more elements are joined by chemical bonds.

**Additional GCSE content:**Refer to MTP(AQA-5960-Co-teach-C part 1)**Suggested ELC TDA**: Investigating the different colours in food colouring using paper chromatography**Required practical activities for GCSE:****12:** Investigate how paper chromatography can be used to separate and tell *Additional opportunities for ELC / GCSE practical development and required practicals are included within the medium-term planning* |  | **Year 10** | **Component 5: Energy, forces & the structure of matter.****Key elements of the module:*** Understanding the principles behind energy stores and transfers
* Exploring how forces impact our everyday lives and the principle of work
* Looking at how nuclear radiation is produced

**Additional GCSE content:**Refer to MTP(AQA-5960-Co-teach-P part 1)**Suggested ELC TDA:** Investigating which material keeps my cup of tea the hottest the longest.**Required practical activities for GCSE:****14**: an investigation to determine the specific heat capacity of one or more materials **18**: Investigate the relationship between force and extension for a spring. *Additional opportunities for ELC / GCSE practical development and required practicals are included within the medium-term planning* |

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|  | **Autumn term** |  |  | **Spring term** |  |  | **Summer term** |
| **Year 11** | **Component 2: Environment, evolution & inheritance.****Key elements of the module:*** Understanding the processes involved in photosynthesis
* Exploring interaction between organisms
* Considering how natural selection has led to the variety of life on Earth

**Additional GCSE content:**Refer to MTP(AQA-5960-Co-teach-B part 2)**Suggested ELC TDA**: Investigating the conditions in which bread goes mouldy**Required practical activities for GCSE:****5:** Investigate the effect of light intensity on the rate of photosynthesis using an aquatic organism such as pondweed. **7:** Measure the population size of a common species in a habitat. **9:** Measure the population size of a common species in a habitat. **13:** Analysis and purification of water samples from different sources *Additional opportunities for ELC / GCSE practical development and required practicals are included within the medium-term planning* |  | **Year 11** | **Component 4: Chemistry in our world****Key elements of the module:*** Understanding the reactions of acids
* Investigating energy transfers in chemical reactions and rated of reactions
* Exploring the structure of the Earth’s atmosphere

**Additional GCSE content:**Refer to MTP(AQA-5960-Co-teach-C part 2)**Suggested ELC TDA:** Investigating variables that affect the rate of reaction.**Required practical activities for GCSE:****8:** Preparation of a pure, dry sample or a soluble salt from an insoluble oxide or carbonate **10:** Investigate the variables that affect temperature changes in reacting solutions **11:** Investigate how changes in concentration affect the rates of reactions **13:** analysis and purification of water samples from different sources *Additional opportunities for ELC / GCSE practical development and required practicals are included within the medium-term planning* |  | **Year 11** | **Component 6: Electricity, magnetism & waves****Key elements of the module:*** Understanding electric current as a flow of electric charge
* Investigating magnets and electromagnets
* Exploring transverse and longitudinal waves including electromagnetic waves

**Additional GCSE content:**Refer to MTP(AQA-5960-Co-teach-P part 2)**Suggested ELC TDA:** Investigating the range over which a Bluetooth device is effective.**Required practical activities for GCSE:****15:** Use circuit diagrams to set up and check appropriate circuits to investigate the factors affecting the resistance of electrical circuits. **16:** Use circuit diagrams to construct appropriate circuits to investigate the I-V characteristics of a variety of circuit elements **20:** Make observations to identify the suitability of apparatus to measure the frequency, wavelength and speed of waves in a ripple tank and waves in a solid **21:** Investigate how the amount of infrared radiation absorbed or radiated by a surface depends on the nature of that surface. *Additional opportunities for ELC / GCSE practical development and required practicals are included within the medium-term planning* |