

**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 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* |  | **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* |