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| **Year 7 - Science** |
| **Curriculum intent** | In year 7 learners will begin to develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. They will start to develop an understanding of the nature, processes and methods of science through different types of scientific enquiries that help them to answer scientific questions about the world around them. Through this learners will lay the foundations needed to become equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future. |
| **Term** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Knowledge** | **Cells-**Learners will use a range of investigative techniques to understand how organisms rely on cells to carry out life processes.**Particles:** Learners will use a range of investigativetechniques to understand how solids, liquids and gases behave and how they change state.  | **Forces -** Learners will be able to describe how materials behave in special ways when forces such as tension and compression are applied**.****Reproduction**-Learners will look at the main reproductive organs and their function, what happens during puberty, menstruation and pregnancy. | **Atoms, Elements & Compounds -** Learners will learn about elements, atoms and compounds, their position in the periodic table and the differences between metals and non-metals.**Space** - Learners will understand how forces make things change: their speed, direction and/or shape of an object. Learners will also understand how the Earth fits into the solar system and the magnitude of the universe. | **Interdependence -**Learners will learn about feeding relationships within a community of organisms.**Mixtures**- Learners will look at what a pure substance is and how to identify them. They will also learn what a mixture is and the different methods used to separate them.. | **Energy Transfers-**Learners will understand the value of energy, how it is transferred between objects and can be used in physical processes and mechanisms. | **Electrical circuits -** Learners will learn the symbols and function of the various circuit components, and use a range of investigative techniques to understand how voltage and current varies in circuits.  |
| **Skills** | **The following skills will be developed throughout the whole of year 7 and will enable learners to build a deep understanding of science:** **Scientific attitudes:** pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility understand that scientific methods and theories develop as earlier explanations aremodified to take account of new evidence and ideas, together with the importance of publishing results and peer review evaluate risks.**Experimental skills and investigations:** ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience make predictions using scientific knowledge and understanding select, plan and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent and control variables, where appropriate use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements apply sampling techniques.**Analysis and evaluation:** apply mathematical concepts and calculate results present observations and data using appropriate methods, including tables and graphs interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions present reasoned explanations, including explaining data in relation to predictions and hypotheses evaluate data, showing awareness of potential sources of random and systematic error identify further questions arising from their results. **Measurement:** understand and use SI units and IUPAC (International Union of Pure and AppliedChemistry) chemical nomenclature use and derive simple equations and carry out appropriate calculations undertake basic data analysis including simple statistical techniques. |
| **Assessments** | End of half term test & HFL’S | End of half term test & HFL’S | End of half term test & HFL’S | End of half term test & HFL’S | End of half term test & HFL’S | End of half term test & HFL’S |
| **Enrichment** | Trip to Science and Industry Museum Lab Rats |