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| **Long Term Plan** | In Y7 students are exposed to the fundamental science that unpins the ambitious knowledge taught in subsequent years. Students become familiar with the idea of a scientific model and will build their practical ability in what will be their first experience of a lab setting. |
| **Learning Cycle** | **Key Concepts and Themes** | **Vocabulary** |
| **Year 7: Science** | **HT1** | Cells | * Observing cells.
* Specialised cells.
* Movement of substances in cells and unicellular organisms.
 | Cell​, Magnification​, Specialised cell​, Diffusion,Unicellular, Multicellular |
| Particles and their behaviour | * The particle model.
* States of matter.
* Changing state.
 | Particle, Atom​, Properties​, Mixture, Density, Evaporation, Sublimation, Condensing |
| **HT2** | Forces | * Describing forces.
* Friction.
* Balanced and unbalanced forces.
 | Gravity, Air resistance, Friction, Magnetic force, Weight, Balanced, Unbalanced |
| Structure and function of body systems | * Levels of organisation.
* Gas exchange and breathing.
* The skeleton, joints and muscles.
 | Organ system, Gas exchange​, Inhale, Exhale, lung volume, Bone marrow, Joint, ligaments |
| **HT3** | Elements, atoms and compounds | * Defining an element, an atom, and a compound.
* The periodic table and chemical symbols.
* Chemical formulae and relative number.
 | Atom, Compound​, Molecule​, Periodic table, State of matter, Chemical formula |
| **HT4** | Sound | * Waves, sound, loudness and pitch.
* Detecting sound.
* Echoes and ultrasound.
 | Amplitude, Frequency, Wavelength, Peak, Trough, Pitch, Echo, Ultrasound |
| Light  | * What happens to light as it travels?
* The laws of reflection and refraction.
* Seeing colour.
 | Luminous, Transparent, Translucent, Opaque, Reflection, Refraction, Spectrum |
| **HT5** | Reproduction | * Adolescence and the menstrual cycle.
* Fertilisation and development of a foetus.
* Flowers, pollination, seed dispersal and germination.
 | Adolescence, Fertilisation, Gametes, Gestation, Contraception, Pollination, Germination |
| Reactions | * Chemical reactions, including word and symbol equations.
* Conservation of mass.
* Exothermic and endothermic reactions.
 | Physical changes, Chemical changes, Reactants, Products, Oxidation, Combustion, Decomposition, Exothermic, Endothermic |
| **HT6** | Space | * The Solar System.
* The Earth’s movements in space causing: Day and night, years and seasons.
* The phases of the moon.
 | Universe, Galaxy, Satellite, Orbit, Asteroid, Hemisphere, Axis, Eclipse,  |
|  | Acids and Alkalis  | * Understanding acids and alkalis.
* The pH scale and neutralisation.
* Making salts.
 | Acid, Alkali, Base, Indicator, The pH scale, Neutralisation, A salt |
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|  |  | **Skill Development** | * To decide whether or not given data supports a specific theory.
* To be able to carry out a practical activity, following instructions regarding safety.
* To be able to use scientific equipment correctly.
* To understand the importance of using models in science.
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