Swanwick Hall School Long Term Planning

Year 9 Science

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| Learning cycle | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 |
| 1  5/9/22 – 21/10/22  9LC1  Magnets and Static Electricity | **Static Electricity**  Generating static charge (VdG generator), uses and dangers of static charge, electric fields | **Magnetic fields**  Interaction of fields around permanent magnets, plotting magnetic fields, magnetic field around a current carrying wire | **Magnetic fields and Electromagnet**  Earth’s magnetic field, compasses and navigation, Electromagnets, Investigating the factors that affect the strength of an electromagnet | **Motor effect**  Force on a wire in a magnetic field, Fleming’s Left Hand Rule, D.C. motors | **Magnets and Static Electricity Review**  Revision using 100% sheets | ***checkpoint week***  Checkpoint | ***gap week***  Address and reteach concepts in response to checkpoint |  |
| 2  31/10/22- 22/12/22  9LC2  Chemical formulae and acids and salts | **Formulae and writing equations**  Formulae and writing equations | **More writing equations**  Balancing equations and state symbols | **Acids, alkalis and bases**  What is an acid and alkali?  What is a base?  pH | **Indicators. Alkalis and neutralisation**  Different types of indicator  Naming salts  Making a salt by DFEC | **Making salts**  Making a salt by TREC  Solubility and solubility rules | **Formulae and acids consolidation**  Writing equations, making salts | ***checkpoint week***  Revision with 100% sheets  Checkpoint | ***gap week***  Address and reteach concepts in response to checkpoint |
| 3  9/1/23 -  3/3/23  9LC 3  Enzymes and Biology Transition | **Enzymes**  Enzyme action  Factors affecting Enzymes  Digestion | **Enzymes**  Enzymes of digestion  Investigating the effect of temperature practical (2 lessons) | **Biology transition**  Plant and Animal Cells  Bacterial Cells  Specialised cells  Movement in and out of cells | **Biology Transition**  Microscopes  Calculating Magnification | **Biology transition**  Skills for microscopes  Biological specimens | ***checkpoint week*** | ***gap week*** |  |
| 4  6/3/23 – 12/5/23  9LC4 – Waves and EM Spectrum | **Waves and Sound**  Types and properties of waves, Sound and energy transfer (including speed of sound in air), detecting sound | **Investigating waves**  Wave speed, investigating waves in solids, investigating waves in liquids | **Waves and Light**  Refraction, investigating refraction, reflection, refraction and TIR | **Visible light**  Colour and prisms, lenses, pinhole camera | **EM Spectrum**  EM Spectrum uses, EM Spectrum dangers, Beyond the visible (IR and UV). | **Waves and EM Spectrum review**  Wave speed calculations consolidation  Revision using 100% sheets | ***checkpoint week***  Checkpoint  Literacy activity | ***gap week***  Address and reteach concepts in response to checkpoint |
| 5  15/5/23 – 3/7/23  9LC5 Separating techniques and structure of the atom | **Mixtures**  What is a mixture  Changes of state  Pure and impure  Heating and cool curves | **Separating techniques**  Filtration and crystallisation  Chromatography | **More separating techniques**  Distillation  Fractional distillation  Making potable water | **Structure of the atom**  Structure of the atom  Atomic number and mass number  Isotopes | **Structure of the atom**  Mendeleev’s periodic table  Trends in the periodic table  Electron configuration | ***checkpoint week***  Revision with 100% sheets  Checkpoint | ***gap week***  Address and reteach concepts in response to checkpoint |  |
| mini unit  10/7/23 – 21/7/23 | **Forensics**  Chromatography  Hair and fibres (microscopes) florescence AND UV | **Forensics**  Urine analysis  Blood splatter analysis  Identifying skeletal remains |  |  |  |  |  |  |