

Year 7	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge	<p>Biology: Cells</p> <ul style="list-style-type: none"> Observing cells in a Microscope Plant & animal cells Magnification Unicellular organisms <ol style="list-style-type: none"> Bacteria Yeast Diffusion Specialised cells <p>Chemistry: Particle model</p> <ul style="list-style-type: none"> The simple particle model States of matter Changes of State Gas pressure 	<p>Biology: Cells</p> <ul style="list-style-type: none"> Diffusion Specialised cells <ol style="list-style-type: none"> Red blood cells Muscle cells Root hair cells Palisade cells <p>Chemistry: Atoms, Elements and Compounds</p> <ul style="list-style-type: none"> The atomic model Symbols and formulae Elements and compounds 	<p>Physics: Energy</p> <ul style="list-style-type: none"> Fuels and energy stores Energy stores and transfers Power Energy resources <p>Biology: Biomechanics</p> <ul style="list-style-type: none"> Skeleton Movement: joints Movement: muscles Principles of organisation 	<p>Physics: Speed</p> <ul style="list-style-type: none"> Speed Distance- time graphs Relative motion <p>Chemistry: Pure and impure substances</p> <ul style="list-style-type: none"> Diffusion Pure and impure substances Separation <ol style="list-style-type: none"> Filtration Evaporation Distillation Chromatography 	<p>Physics: Forces</p> <ul style="list-style-type: none"> Basic forces and diagrams Naming and categorising forces Stretching and squashing forces Hooke's law Work done Moments and simple machines <p>Maths for Science</p> <ul style="list-style-type: none"> Using equations and EVERY Graphical analysis 	<p>Physics: Forces</p> <ul style="list-style-type: none"> Balanced forces Forces and motion Newton's Laws <p>Physics: Space</p> <ul style="list-style-type: none"> Stars, planets and galaxies The seasons Weight <p>Working Scientifically</p> <ul style="list-style-type: none"> Hypothesis Method Graphical skills Analysis Evaluation
Core Practical	<p>Observing cells, Heating water</p> <ul style="list-style-type: none"> Microscope use Biological drawing Calculating magnification Safely using equipment 	<p>Investigating the properties of elements and compounds</p> <ul style="list-style-type: none"> Writing a hypothesis Planning and carrying out an experiment 	<p>Testing muscle strength</p> <ul style="list-style-type: none"> Recording accurate results Plotting graphs 	<p>Investigating chromatography</p> <ul style="list-style-type: none"> Writing a hypothesis Planning and carrying out an experiment Recording accurate results 	<p>Extension of a spring, Measuring speed, Balanced moments</p> <ul style="list-style-type: none"> Planning and carrying out an experiment Types of error Planning to reduce error Recording accurate results 	
Learning Link	<p>Movement and Cells https://www.bbc.co.uk/bitesize/topics/znyycdm</p> <p>Particle Theory https://www.bbc.co.uk/bitesize/topics/z9r4jxs</p>	<p>Movement and Cells https://www.bbc.co.uk/bitesize/topics/znyycdm</p> <p>Atoms, Elements & Compounds https://www.bbc.co.uk/bitesize/topics/zstp34j</p>	<p>Energy https://www.bbc.co.uk/bitesize/topics/zc3g87h</p> <p>Biomechanics https://www.bbc.co.uk/bitesize/topics/znyycdm</p>	<p>Speed https://www.bbc.co.uk/bitesize/topics/z4brd2p</p> <p>Pure and impure substances https://www.bbc.co.uk/bitesize/topics/zych6g8</p>	<p>Forces https://www.bbc.co.uk/bitesize/topics/z4brd2p</p> <p>Maths for Science https://www.bbc.co.uk/bitesize/topics/z83rkqt/articles/zhbtng8#z27hfdm</p>	<p>Forces https://www.bbc.co.uk/bitesize/topics/z4brd2p</p> <p>Space https://www.bbc.co.uk/bitesize/topics/z8c9q6f</p>

Year 8	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge	<p>Biology: Nutrition and digestion</p> <ul style="list-style-type: none"> Healthy diet, energy requirements and dietary imbalance Digestive organs Gut bacteria <p>Chemistry: Chemical Reactions</p> <ul style="list-style-type: none"> Reactions, conventions and reaction signs Combustion, thermal decomposition, oxidation and displacement Conservation of mass Acids, alkalis and pH Reactions of acids with metals and alkalis 	<p>Biology: Gas exchange systems</p> <ul style="list-style-type: none"> Ventilation Gas exchange Exercise, asthma and smoking <p>Chemistry: Energy changes</p> <ul style="list-style-type: none"> Changes of state Endothermic and exothermic reactions 	<p>Biology: Reproduction</p> <ul style="list-style-type: none"> Sexual reproduction and the reproductive organs Fertilisation Fetal development The menstrual cycle Plant reproduction <p>Physics: Pressure in fluids</p> <ul style="list-style-type: none"> Pressure in liquids Atmospheric pressure Pressure calculations 	<p>Physics: Sound</p> <ul style="list-style-type: none"> Types of wave Sound waves Microphones and ultrasound <p>Physics: Magnetism</p> <ul style="list-style-type: none"> Magnets and magnetic fields Earth's magnetism Electromagnets and motors 	<p>Physics: Light</p> <ul style="list-style-type: none"> Light and ray models Interactions of light waves with materials Mirrors, pinhole cameras and the eye Detecting light and colour <p>Physics: Magnetism</p> <ul style="list-style-type: none"> Magnets and magnetic fields Earth's magnetism Electromagnets and motors 	<p>Working Scientifically</p> <ul style="list-style-type: none"> Hypothesis Method Graphical skills Analysis Evaluation <p>Year 9 preparation</p>
Core Practical	<ul style="list-style-type: none"> Testing foods for sugar, starch, protein and fat Modelling the digestive system Investigating combustion time Displacement of iron by carbon 	<p>Lung volume</p> <p>Heating and cooling curves</p> <p>Exothermic and endothermic reactions</p> <ul style="list-style-type: none"> Writing a hypothesis Planning and carrying out an experiment Recording accurate results 	<p>Seed dispersal</p> <ul style="list-style-type: none"> Writing a hypothesis Planning and carrying out an experiment Recording accurate results Plotting graphs Drawing conclusions 	<p>Speed of sound</p> <p>Reflection</p> <p>Electromagnets</p> <ul style="list-style-type: none"> Writing a hypothesis Planning and carrying out an experiment Recording accurate results Plotting graphs Drawing conclusions 	<p>Reflection</p> <p>Electromagnets</p> <ul style="list-style-type: none"> Writing a hypothesis Planning and carrying out an experiment Recording accurate results Plotting graphs Drawing conclusions 	
Independent Learning Link	<p>Atoms, Elements and Compounds</p> <p>Chemical reactions</p> <p>Nutrition and Digestion</p>	<p>Gas exchange and Respiration</p> <p>Exothermic and endothermic reactions</p>	<p>Reproduction</p> <p>Pressure in fluids</p>	<p>Waves</p> <p>Magnetism</p>	<p>Waves</p> <p>Magnetism</p>	<p>Working Safely in the lab</p> <p>Making observations</p> <p>scientific apparatus</p> <p>Analysing data</p>

Year 9	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge	<p>Physics: Renewable and Non-renewable energy</p> <ul style="list-style-type: none"> Energy resources Energy demands Wind and water Solar and geothermal Nuclear Supply and demand Debating and Maths skills <p>Chemistry: Atomic Structure Recap of Y7/8</p> <ul style="list-style-type: none"> Particle model Chemical equations Separating mixtures History of the atom Structure of the atom Electron configuration Isotopes <p>Biology: Cells and transport Recap of Y7/8</p> <ul style="list-style-type: none"> Specialised cells in animals Specialised cells in plants Microscopes & Magnification RP Microscopes <p>Observing cells & Osmosis</p> <ul style="list-style-type: none"> Microscope use Biological drawing Calculating magnification 	<p>Biology: The Nervous System</p> <ul style="list-style-type: none"> What is the nervous system Reaction Times Synapses and reflexes The brain and eye <p>Chemistry: Periodic Table</p> <ul style="list-style-type: none"> Periodic Table Electron structure and periodic Table Group 1 Group 7 Trends Transition elements <p>Biology: Organising animals and plants</p> <ul style="list-style-type: none"> Heart Heart dissection Blood and vessels Coronary heart disease Breathing Gas exchange Plant organs Transpiration Blood Blood Vessels <p>Biology: Organisation and Digestive system</p> <ul style="list-style-type: none"> Tissues Digestive system Food tests Enzymes Factors affecting rate of reaction of enzymes RP Enzyme factors 	<p>Physics: Energy Stores and transfers</p> <ul style="list-style-type: none"> Recap of Y7/8 Energy stores Conservation of energy Gravitational potential energy Kinetic energy & Elastic energy Energy dissipation and efficiency Energy and power <p>Biology: Cells and transport</p> <ul style="list-style-type: none"> Diffusion Osmosis RP Osmosis Active transport Surface area <p>Chemistry: The Earths resources</p> <ul style="list-style-type: none"> Potable water and treating wastewater RP Purification of water Extracting metals Lifecycle assessment Reducing the use of resources 	<p>Chemistry: Earth and Atmosphere</p> <ul style="list-style-type: none"> The Earth's atmosphere Greenhouse gases <p>Physics: Electric Circuits</p> <ul style="list-style-type: none"> Current and Charge Potential difference and resistance Component characteristics Series circuits Parallel circuits <p>Chemistry: Structure and bonding</p> <ul style="list-style-type: none"> Particle model States of matter Ions Giant ionic structures Covalent bonding Simple covalent structures Giant covalent structures Metallic bonding and structures 	<p>Biology: Adaptations, interdependence and competition</p> <ul style="list-style-type: none"> Communities, biotic and abiotic competition Animal adaptations Plant adaptations <p>Chemistry: Earth and Atmosphere</p> <ul style="list-style-type: none"> Global climate change Pollutants <p>Physics: Molecules and matter</p> <ul style="list-style-type: none"> Density RP Density States of matter Changes of state Internal Energy Specific latent heat Gas pressure and temperature Gas pressure and volume 	<p>Biology: Communicable diseases</p> <ul style="list-style-type: none"> Health, Pathogens Viral diseases Bacterial diseases Fungal diseases Protist diseases Human defence systems <p>Physics: Energy transfer by heating</p> <ul style="list-style-type: none"> Conduction Specific heat capacity SHC experiment Heating and insulation <p>Space project</p> <ul style="list-style-type: none"> The solar system Star formation The universe Life in the Universe Telescopes Future jobs in space Life beyond Earth

Core Practical /Skills	Microscopes Osmosis Working Scientifically <ul style="list-style-type: none"> Collecting data, calculating means and anomalies Identifying variables Writing a method and risk assessment Analysing data and types of error Drawing graphs Key terms (reliability, repeatability, precise, resolution, peer review) Concluding and evaluations 	Reaction Time Enzymes Working Scientifically Assessment <ul style="list-style-type: none"> Results table and drawing graphs Conclusion writing using key terms Peer assessment task Long answer responses Equations, rearranging and units 	Osmosis Purification of water Working Scientifically <ul style="list-style-type: none"> Reading exam questions Key words (Describe, explain, suggest...) Reading graphs Evaluate learning Mind maps and KO Flash cards 	Electrical Circuits Working Scientifically <ul style="list-style-type: none"> Blurting Cornell methods 	Density	Specific heat capacity
Independent Learning Link	Energy Resources Atoms and Elements Movement and Cells	Energy Periodic Table Organisation of the body	Electric Circuits Earth and Atmosphere Adaptations, interdependence and competition	Transport systems Molecules and Matter	The Earths resources Communicable diseases Non – communicable diseases	Energy transfer by heating Structure and bonding Working Scientifically