

Key Stage 3 Science Curriculum Map

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	<p>Aspirations Core Principles in Science</p> <ul style="list-style-type: none"> • Belonging • Spirit of adventure • Confidence to take action <p>How Science Works</p> <ul style="list-style-type: none"> • Science and Scientists • Hazards and equipment • Scientific questions and planning an investigation • Collecting, presenting and analysing data <p>Organisms – Cells</p> <ul style="list-style-type: none"> • How to Use a microscope • Plant and Animal Cells • Bacterial Cells and Viral Cells • Specialised Cells • Organs and their function • Levels of Organisation • The Skeleton • Diffusion 	<p>Organisms – Movement</p> <ul style="list-style-type: none"> • The Skeleton • Muscles and Joints • Dissection of muscles • Investigating Joints • Fatigue in Muscles • The Blood • Bone, muscle and joint injuries <p>Matter – Particle Model</p> <ul style="list-style-type: none"> • Solid liquid and gas • Changes of state • Gas pressure • Diffusion • Density • Density calculations <p>Matter – Separating Mixtures</p> <ul style="list-style-type: none"> • Elements, compounds and mixtures • Pure substances • Solubility • Filtration • Evaporation • Distillation • Chromatography 	<p>Forces – Speed</p> <ul style="list-style-type: none"> • Introduction to Forces • Speed • Distance-time graphs • Speed and acceleration • Factors effecting speed • Resultant forces <p>Forces – Gravity</p> <ul style="list-style-type: none"> • Mass, weight and other forces • Gravity • Our weight on other planets • Satellites • Space Mission • Mass, weight and Gravity • Space Project 	<p>Genes – Variation</p> <ul style="list-style-type: none"> • DNA structure • DNA Discovery • Chromosomes • Inheritance • Variation • Continuous and Discontinuous Variation • Adaptation • Natural Selection <p>Genes – Animal reproduction</p> <ul style="list-style-type: none"> • Fertilisation • Menstrual Cycle • Pregnancy and birth • Controlling Fertility 	<p>Reactions – Metals and Non-metals</p> <ul style="list-style-type: none"> • Metals and non-metals • Properties of metals and non-metals • Metals and acid • Oxidation • Reactivity series • Reactivity series and displacement <p>Reactions – Acids and Alkalis</p> <ul style="list-style-type: none"> • Acids and Alkalis • Indicators and pH Investigation • Neutralisation • Making Salts • Looking at Indigestion tablets 	<p>Electromagnets – Current</p> <ul style="list-style-type: none"> • Static Electricity • Components and Circuits • Series Circuits • Parallel circuits • Measuring Current and Voltage Investigation <p>Electromagnets – Voltage and Resistance</p> <ul style="list-style-type: none"> • Voltage and Resistance • Resistance in a Series circuit • Resistance in Parallel Circuits • Voltage in Series Circuits • Voltage in Parallel circuits



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 8	Aspirations Core Principles in Science <ul style="list-style-type: none"> • Sense of accomplishment • Curiosity and creativity • Leadership and responsibility How Science Works <ul style="list-style-type: none"> • Improving scientific questions • Analysis and evaluation • Communicating science Ecosystems – Interdependence <ul style="list-style-type: none"> • Food Webs • Food chains and Food webs • Population, Predators and Prey • Pyramid of Numbers and Biomass • Pyramid of Biomass • DDT Bioaccumulation 	Ecosystem – Plant Reproduction <ul style="list-style-type: none"> • Fertilisation in Plants • Plant Dissection • Pollination • Germination and Seed Dispersal Earth – Earth Structure <ul style="list-style-type: none"> • Structure of the Earth • Earth's Resources • Types of Rock and Weathering • Igneous Rocks • Metamorphic Rocks 	Earth – Universe <ul style="list-style-type: none"> • Solar System • Day and Night • Phases of the moon • Sun, Moon, Earth and Eclipses Waves - Sound <ul style="list-style-type: none"> • Introduction to waves • Properties of sound waves • Volume and pitch • investigating sound Waves – Light <ul style="list-style-type: none"> • Introduction to light as waves • Reflection • Colour • Refraction • The Eye 	Organisms – Breathing <ul style="list-style-type: none"> • Gas Exchange • Inhalation and Exhalation • Investigating Breathing • Exercise and Gas Exchange • Effects of Smoking • Lung Diseases Organisms – Digestion <ul style="list-style-type: none"> • Balanced Diets and Major food groups • Digestive system • Food Tests • Enzymes • Deficiency Diseases • Energy in foods 	Forces – Contact Forces <ul style="list-style-type: none"> • Contact vs Non-Contact forces • Investigating Friction • Air Resistance • Balanced and Unbalanced Forces • Hooke's Law Investigation • Deformation and Proportionality Forces - Pressure <ul style="list-style-type: none"> • Force and Pressure • Air Pressure • Calculating Fluid Pressure • Atmospheric Pressure • Hydraulics • Upthrust • Floating and Sinking 	Energy – Heating and Cooling <ul style="list-style-type: none"> • Types of Energy • Conduction • Convection • Radiation • Thermal Insulation • Energy Transfer diagrams • Cost of Electricity Energy – Work <ul style="list-style-type: none"> • Displacement • Work Done and Elastic Energy • Momentum • Gears, Pulleys and Levers • Mechanisms • Sustainable Design



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 9	<p>Aspirations Core Principles in Science</p> <ul style="list-style-type: none"> • Heroes • Fun and excitement <p>How Science Works</p> <ul style="list-style-type: none"> • Evidence and sources • Critique claims and justify opinions • Risk and benefits • Review theories <p>Ecosystems – Respiration</p> <ul style="list-style-type: none"> • Respiration word equation • Aerobic and anaerobic respiration in organisms • Fermentation in yeast 	<p>Ecosystem - Photosynthesis</p> <ul style="list-style-type: none"> • Importance of photosynthesis • Plant adaptations for photosynthesis • Word equation • Function of xylem and phloem • Adaptations of plant cells and tissues • Use of plant organs as a food source <p>Matter – Periodic Table</p> <ul style="list-style-type: none"> • Periodic table arrangement • Metals and non-metals • Know groups 1, 7 and 0 • Predict physical and chemical properties of elements from the periodic table <p>Matter – Elements</p> <ul style="list-style-type: none"> • Define element, atom, molecule and compound • Name elements in a chemical formula • Know monomers and polymers • Know symbols of common elements • Name simple compounds • Compare properties of elements and compounds 	<p>Reactions – Types of Reactions</p> <ul style="list-style-type: none"> • Physical and Chemical change • Thermal Decomposition • Chemical Reactions and Combustion • Burning Fuels • Conservation of Mass • Chemical Equations <p>Reactions – Chemical Energy</p> <ul style="list-style-type: none"> • Exothermic and Endothermic Reactions • Catalysts • Energy Level Diagrams • Bond Energies <p>Electromagnets – Magnets</p> <ul style="list-style-type: none"> • Magnetism • Magnetic Field • Using Plotting Compasses • Electromagnetism • Testing Materials for Magnetism 	<p>Electromagnets – Electromagnets</p> <ul style="list-style-type: none"> • What are Electromagnets? • Uses of Electromagnets • Changing the strength of an electromagnet <p>Genes – Evolution</p> <ul style="list-style-type: none"> • Describe adaptations in organisms • Define and explain the importance of biodiversity • Know the principle of Darwinism • Explain why maintaining biodiversity is important • Give an example of evolution in mammals <p>Genes – Inheritance</p> <ul style="list-style-type: none"> • Describe the arrangement of DNA, Chromosomes and genes • Explain the importance of DNA in inheritance • Understand that DNA may change • Explain how genes may be passed on from parent to offspring • Discovery of DNA • Human Genome project • Mitosis and Meiosis 	<p>Energy – Energy costs and Transfers</p> <ul style="list-style-type: none"> • Types of Energy • Energy Transfer. • Energy Stores and Systems • Cost of Electricity • Energy Resources • The Great Energy Debate <p>Earth – Climate</p> <ul style="list-style-type: none"> • Composition of gases in the atmosphere • Burning of fossil fuels and changes in carbon dioxide in the atmosphere • Carbon sinks and stores • Greenhouse effect and global warming • Carbon cycle • Human impact on the planet <p>Earth – Earth Resources</p> <ul style="list-style-type: none"> • Examples of earth's resources • Extraction of metal from their ores • Use of electrolysis and displacement reactions to obtain metals • Recycling of materials 	<p>Waves – Wave Effects</p> <ul style="list-style-type: none"> • Waves as transfer of energy • Sound waves, microphones and loud speakers • Describe sound waves • Understand damage to skin due to frequency of the wave <p>Waves – Wave Properties</p> <ul style="list-style-type: none"> • Transmission of waves • Types of waves • Wave equation • Reflection, absorption and transmission