Aspris Children's Services

Curriculum Long Term Plan
SCIENCE

Sedgemoor Manor School

	TERM 1- BIOLOGY	TERM 2- PHYSICS	TERM 3- CHEMISTRY	TERM 4- BIOLOGY	TERM 5-PHYSICS	TERM 6
YEAR 5/6 A	Living things and their habitats **Illustrating Life Cycles** Flowering plant reproduction. Ways that plants reproduce asexually. Life Cycles: Insect, amphibian, mammalian and Bird. Life Cycles around the World. Becoming Natural Scientists	Light **Theatre Lighting Technicians** Shadow puppets: angles, shape, definition. Shadow puppets: Colour and texture. Lighting effects: reflecting light. Lighting effects: illusions with mirrors. Theatrical Interviews.	Properties and Changes of Materials **Material Consultants** Recycling Challenge. Hot porridge and frozen yogurt. Packaging problems. Café challenge. Toy shop challenge (electrical conductivity) Snoring challenge (soundproofing)	Animals, including humans **The Human Species** Development: from foetus to child. Growth: adolescence and puberty. Growth: adults, old age and timelines. A healthy body. Blood and the heart. Transport systems.	Electricity **Electric Art** Electrical art challenge. Playing with electricity circuits. Designs, ideas and drawing circuit diagrams. Taking a dimmer approach. Electrical workshop action. Electrical art installation.	Revision block **Medical Maneuvers** Mosquitos and medicine. Medical materials. Welcome to the world! The well- oiled human machine. Illumination station Medical circuits
YEAR 5/6 B	Living things and their habitats **The Classification Code** Meeting Linnaeus Spot the odd one out Classification System Back Yard Classification Unusual Creatures New creature features	Forces **Welcome to Force Land** Bungee-jump: gravity and balanced forces Roling car ride: friction Parachute ride: air resistance Canyon ride: water resistance Elephant ride: levers and pulleys Ferris wheel: gears	Properties and Changes of Materials **Special Effects** **Materials** Mud, glorious mud. Sweet soluble solutions. Creating explosive special effects. Ageing props (oxidation and burning) Prosthetic wounds and fake blood The future of special effects.	Evolution and Inheritance **Survival of the Fittest** Play inheritance detectives. Mutations, adaptations and survival. Extreme survival and adaptations. Research evolutionary pioneers. Fossils and evolutionary trees, Tale of the giraffes neck.	Earth and Space **Space** Heliocentricity vs geocentricty. Modelling the solar system. Night and day and shadow alley. A moon month. Seasonal sensations. Entering the inquisition.	Revision Block **Sensational Science** Mind- blowing mixtures. Sensational space behaviour. Fickle forces. Crazy creature classifications. Extraordinary evolution antics. Scientific disputes.

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	TERM 1- PHYSICS	TERM 2- CHEMISTRY	TERM 3- BIOLOGY	TERM 4- PHYSICS	TERM 5- CHEMISTRY	TERM 6- BIOLOGY
YEAR 7/8 A	**Energy** Calculation of fuel uses and costs in the domestic context Energy changes and transfers Changes in systems	**Atoms, elements and compounds** The particulate nature of matter Atoms, elements and compounds Pure and impure substances	**Structure and function of living organisms** Cells and Organisation The Skeletal and Muscular Systems Gas exchange systems	**Electricity and Electromagnetism** Current electricity Static electricity Magnetism	**The Periodic Table** Introduction to the periodic table Elements and symbols Atomic structure Periodicity and trends Grouping of elements Chemical bonding and compounds Reactivity and reactions Uses of elements	**Structure and function of living organisms** The Skeletal and Muscular Systems Nutrition and Digestion Gas exchange systems
YEAR 7/8 B	**Waves** Observed waves Sound waves Energy and waves Light waves	**Earth and Atmosphere** Composition of the earth Formation of the earth The atmosphere Air pollution The greenhouse effect The water cycle Natural resources and sustainability	**Material Cycles and Energy** Photosynthesis Cellular respiration **Interactions and Interdependencies** Relationships in ecosystem	**Motions and Forces** Describing motion Forces Pressure in fluids Balanced forces Forces and motion	**Chemical Reactions** Introduction to chemical reactions Types of chemical reactions Symbols Balancing chemical equations Factors effecting rate of reactions Acid, bases and pH Reactivity series Redox Conservation of mass	**Structure and function of living organisms** Reproduction Nutrition and Digestion Health and Lifestyles

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	TERM 1- CHEMISTRY	TERM 2- BIOLOGY	TERM 3- PHYSICS	TERM 4- CHEMISTRY	TERM 5-BIOLOGY	TERM 6- PHYSICS
YEAR 9	**Materials** Properties of materials Classification of materials Changes in materials Materials and energy Environmental impact	**Genetics and Evolution** Inheritance, chromosomes, DNA and genes.	**Space** The solar system Celestial bodies Gravity and orbits The universe and cosmology Telescopes and observations	**GCSE** Atomic structure and Periodic table Structure of atoms Reaction of elements The periodic table Mixtures	**GCSE** Eukaryotic and Prokaryotic cells Cell specialism Microscopy Chromosomes Mitosis Stem cells	**GCSE** Energy Energy stores and transfers Work Power Conservation of energy National and global energy resources Renewable and non renewable fuels Energy dissipation and efficiency

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	TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
YEAR 10	**BIOLOGY** **Transport in cells** Diffusion and osmosis Active transport Animal tissues, organs and organ systems Levels of organisation Digestive system Enzymes Heart and blood CHD and health issues **PHYSICS** **Electricity** Charge and current flow Series and parallel circuits Resistance **CHEMISTRY** **Bonding structure and the properties of matter** Ionic substances Giant covalent substances Metallic substances Bonding and structure Carbon	**BIOLOGY** **Plant tissues, organ and organ systems** Plant tissue Plant organs Plant organ systems **PHYSICS** **Electricity** Electrical components and domestical electricity Ohmic and non ohmic I-V characteristics Power of electrical appliances Household electricity and the national grid **CHEMISTRY** **Quantitative chemistry** Relative mass and mores Conservation of mass Reacting masses Concentration of solutions	**BIOLOGY** **Infection and response** Communicable diseases Pathogens Human defense system Vaccination Drug development **PHYSICS** **Particle and Atomic structure** Atoms and isotopes Radioactive decay Nuclear model and equations Particle model and motion in gases Density of materials **CHEMISTRY** **Chemical changes** Reactions of metals Extraction of metals Reactions of acids Making salts Electrolysis	**BIOLOGY** Photosynthesis Aerobic and anaerobic **respiration** **PHYSICS** Thermal energy transfers Conduction Convection Radiation Internal energy and changes of state Specific latent heat Specific heat capacity **CHEMISTRY** **Energy changes** Exothermic and endothermic reactions	**BIOLOGY** **Homeostasis and the human nervous system** Hormonal conditions in humans Homeostasis Nervous system **PHYSICS** **Forces** Contact and non contact forces Scalars and vectors Vector diagrams Speed and velocity Terminal velocity Newtons laws of motion **CHEMISTRY** **Formula equations** Writing formulae Classifying substances Common reactions Balancing equations Ionic equations Half equations	**BIOLOGY** **Reproduction and Variation** Human endocrine Blood glucose Reproduction Contraception Sexual and asexual reproduction Meosis DNA Inherited disorders Variation Selective breeding **PHYSICS** **Forces** Observing motion Acceleration Distance time graph Velocity time graphs Stopping distance **CHEMISTRY** **The rate and extent of chemical change** Rate of reaction Reversible reactions

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	TERM 1		TERM 2		TERM 3		TERM 4		TERM 5		TERM 6	
YEAR 10 CONDORS	**BIOLOGY** **Transport in cells** Diffusion and osmosis Active transport Animal tissues, organs and organ systems Levels of organisation Digestive system Enzymes Heart and blood CHD and health issues	**PHYSICS** **Electricity** Charge and current flow Series and parallel circuits Resistance	**CHEMISTRY** **Bonding structure and the properties of matter** Ionic substances Giant covalent substances Metallic substances Bonding and structure Carbon	**BIOLOGY** **Plant tissues, organ and organ systems** Plant tissue Plant organs Plant organ systems **Photosynthesis** Aerobic and anaerobic **respiration**	**PHYSICS** **Electricity** Electrical components and domestical electricity Ohmic and non ohmic I-V characteristics Power of electrical appliances Household electricity and the national grid	**CHEMISTRY** **Quantitative chemistry** Relative mass and mores Conservation of mass Reacting masses Concentration of solutions **Energy changes** Exothermic and endothermic reactions	**BIOLOGY** **Infection and response** Communicable diseases Pathogens Human defense system Vaccination Drug development	**PHYSICS** **Particle and Atomic structure** Atoms and isotopes Radioactive decay Nuclear model and equations Particle model and motion in gases Density of materials	**CHEMISTRY** **Chemical changes** Reactions of metals Extraction of metals Reactions of acids Making salts Electrolysis **The rate and extent of chemical change** Rate of reaction Reversible reactions	**BIOLOGY** **Homeostasis and the human nervous system** Hormonal conditions in humans Homeostasis Nervous system **Reproduction and Variation** Human endocrine Blood glucose Reproduction Contraception Sexual and asexual reproduction Meosis DNA Inherited disorders Variation Selective breeding	**PHYSICS** **Forces** Contact and non contact forces Scalars and vectors Vector diagrams Speed and velocity Terminal velocity Newtons laws of motion Observing motion Acceleration Distance time graph Velocity time graphs Stopping distance Thermal energy transfers Conduction Convection Radiation Internal energy and changes of state Specific latent heat Specific heat capacity	**CHEMISTRY** **Formula equations** Writing formulae Classifying substances Common reactions Balancing equations Ionic equations Half equations

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	TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
YEAR 11	**BIOLOGY** Genetics and evolution Evolution +extinction Classification of living organism. Classification Problems with classification **PHYSICS** **Waves** Properties of waves Transverse waves Longitudinal waves Measuring wave speed Electromagnetic waves **CHEMISTRY** **Organic chemistry** Crude oil, hydrocarbon and alkanes Cracking and alkenes Chemical analysis Purity, formulations and chromatography	**BIOLOGY** Adaptation, interdependence and competition Communities Interdependence Biotic and abiotic factors Ecosystems Adaptations **PHYSICS** **Magnetism electromagnetism** Magnetic fields and flux density Electromagnets Motor effect Right hand grip rule Solenoids Flemings left hand rule **CHEMISTRY** **Chemical analysis** Identification of common gases The atmosphere Composition and evolution of the Earth's atmosphere Greenhouse gases	**BIOLOGY** Genetics and evolution Evolution +extinction Classification of living organism. Classification Problems with classification **PHYSICS** **Electromagnetic spectrum** Visible light-reflection, refraction,transmission , absorption) Parts of electromagnetic spectrum Uses and dangers of the spectrum **CHEMISTRY** The Earth's resources Using the Earth's resources The use of water Alternative methods of extracting metals	**BIOLOGY** Organisation of an ecosystem Levels of organisation Producers, consumers and decomposers Materials cycling Biodiversity Waste management Land use Deforestation Global warming Maintaining biodiversity **PHYSICS** **CHEMISTRY**	**Revision/ exams**	**Revision/ exams**

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