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Curriculum Plan Science

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Year 7	**Golden Treads:** State the big ideas that will be taught across the year (Threshold concepts) Substances and properties, forces and motion, the cellular basis of life, chemical reactions, light waves, heredity and life cycles, particles and structure, earth in space				**Enrichment:** What is offered through the year to support learning in the classroom?		**Review and evaluation:** Give date for review of the curriculum July 2024
	Topics	**Assessment**	**Substantive Knowledge**	**Disciplinary Knowledge**	**Misconceptions**	**Key Vocabulary**	**Knowledge tracking**
Term 1	Scientific Skills Cells	Baseline Assessment	Safety, Hazards and Expectations Scientific Equipment Variables Graphs Animal and Plant Cells Microscopes Specialised Cells Diffusion	Lighting a Bunsen Burner Microscopes RP	Cells only found in living things All cells are the same Cells do not change or grow	Reproducible Accurate Variable Resolution Specialised Cell Diffusion Cytoplasm Nucleus Mitochondria	**Prior Learning Skills:** Year 5+6 **Future Learning Skills:** Year 8 term 1 **Prior Learning Cells:** Year 6 **Future Learning Cells:** Year 8 term 1+2
Term 2	Properties and Materials Forces		Ancient and Modern Materials Metals and Non-Metals Corrosion Forces – balanced and unbalanced Stretching and Squashing Friction Resistance Equilibrium	Sorting Materials based on Properties Classifying Materials Metals and Corrosion Friction Streamlined Shapes Bridges and Materials	All materials are solid All materials have the same properties Objects at rest have no forces acting on them Forces can only move objects in the direction they are applied All forces are visible	Metals Corrosion Insulator Conductor Contact Forces Mass Resistance	**Prior Learning Materials:** KS1+2 **Future Learning Materials:** KS4 **Prior Learning Forces:** KS2 **Future Learning Forces:** Year 8 term 2/3
Term 3	Cells to Organ Systems Substances and Mixtures		Organisation Organ Systems Joints and Muscles Solutions and Dissolving Separating Techniques Pure Substances	Investigate Muscle Fatigue How does Temperature effect Speed of Dissolving Sugar in Water Crystallisation of Rock Salt and Evaporation, Chromatography	Cells are the smallest level of organisation Organs and Organ Systems are the same thing All substances are mixtures All mixtures can be separated by filtering	Respiration Antagonistic Contract Tissue Chromatography Solvent Dissolve Pure Substance	**Prior Learning Cells to Organ Systems:** Year 6 **Future Learning Cells to Organ Systems:** Year 8 term 1+2 **Prior Learning Substances and Mixtures:** Year 5 **Future Learning Substances and Mixtures:** Year 8 Term 3+4

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Term 4	Light Particles and their Behaviour		Light Waves Light Materials Reflection Dispersion of Light Mixing Coloured Light and Subtraction Seeing Colour States of Matter Diffusion	Reflection of Light Dispersion of Light Investigating Diffusion in Gases and Liquids	Eyes produce light Light always travels in a straight line Particle model – liquid particles are far apart Solids can not change shape	Opaque Transparent Translucent Angle of Reflection Transverse Particle Sublimation Boiling Point	**Prior Learning Light:** KS2 **Future Learning Light:** KS4 **Prior Learning Particles and their Behaviour:** Year 4 **Future Learning Particles and their Behaviour:** Year 9 Term 2/3
Term 5	Reproduction Solar System and Beyond		Human and Plant Reproductive System Seed Formation, Growth and Dispersal Fertilisation and Implantation Development of Foetus Pregnancy and Birth Puberty Menstrual Cycle Solar System and Planets Gravity Seasons Moon and Craters Sun and other Stars Milky Way and other Galaxies	Reproductive Organs to Fit Torso Flower Dissection Seed Dispersal	Babies are made by just one parent Reproduction is an immediate process All living organisms reproduce in the same way The sun is the largest planet in the solar system All planets have the same number of moons The moon produces light	Fertilisation Gametes Germination Contraception Ovaries pollination Asteroid Hemisphere Axis	**Prior Learning Reproduction:** Year 5 **Future Learning Reproduction:** KS4 **Prior Learning Solar System:** KS2 **Future Learning Solar System:** KS4 Separate Science
Term 6	Human Lifestyle and Health		Nutrients and Diet Energy Requirements Digestive System and Adaptations Enzymes and Bacteria in Digestion	Burning Food Villi Practical	All exercise burns the same calories Energy is consumed or destroyed when used	Absorption Enzymes Catalyst	**Prior Learning Human Lifestyle and Health:** Year 6 **Future Learning Human Lifestyle and Health:** Year 8 Term 5/6 **Prior Learning Forces:** KS2 **Future Learning Forces:** Year 8 Term 2+3

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