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Science LTP



Intent	Implementation
<p>Through our science curriculum, we harness our pupils natural curiosity through the wonderful everyday: we explicitly teach children about the phenomena that impact our daily life and give them opportunities to explore these in detail. We understand the critical importance of STEM knowledge and seek to lay foundations that will broaden the life chances of our pupils and prepare them to live and work in an increasingly scientific world. We take an evidence-informed approach to our curriculum design, as well as our pedagogy so that our pupils can remember and apply what they have learnt. Throughout every unit, pupils have the opportunity to engage in a wide range of enquiry approaches, developing both their scientific knowledge and skill.</p> 	<p>Our knowledge-rich curriculum equips pupils with the knowledge and vocabulary needed to explain and analyse their understanding of scientific content and scientific process. The medium-term planning and lesson sequencing is provided by the subject lead. Using the expected knowledge, teachers devise their exposition around key principles such as retrieval practice, teaching subject-specific vocabulary and using direct instruction to teach the core knowledge. Teachers use targeted questioning to elicit pupil understanding, expecting answers from all through talk partners. They clearly model the enquiry process and plan when to use and remove scaffolds to provide support and challenge for individual learners. They provide clear feedback on how to improve when circulating to obtain a high success rate and use daily review checkpoints to consolidate.</p> 
Impact	
<p>The impact of our science curriculum is measured by triangulating lesson observations, work scrutinies and pupil discussions to gauge what pupils have learned and how well they remember this. Leaders sample retrieval practise to see how much prior content pupils have retained as well as using termly summative standardised assessments, to benchmark pupil performance against a national sample. These are moderated across the primary academies.</p> 	
Progression	
<p>Units are carefully mapped out over both each key stage and the whole of the primary science curriculum so that key concepts and core knowledge is regularly revisited. Knowledge is centred around a 'Big Question' for the unit to help support children's schemas and the various types of enquiry become progressively more challenging over the primary phase. Vocabulary is carefully mapped from the Early Years to Y6 to ensure progression in key terms are taught and learnt.</p> 	
Enrichment	
<p>Our engagement with the local environment ensures that pupil learn through varied and first-hand experiences of the world around them. Through various workshops, trips and interactions with experts, pupils develop the understanding that science has changed our lives and that it is vital to the world's future prosperity; our science week plays a large part in the academy's enrichment offer. Pupils learn the possibilities for careers in science as a result of our community links and connection with national agencies such as the STEM association.</p> 	

Science Year Group Map



Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Biology Animals including Humans <i>The Human Body and Senses</i>	Chemistry: Changing states Freezing, melting and dissolving and seasons	Biology: Birds, Seasons and Environments	Biology Plants and seasons	Biology <i>Mini beasts</i>	Biology Minibeasts and their Habitats
Year 1	Biology (short unit) Animals including Humans <i>The Five Senses & Me</i>	Physics Seasonal Change <i>Our Changing Earth</i>	Chemistry Use of Everyday Materials <i>Describing & Grouping</i>	Biology Animals including humans <i>The Animal Kingdoms</i>	Biology Plants <i>Common British Plants</i>	Consolidation
Year 2	Biology Living things and their habitats <i>Microhabitats, Food & Adaptations.</i>	Chemistry Use of everyday materials <i>Changing materials & their usefulness.</i>	Biology Plants <i>What Plants need to grow.</i>	Biology Animals including humans <i>Life Cycles & Hygiene</i>	Consolidation	Physics Electricity <i>Where Electricity comes from</i>
Year 3	Biology Animals including humans <i>Vertebrates</i>	Chemistry Rocks and Soils	Physics Light <i>Light and Shadow</i>	Physics Electricity <i>Making Simple Circuits</i>	Biology Plants <i>How parts function</i>	Physics Magnets Forces <i>Movements</i>
Year 4	Biology Animals including humans <i>Digestive System</i>	Chemistry States of Matter <i>Solids, Liquids & Gases</i>	Physics Sound <i>Vibrations & Patterns</i>	Biology Living things and their habitats <i>Environmental Changes</i>	Consolidation	Chemistry Properties of change and materials (Y5, Part 1) <i>Uses of Materials</i>
Year 5	Biology Living things and their habitats <i>Life Cycles & Reproduction</i>	Physics Earth and Space <i>The Milky Way</i>	Physics Forces <i>Gravity, Friction, Air & Water Resistance Gear, Levers & Pulleys</i>		Biology Animals including humans <i>From Cradle to Grave</i>	Chemistry Properties of change and materials <i>Separating Mixtures & Solutions</i>
Year 6	Biology Animals including humans <i>The Circulatory System</i>	Physics Light <i>Reflection & Refraction</i>	Biology Living things and their habitats <i>Micro-organisms & Classification</i>	Biology Evolution and Inheritance <i>Adaptation, Mutation & Inheritance</i>	Physics Electricity <i>Circuits and Symbols</i>	Consolidation & Life skills - first aid