Light Years
School
Start small, grow tall

Science Policy

Policy Owner	Light Years School
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Safeguarding at Light Years School

At Light Years School, we are committed to providing an environment in which students feel safe and secure to access their education. All stakeholders are responsible for ensuring the safety and well-being of children. Safeguarding is everyone's responsibility, and all staff are encouraged to maintain an "it could happen here" attitude. We recognise our responsibility to safeguard all who access school and promote the welfare of all our pupils by protecting them from physical, sexual, and emotional abuse, neglect, and bullying. Light Years School are dedicated to creating a strong safeguarding culture, and that the safety and well-being of children is the central thread that embeds itself through all aspects of the school. If a person is concerned about anything they read, witness, or hear with regards to the school, they should contact the school's designated safeguarding lead immediately or Headteacher. Safeguarding, and the safety and well-being of all pupils at Light Years School is carefully considered and a central theme through all school policies.

Special Educational Needs & Disabilities (SEND) at Light Years School

At Light Years School, we are passionate about providing an inclusive education to children with special educational needs. We recognise and celebrate the individuality of our pupils and use personalised approaches, allowing pupils with SEND to feel supported during the school day. We strive to provide pupils with the same opportunities and experiences that pupils would have received at a mainstream school, believing passionately that in the right environment, with the right support, pupils will flourish in education. We do this by focusing on providing a SEND friendly environment, an adapted curriculum, and a strong focus on developing pupils' personal, social, and emotional development. The special educational needs and disabilities of all pupils at Light Years School is carefully considered and a central theme in through all school policies. For more information, please read the school's SEND Information Report.

Science Curriculum Rationale

Science is all around us. It has been, is and will continue to be vital to the growth, prosperity, and advancement of our world. Teaching Science allows the children to develop the skills to make sense of the world they live in and to apply key knowledge gained to real life situations. At Light Years School we want children to develop a love for exploring, questioning, and engaging with the world around them. Through experiencing different types of scientific enquiry, they will combine the learning of scientific knowledge with the application of disciplinary skills that allow them to be able to predict, analyse and explain whilst developing a sense of excitement, wonder and curiosity.

'Primary Science is important for pupils as individuals and for society: amongst many other reasons, it can help children to understand and reason about themselves and the world, enable them to live healthy lives and make informed choices' – Harlen 2018 cited in EEF Systematic review of approaches to primary science teaching 2023.

Light Years School believes that pupils should:

- Be excited by the world around them.
- Recognise that Science is everywhere and be able to identify its impact on our world.
- Think like scientists.
- Have the skills to explore, explain, question, predict and analyse.
- Use the appropriate vocabulary when speaking about a scientific topic.
- Use Science to show how numeracy and literacy skills can be applied in real-life situations.
- Present arguments, data, and findings in a variety of ways

The Science policy is designed to be inclusive and consider pupil's needs as outline in their EHCP. The policy provides opportunities to develop teamwork and socials skills, language, and communication skills and both motor and cognitive ability. Where appropriate, enrichment activities will be use alongside the curriculum to enhance pupil's experiences and learning. This will be linked to the topic and could include trips, external companies coming into school and engagement in collaborative projects.

Science Curriculum Intentions and Implementations

Science Intent

Pupils will:

- Develop the skills needed to think and work like scientists.
- Develop their scientific knowledge and understanding of key concepts.
- Develop skills in working scientifically and apply these in a range of investigations.
- Carry out a range of enquiry types to answer scientific questions.
- Learn and use scientific vocabulary relevant to the topics being taught.
- Become familiar with famous scientists of differing backgrounds and their impact in the field of science and the world in general.
- Be interested in and understand how science has shaped and, is continuing to shape, the world around us.

Science Implementation

- Science will be taught weekly across the academic year.
- Each science topic will include the teaching of substantive knowledge as well disciplinary skills (working scientifically).
- Pupils will have the opportunity to carry out all 5 different types of scientific enquiry throughout the year.
- Planning for each topic will include many opportunities for pupils to engage in practical activities. This is not only to provide a hands-on approach to learning but also opportunities to for pupils to discretely learn and practice working scientifically skills.
- For each topic, pupils will learn about a scientist or scientists that are important in that area of science and how their work has impacted on the world today.
- Key vocabulary will be provided for each topic and pupils will learn to read, write, and use the vocabulary within their work.
- All children will be exposed to high quality texts and stories which will help to provide pupils with strong foundational knowledge that can empower and equip them with the skills to question and challenge the world around them.

- Guided, independent and retrieval practice, are used, where appropriate, to ensure children remember the key substantive knowledge and are able to use this in other contexts.
- Teachers will plan lessons to include cross-curricular links with other topics where appropriate.
- Teachers will plan for opportunities to apply and embed literacy and numeracy skills.
- Pupils will have access to alternative ways of recording according to their individual needs.

Science Impact

The impact of science success in our school is measured by the following:

- Pupils of all abilities will be able to engage in science lessons.
- Pupils will show curiosity about the world around them and be able to apply the knowledge learnt to situations outside of science lessons.
- Pupils will use disciplinary skills (working scientifically) to plan, carry out and evaluate investigations.
- Pupils will show progress in both substantive knowledge and disciplinary skills in line with their attainment levels and learning needs.
- Pupils will be inspired by famous scientists and be able to explain how they have impacted on the world we live in.
- Pupils will choose the correct enquiry type needed to answer a scientific question.

Science Leadership – Roles and Responsibilities

Senior Leaders

- Lead and give a high profile to science ensuring departmental contributions to the development of Science are regularly discussed in line management meetings and are a focus of the quality assurance process.

Science Leader

- Provide Pupils with core knowledge, skills and understanding they need to become scientists. Support teachers to deliver the teaching of scientific knowledge and skills.

Teachers across the curriculum

- Contribute to Pupil's development of scientific knowledge and skills, both in science lessons and across the curriculum.

Learning Support Assistants

- Support Pupils in their development of scientific knowledge and skills. Provide support to access learning material within science lessons.

Parents

- Expose children to science in the everyday world through activities such as cooking, observing the night sky, discussing what they find on a beach etc.

Pupils

- Take responsibility for their own learning and engage in all activities within science lessons. They will respect resources made available to them.

Personal Development within the Science Curriculum

Personal Development intentions are to ensure that all Pupils:

- are provided with a curriculum that offers opportunity to be exposed to a variety of beliefs and principles in which clear ground rules are set in line with the core values of the school including fundamental British Values.
- reflect upon their own beliefs and values and respect those of others.
- are supported to consider and regard the equal opportunity for all and show respect and tolerance of differing religions and beliefs of others.
- have British Values embedded within the curriculum to prepare them for life in modern Britain when they depart from the school.
- have awareness of career options and will feel confident in identifying and recognizing how the curriculum may lead to these careers.
- enrich their learning through Personal Development afternoons as well as extra-curricular activities on offer throughout the school waking day curriculum.

Through Science, personal development will be implemented by:

- Being presented with scientific questions including some that may pose moral dilemmas.
- Exploring and questioning the role science plays on some of the major issues of the world today. Considering where science can help and where it has caused problems.
- Being asked to give opinions, take part in debates, and come up with their own ideas.

Current affairs

- This provides an opportunity to experience the age-appropriate beliefs and social constructs of communities and cultures within the wider setting of Britain. British values are embedded through the content of the resources referenced.

Science Safeguarding Statement

Safety and safeguarding is the core theme throughout the pupil's life at Light Years School. Through the safeguarding culture at school, we aim to help prepare the pupils for the next stage of their education. At all times we aim to foster resilience alongside a calm environment.

In order to safeguard pupils against inappropriate or harmful material both in books and online we are committed to ensuring they have suitable, balanced, and carefully chosen reading resources. Reading materials will be closely monitored and any concerns about pupils' resources will be either removed or reviewed.

School leaders ensure that reading material does not promote any partisan political view during their conduct or teaching. If they hear the promotion of a partisan political view, they present an opposing and balanced view. If a staff member feels that pupils are at risk of being radicalised, they must report to the Designated Safeguarding Lead and raise a cause for concern form.

To ensure pupils safety throughout their science journey, investigations and practical experiments are carefully planned and chosen to be appropriate, accessible, and only use materials that are safe for the children's stage of learning. If necessary, risk assessments are carried out in accordance with the Hampshire Safety in Science in KS1 and KS2 publications.

Science Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y3/4 A	**Light and Dark** **Light** **Enquiry type – pattern seeking** **Key Scientists – Thomas Edison** **Key texts:** When You're Fast Asleep, Above and Below, Who's Afraid of the Light?	**Colour Collectors** **Magnets** **Enquiry type – comparative and fair testing** **Key Scientists – William Gilbert** **Key texts:** Magnet Max, Forces and Magnets, Planet Omar's Accidental Trouble Magnet, Be a Scientist: Investigating Magnets	**Under the Canopy** **Animals including humans – nutrition, skeleton, and muscles** **Enquiry type – Researching using secondary sources** **Key Scientists – Yann le Meur** **Key texts:** The World's Most Ridiculous Animals, Animal Knowledge Genius, Anatomicum Junior, Kay's Anatomy, The Bright and Bold Human Body: The Skeleton and Muscles	**Treasure Island** **STEM – Protect our planet**	**Work Like an Egyptian** **Plants** **Enquiry type – observation over time** **Key Scientists –Beatrix Potter** **Key texts:** RHS The Magic and Mystery of Trees, The Secret World of Plants, Plants Save the World, The Big Book of Blooms, Bloom, Ten Seeds, A Seed is Sleepy	**Crash Landing** **Rocks** **Enquiry type – identifying and classifying** **Key Scientists – Mary Anning** **Key texts:** The Street Beneath My Feet, Rocks and Fossils, The Secret of Black Rock, The Rock From The Sky, The pebble in my pocket, Stone Girl Bone Girl, A Rock is Lively, Under Your Feet: Soil, Sand and Other Stuff
Y3/4 B	**Travel and Transport** **Sound** **Enquiry type – pattern seeking** **Key Scientists – Evelyn Glennie** **Key texts:** Listen: How Evelyn Glennie, a Deaf girl, Changed percussion. Step into Science: Sound, Can you hear sounds in Space?	**Who wants to be a gladiator?** **Electricity** **Enquiry type – comparative and fair testing** **Key Scientists – Michael Faraday** **Key texts:** Oscar and the Bird, Shocking! Where does Electricity come from? Charging About – The story of Electricity.	**Let's go wild!** **Living things and their habitats – grouping, keys and changing environments** **Enquiry type – identifying and classifying** **Key Scientists – Gladys West** **Key texts:** The Last Bear, Lots: The Diversity of life on Earth, Last: The story of a White Rhino, The Big Picture: Living Habitats, The Girl who thought in Pictures	**Groundbreaking Greeks** **STEM – That girl can!** **Key texts:** A Galaxy of Her Own: Amazing Stories of Women in Space, Stone Girl Bone Girl, Queen of physics, Women in Science, Hidden Figures, June Almeida, Virus Detective!	**Come Dine with Me** **States of matter** **Enquiry type – observation over time** **Key Scientists – Daniel Fahrenheit** **Key texts:** A Super sticky mistake, All About Matter, What is the World Made of? What's the matter in Mr Whiskers' Room? Itch	**Water Worlds** **Animals including humans – digestive system, teeth, and food chains** **Enquiry type – pattern Research using secondary sources** **Key Scientists – Ivan pavlov** **Key texts:** Anatomicum Junior, Kay's Anatomy, Gut garden, Your brilliant Body: Your Growling Guts and Dynamic Digestive System
Y5/6 A	**Space Race** **Space** **Enquiry type – research using secondary sources** **Key Scientists – Tim Peake** **Key texts:** Counting on Katherine, A Day in the Life of an Astronaut, Mars and the Distant Stars, Dr Maggie's Grand Tour of the Solar System, Professor Astro Cat's Frontiers of Space, Planetarium (Junior Edition)	**Righteous Royalty** **Forces** **Enquiry type – comparative and fair testing** **Key Scientists –Isaac Newton** **Key texts:** The Tin Snail, Fantastic Forces and Incredible Machines, Fearsome Forces, Disgusting and Dreadful Science: Gut-wrenching gravity and other Fatal Forces, A question of science: Why doesn't the moon fall down?	**Our Extreme World** **Animals including humans – Changes into old age** **Enquiry type – pattern seeking** **Key Scientists – Virginia Apgar** **Key texts:** Anatomicum Junior, Kay's Anatomy, The bright and bold Human Body: The Reproductive System	**Chocolate** **STEM – Time saving Technology** **Key Texts:** How was that built,	**Terrific Toys** **Properties of materials** **Enquiry type – identifying and classifying** **Key Scientists –Spencer Silver** **Key texts:** The Element in the Room, Kensuke's Kingdom	**Wonder** **Living things and their habitats – Lifecycles and process of reproduction** **Enquiry type – observation over time** **Key Scientists –David Attenborough** **Key texts:** Lifecycles- Everything from start to finish
Y5/6 B	**Take Flight!** **Electricity** **Enquiry type – pattern seeking** **Key Scientists –Nikola Tesla** **Key texts:** Cool Circuits and Wicked Wires, How does a lighthouse work? Nikola Tesla Greta Lives in Graphics	**Conflict, Healing and Hope** **Light** **Enquiry type – comparative and fair testing** **Key Scientists –Ibn al-Haytham** **Key texts:** Step into Science: Light, Edison, How do we use light?	**Dear Greenpeace** **Living things and their habitats – grouping by characteristics** **Enquiry type – identifying and classifying** **Key Scientists – Carl Linnaeus** **Key texts:** Animalium, How are animals grouped? In the Animal Kingdom series, One of a kind	**Survival Mode** **STEM – To infinity and beyond** **Key texts:** The international Space station, Space Explorers: 25 extraordinary stories of space exploration and adventure, Looking UP: An Illustrated guide to telescopes	**Volatile Vikings** **Animals including humans – circulatory system** **Enquiry type – Research using secondary sources** **Key Scientists – Marie M Daly** **Key texts:** Anatomicum Junior, Kay's Anatomy, Pig Heart Boy	**Influence** **Evolution and inheritance** **Enquiry type – observation over time** **Key Scientists – Rosalind Franklin** **Key texts:** Amazing Evolution – The Journey of life, One Smart Fish, The Molliebird, Evolution