

# What does Science at



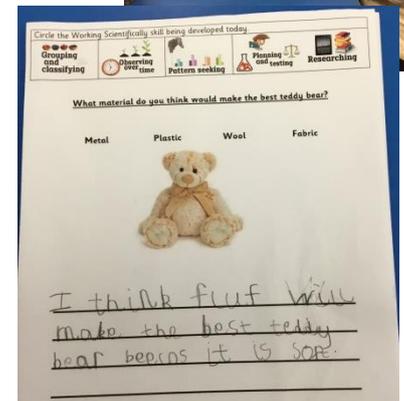
look like?

## 1. The curriculum: What do we teach, when and how?

In Reception, we develop children's skills in 'Understanding the World' – looking closely at patterns, changes, differences; exploring materials and living things; talking about how things work; and becoming familiar with experimentation.

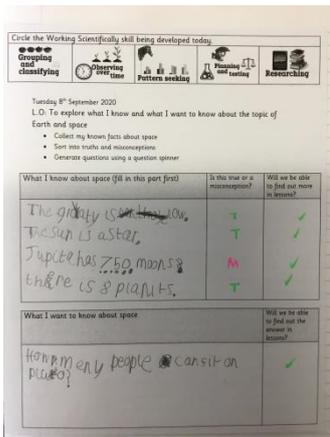


From years 1 to 6, science is taught as a discrete subject with each class studies 4-5 topics over the year. Each topic lasts around one half term, with children beginning by sharing their prior experience and devoting a large portion of time to generating questions to be answered over the term. Children's questions and wonders are displayed on the classroom's working wall, serving as a permanent celebration of the wonder and curiosity that drives science lessons at Lark Hill.



## 2. Creativity & Challenge in Science

Creativity is often attributed to the Arts, where there aren't strict right or wrong answers. In science, we prioritise teaching truthful and up-to-date scientific fact; teachers model accurate vocabulary in every lesson. However, there is plenty room for creativity. In fact, it's possibly the number one aspect that keeps advancements in science in the wider world.



To enhance creative thinking, science lessons are at the forefront of developing problem solving in children from EYFS up to year 6. All investigations begin with the children posing an open question that can be tackled by a number of different routes. Their group work helps practise speaking and listening skills in the pursuit of discovering one or more right answers. The use of question spinners guide the children towards answerable questions that naturally have the intrinsic reward of being answered in the classroom.

Other ways the children demonstrate creativity in science are through games such as Odd-One-Out from Explorify,



which encourages boundless thinking in the application of fact. Teachers can interlink this type of creativity with challenge, using this as an assessment tool to support and extend thinking.

## 3. SEND & Inclusion

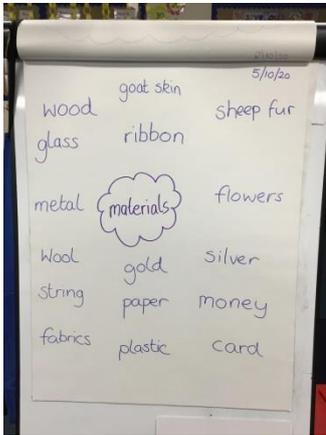
The 5 types of scientific enquiry should not be only accessible through certain levels of literacy. To ensure children develop these skills discretely from other subjects, teachers work to remove barriers to learning. This could mean providing children with vocabulary scaffolds, supporting children's speech and language targets or using images or drama to make conceptual connections.

To ensure all children's needs are accommodated, teachers plan specifically for children with a SEN support plan when planning their topics. In addition, children are provided with opportunities to contribute to school-wide policy in science through pupil voice.

## 4. What would you see in the classroom?



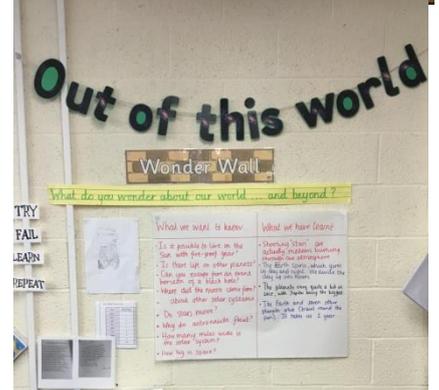
While each classroom is naturally different and each class studies different content, there are clear consistencies around school. Every classroom features a working wall where children's questions and knowledge are displayed alongside key vocabulary. In books, the 5 working scientifically (WS) skills are displayed at the top of the page, with the children reflecting on each lesson's key skill. In addition to classroom displays, there is a communal showcase display exhibiting work children have been inspired to carry out in their own time or with their families.



Walking into any science lesson at Lark Hill, you would find high-quality accurate vocabulary being used by children and adults to inform rich talk around the topic. Children are asking questions regularly, and are encouraged to share and explore these questions organically between themselves, as

the skill of researching is developed in them.

In practical and creative work, children come across discoveries of their own and have their questions answered or generate further lines of enquiry. When working with equipment, safety precautions are modelled by the adults.



Most importantly, in the classroom you would see a healthy mix of success and failure. The children gain important experience and grow due to valuing the process of try – fail – learn – repeat.

**"Science is about discovering and making things others don't know about."**

## 5. How much, how often?

Year 4/5 Science topics 2019-2020

Topic	Timing
1 Earth and space (include emphasis on gravity)	Autumn term
2 Electricity	Spring 1
3 Habitats	Spring 2
4 Sound	Summer term

Progression of skills and conceptual understanding will be available 16/7/19.

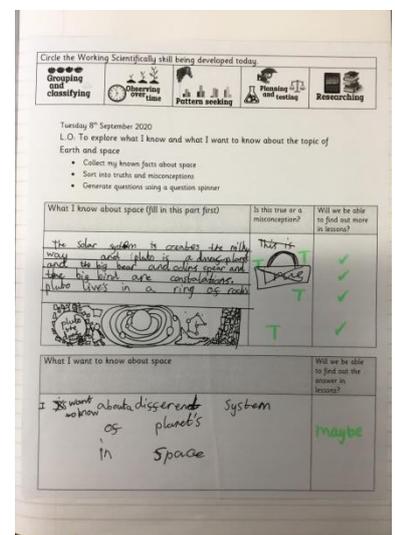
Year 4/5 Science topics 2020-2021

Topic	Timing
1 Earth and space (include emphasis on gravity)	Autumn term
2 Change in states (S, L, G)	Spring 1
3 Digestive system (incl teeth)	Spring 2
4 Sound	Summer term

Progression of skills and conceptual understanding will be available 16/7/19.

Science lessons are typically delivered once a week for the majority of a half term, in an afternoon slot where more than an hour can be given to longer practical work. A topic can last between 5 and 8 weeks, during which time children's prior knowledge is built upon and most of their (answerable) questions are answered. Misconceptions from the first sessions are addressed and the teacher's planning is adjusted to decide the correct pitch going forwards.

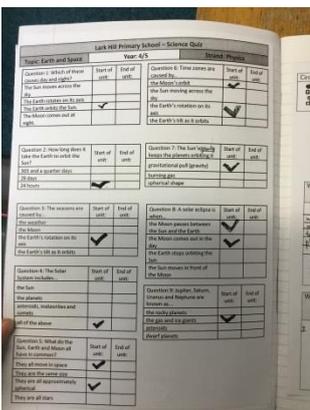
In our mixed classes in key stage 2, children are taught topics on a two-year rolling program. This ensures all children receive the National Curriculum expectations of study by the time they leave in year 6.



**"Science is exploring and understanding more about the past, before humans were around."**

## 6. How do we know how children are doing? How do they know themselves?

From the first lesson of a topic, children receive specific feedback on where they are in their learning journey. When children offer facts they already know around a topic, teachers use the school-wide approach of pink and green highlighters to confirm misconceptions and truths respectively.



During lessons, there is a lot of verbal discussion and live feedback from the teacher in order to maintain scientific accuracy around a concept, or keep an investigation on the right tracks.

One of the explicit scientific skills we teach is the interpretation of results. This develops the children's independence in checking for reliability and success throughout an experiment.

To track long term attainment and progress, teachers use a book-end style quiz for each topic and log developments against the knowledge and conceptual understanding (KCU) statements on SIMS. At the end of the year, teachers log children's attainment in the working scientifically (WS) skills.

## 7. Cross-curricular links and Enrichment

The children's weekly experience of science often extends to other pockets of time, including keeping up with current affairs on Newsround or consolidating knowledge and extending curiosity with optional homework projects. At Lark Hill, we love to share effort and intrigue from the child with as big an audience as possible. We often take work to other teachers and SLT, share pieces in weekly assemblies and publish work on the walls, the website and SeeSaw.



Basic graph interpreting and designing skills from maths lessons are applied in science lessons when recording results. Together with English, there are half-termly opportunities to practise a non-fiction text type within the science unit. Furthermore, the working scientifically skills themselves directly support the transferrable skill of scientific literacy; for example, how can we trust a claim in the media to be true?

In order to support the nationwide drive for more children, especially girls, taking up careers in science and engineering, KS2 children are invited to join the ever-popular STEM club. Through after school activities, where we create and break things that take our interest, to inviting specialists in from industry, children are inspired further. In the past, children have been involved in British Science Week, World Space

Week and the Great Science Share for Schools. Science is closely linked to English with the initiative to become effective science communicators, sharing knowledge with new audiences.



**"The more we learn about our world, the more we can help others."**