

Larkhill Primary School

Science Policy

Key Document Details:

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The current National curriculum document says:

‘The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils’ understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, this maybe through additional practice, before moving on.’

(National curriculum page 3)

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

At Larkhill we aim to deliver a Science curriculum in which:

- skills build progressively overtime and are revisited frequently to ensure retention
- teachers have secure subject knowledge of all 3 areas of the science curriculum (physics, chemistry and biology) which enables them to teach high quality lessons where science vocabulary and knowledge is explicitly taught
- the scientific skills of questioning and enquiry are carefully planned, taught and assessed with confidence and at the appropriate level
- knowledge of the world around them is developed through STEM activities in all areas of the curriculum allowing children to experience, enquire and embed skills and vocabulary throughout the year
- develops a love of science; to enthuse children and make learning fun.
- builds on children’s curiosity and sense of awe in the natural world.
- ensures children experience all five scientific enquiries: observation, testing, research, classifying and identifying and pattern seeking by becoming scientists in the classroom.
- makes learning purposeful, to make cross curricular links and for children to experience ‘real life’ concepts. (Maths, English, Computing in particular)

- increases children's scientific vocabulary and the language of science.
- ensures children use a range of equipment accurately and safely through hands on investigations and observations.
- develops learning in the outdoors; to increase children's confidence and natural curiosity of the world around them.
- gives children varied opportunities, through active participation. All children are exploring and following their own lines of enquiry. At times investigations are child led.
- makes sense of the world they live in and understand the processes and reasons why things happen.
- understands and make a difference to the world e.g. how to look after the environment, how to stay fit and healthy.
- develops a range of skills through the working scientifically stand of the curriculum: measuring, analysing, presenting and reasoning.
- develops children's aspirations of potential careers in science through talking about the work of scientists and how they can make a difference to others.

Teaching and Learning:

- Science is taught in blocks during term 3 and 6 on a 2 year rolling programme to years 1/2, 3/4 and 5/6 based on the 2014 National Curriculum objectives.
- In terms 1 and 4 there will be a whole school science day which will be split into 2 sessions. The first will focus on a specific working scientifically skill and the second session will be a STEM afternoon that involves stem activities related to previous science topics taught.
- In terms 2 and 5 there will be a STEM afternoon where the focus will be linked to prior learning in order for teachers to embed vocabulary and skills previously taught.
- In terms 1,2, 4 and 5 science will be taught for half an hour a week to embed previous learnt vocabulary or develop scientific skills and knowledge.
- Science lessons should be rich in questioning to develop a deeper understanding of concepts, engaging and exciting.
- Learning should be inclusive for all learners, where differentiated activities or teacher/TA support is planned to ensure all children make progress. Children who grasp concepts quickly will be challenged through application activities/questions. This will give children opportunities to reason, explain and demonstrate their learning.
- Children should have a range of group and individual tasks, where children are solving problems, communicating with their peers and involved in hands on practical science. This will be recorded in floorbooks and individual topic books.

- All lessons should be purposeful and inject a sense of excitement and anticipation as to what the children may be learning next.
- All lessons should be focused around the knowledge objectives of the National curriculum and also the working scientifically skills- how children are going to grasp the concepts in the lesson? Where possible- links to real life should be made and children should be working as scientists to promote independence in problem solving and thought processes.
- Opportunities for cross curricular learning and STEM activities are encouraged and for children to learn through discovery and play. Children should have opportunities to pose questions and have time to find the answers to these questions for themselves- deciding what line of enquiry they need to take. Some lessons may involve inviting in scientists, specialists and visitors to inspire the children and learn about potential careers in the science field to raise aspirations.

Safety:

- Children will be taught to use scientific equipment safely during practical activities.
- Class teachers and teaching assistants will check equipment before use to ensure it is safe to use, all damages will be reported to the science lead and the defective equipment will be taken away from children.
- A simple risk assessment will be carried out for all practical activities and any perceived hazards will be actioned appropriately.
- Safe practice must be promoted at all times.
- **The ASE publication, “Be Safe!” has been adopted as the school’s safety policy in science.**

The Learning Environment:

- The learning environment should be stimulating with a range of recorded work and evidence of the different enquiry types on working walls with focused vocabulary and scientific language.
- The working wall should display the knowledge organiser and be updated after each lesson.
- Vocabulary needs to be displayed for the entire topic.
- Display all year round to add vocabulary and key pieces of work/evidence.
- Children should be subject to a safe learning environment, where equipment is stored safely and easily accessible.
- Equipment should be selected by the children at times so they can make decisions about the best materials to use for each task. Children should be posing

questions and have access to higher order thinking activities to stimulate their curiosity and awe of the subject

Planning and Assessment:

- Teachers will follow the 2-year cycle and MTP set by the curriculum lead and science coordinator.
- Planning will encourage teachers to think about the core knowledge and skills for each lesson
- The knowledge organisers will include all the information that children will learn over the topic – these have been created by the science lead with input from the teachers
- Children’s knowledge will be assessed at the start of the topic by completing a knowledge quiz which will be based on the knowledge organisers.
- The quizzes will be repeated in a variety of ways throughout the topic (orally/in groups/independent) and will be used at the end of the topic to assess knowledge.
- Alongside lesson by lesson assessment for learning, teachers will decide whether children are working below, at or above the National Curriculum expectations for their year group. There is no greater depth for science.
- Children’s work is evidenced in a variety of ways in their science books, photos and floor books.
- The learning objectives in the book are highlighted in a green highlighter if the children have fully understood the concept and orange if they have not quite understood fully.
- The floor books will hold work from children and comments. This will not be marked as it will be monitored in lesson and used for assessments. Teachers will just initial the page and write T/TA or I
- All written work in individual books must be marked regularly and be of benefit to the child. If a next step is required for children to achieve the learning objective one will be provided, if it is not needed or will not benefit the learning within the national curriculum objectives, it is not required.
- Marking must be in line with the school’s marking policy.

The Role of the Science Co-ordinator:

- To be enthusiastic about science and demonstrate good practises.
- Create working MTP that can be adapted and supportive to staff. They will also include working scientifically skills and a variety of lessons/ activities.
- Create knowledge organisers and quizzes to match the MTP

- Track progress and attainment through the school and hold staff accountable for progress of all children.
- Monitor displays and science learning opportunities throughout the school.
- Conduct book scrutinies and ensure books show progression, support and opportunities for children to master and apply their learning.
- Co-ordinate assessment procedures and record keeping so as to facilitate progression and development through the school.
- Ensure the quality of teaching and learning in the school is of a good or better standard.
- Maintain resources and order new to support teachers teaching the curriculum (this includes sourcing external funding)
- To Coordinate external science visitors; plan science weeks/days, and STEM afternoons.
- Support staff with providing science CPD and updates, encourage staff by sharing good ideas and organising in service and external training where required.
- Be aware of national and local developments through reading relevant materials and attending courses and hub meetings.
- Liaise with science coordinators from other schools to compare and share good practice.
- Facilitate parental involvement by organising workshops.
- Work to achieve equality of opportunity throughout the school.
- Look for opportunities for children to be involved in science weeks and joint school events.
- Promote STEM and cross curricular learning through the school by developing a STEM rolling programme that links with the Science rolling programme.
- Ensure science policy is reviewed and updated regularly.
- To inspire children and raise their aspirations in science based careers.
- Ensure teachers are providing safe practice through their lessons and seek advice where needed.

Resources:

- Science resources will be organised into areas of use and kept centrally in the main area of the school. The bigger items are located in the DT room by Sarum class.
- Additional resources can be sourced through the Science Hub – Contact Lisa Thain, Durrington school (runs the science cluster group).

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