

Longford Park Primary School Policy Document Science



Longford Park Primary School Policy Document Curriculum Overview

The Curriculum

At Longford Park Primary School we provide a creative curriculum based around the Cornerstones Curriculum.

In 2014-15, with the new National Curriculum being introduced by the Government, we have been working hard to refresh our school approach and provision for pupils. As part of this work we have decided to implement the new Cornerstones Curriculum, a nationally recognised approach for delivering outstanding learning opportunities for children.

What is the Cornerstones Curriculum?

The Cornerstones Curriculum is a creative and thematic approach to learning that is mapped to the new 2014 Primary National Curriculum to ensure comprehensive coverage of national expectations. Our new curriculum will be delivered through Imaginative Learning Projects (ILPs) which will provide a rich menu of exciting and motivating learning activities that make creative links between all aspects of our children's learning.

We believe children learn better when they are encouraged to use their imagination and apply their learning to engaging contexts. Our new curriculum will provide lots of learning challenges throughout the academic year that will require children to solve problems, apply themselves creatively and express their knowledge and understanding effectively across the curriculum.

Cornerstones also provide a rigorous essential skills framework that outlines the end of year expectations in all subjects. These essential skills are tied to activities and are age related so that staff can track children's progress and identify their individual learning needs.

How it Works?

Children will progress through four stages of learning in each ILP - Engage, Develop, Innovate and Express. To find out more about these stages please click on the link through to Cornerstones website:

<http://www.cornerstoneseducation.co.uk/Learning-Philosophy.aspx>

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1. Overview

- The delivery of Science throughout the school will be guided by the National Curriculum together with Cornerstones and within the context of the Longford Park Curriculum Policy.
- A coordinator will lead the development of this subject.
- The delivery of this subject is the responsibility of each class teacher.
- Each pupil will be entitled to equality of access to this subject.
- Lessons will be delivered in a safe and appropriate manner. Pupils will be made aware of safety procedures for the benefit of themselves and others.
- Outside expertise will be used as appropriate.

2. Aims and Objectives

The aims of the science curriculum are:

- to provide appropriate and stimulating scientific experiences which encourage pupils to make sense of the world around them.
- to develop a positive attitude to scientific enquiry and an awareness of the influence of science in everyday life
- to deliver activities that meet the requirements of the national curriculum in a way that is appropriate to the needs and interests of all pupils and which challenge them to fulfill their potential
- to develop pupils' scientific knowledge and understanding
- to develop pupils' investigation skills
- for pupils to apply their scientific knowledge and skills to solve problems in a wide variety of contexts
- to develop pupils' explanatory and communicative skills
- for pupils to be able to work both collaboratively and independently on scientific tasks
- for pupils to develop a caring attitude to the environment and living things
- for pupils to develop an understanding of safe ways of working and to take increasing responsibility for managing their own investigations safely
- to use scientific contexts to develop and consolidate the basic cross curricular skills of literacy, numeracy and ICT.
- to use the school grounds and local park which has the River Sowe, flower beds, trees and shrubs for practical experiences.

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3. Learning

Pupils will be provided with a range of learning experiences. These will include first hand experience of:

- exploratory play to gain experience of a situation or article and to develop their own ideas
- experimentation to try out ideas and find out what happens
- investigation to test ideas or hypotheses in an increasingly systematic way
- focused observation to develop the ability to notice detail and changes that take place over time
- focused practical tasks to promote understanding of a concept or skill
- sorting and classifying to group things by observable characteristics
- discussion and debate of ideas and conclusions to consolidate understanding and develop the ability to explain clearly
- presenting the results of their work in appropriate and varied ways
- gaining respect for evidence and appreciating the views of others
- working collaboratively and independently
- using secondary sources to widen experiences, enhance understanding and provide evidence; providing opportunities for individual and group research; providing examples and illustrations from wider contexts than those possible in the classroom and immediate environment; providing examples and illustrations requiring the use of specialised technology.

4. Teaching

- In KS1 and KS2 teachers follow the Cornerstones science planning along with their 'Love to Investigate' investigation packs. The Cornerstones planning have built in progression.
- Foundation stage 'science' learning will have a strong emphasis on developing basic exploration and investigation skills and high quality observations as set out in the early learning goals. A combination of adult and child initiated science themes are followed throughout the two years of the Foundation stage cycle.
- Approximately 1 ½ hours a week at KS1 and 2 hours at KS2 will be spent on science
- Science activities will be organised using a variety of grouping strategies that are most effective to deliver the learning objectives for all abilities.
- Careful risk assessment will be made to manage any risks involved in practical activities.
- Investigation skills will be developed through planned instruction of skills appropriate to the age and ability of pupils.
- Key vocabulary will be displayed pertinent to each topic and pupils will be encouraged to use the technical vocabulary in all levels of communication.
- There will be frequent opportunities for pupils to make choices and take decisions both collaboratively and independently.

The teaching of science should help to develop scientific skills of;

- Hypothesis, questioning and prediction
- Planning and carrying out investigations
- Observing and measuring
- Presenting results by means of tables, charts and using ICT
- Evaluating results and drawing conclusions

Through developing science skills the pupils should acquire knowledge and understanding of;

- Scientific enquiry
- Life processes and living things
- Materials and their properties
- Physical processes

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In addition science provides the opportunity for communication, application of mathematics, use of ICT, problem solving, questioning, the development of higher order thinking skills and co-operation with others.

5. Planning

Teachers to follow the Cornerstones science planning and 'Love to Investigate' packs related to their current topic.

Short- term planning is produced by the class teacher.

At KS1 the emphasis is on practical and oral work and the development of scientific enquiry (50%) At KS2 the emphasis is still on scientific enquiry but children will develop a range of skills.

6. Assessment, Recording and Monitoring

Throughout each module teachers will monitor pupils' progress in scientific knowledge, understanding and skills by;

- Observation during lessons
- Marking of work
- Discussion with the pupils
- Learning objectives are identified and a summary judgment for each module will be noted for each pupil in relation to these. This information will form the basis of end of term assessment to be passed on to the next teacher.
- Assessment will be based on lesson objectives and is the responsibility of the class teacher.
- The records of 'Love to Investigate' assessment grids to be passed on to the next teacher.
- Moderation exercises are carried out with colleagues to ascertain age-related expectations.

The leadership team and coordinator will monitor progress by;

- Regular book trawls
- Lesson observations
- Analysis of 'Love to Investigate' assessment grids.
- All assessment data is held on Assessment Manager for tracking and analysis of science attainment throughout the school.

7. Teaching and Learning styles

A variety of teaching styles is used to teach science. The main focus is to provide practical and investigative activities that enable the children to develop their knowledge, understanding and skills through first hand experiences. Activities take account of the fact that children learn in different ways. (Visual, Auditory and Kineasthetic.)

This will involve:

- Whole class teaching
- Enquiry based research
- Discussions
- Use of a variety of forms of data such as graphs, statistics, pictures
- Use of ICT
- Practical experiments, problem solving and analysis of results

To ensure children of all scientific abilities are provided with suitable learning experiences (AGT, SEN, EAL etc.)

- Tasks should be open ended and differentiated according to ability
- Groupings should be varied and flexible to suit the needs of the individual.
- TAs should where possible be used to support groups of children

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8. Equal opportunities

It is the responsibility of all teachers to ensure that all pupils irrespective of gender, ability, ethnicity and social circumstance have access to the curriculum and make as much progress as possible. Science provides opportunities to draw on the different experiences of the children.

9. Inclusion

This will be addressed through the school's Inclusion Policy.

Whenever possible materials and artefacts used will reflect a varied cultural dimension e.g. food, musical instruments and clothing.

Equality Statement

At Longford Park Primary School, we aim to be fully inclusive ensuring equality in all educational experiences, to celebrate diversity and encourage tolerance. All members of our school community should feel proud of their identity and individuality and be able to participate fully in school life.

We aim:

- To ensure that everyone within our school community is included and valued.
- To enable every child to reach his/her potential through outstanding teaching and learning opportunities, exciting experiences and a personalised curriculum.
- To provide a safe, caring and stimulating learning environment.
- To encourage and empower parents to become partners in their children's learning.
- To enable our children to go on to play a positive role in the local, national and global community.

10. Special Educational Needs

Notice will be taken of targets within a pupil's SEND targets. Children will be given the necessary support to access the curriculum and allow them to carry out tasks at their own level.

11. Gifted and Talented

Provision will be made when necessary for pupils to extend their experiences beyond that of the majority of the class by one of the following:

- reducing the level of support provided and thereby increasing the need for independent thinking
- increasing the level of knowledge to be gained and communicated
- applying knowledge to an unfamiliar context
- setting more challenging criteria for presenting information
- Leading group investigations.

12. Health and Safety

- The school follows the advice published in 'Be Safe' as recommended by the LEA. Teachers need to make risk assessment for situations not covered in 'Be Safe'.
- All teachers will be expected to refer to this publication when planning activities and assessing for any risk to pupils. The booklet will be kept in the staffroom.
- Further free Health and Safety advice can be sought from CLEAPSS
- Pupils will be made aware of safety issues that arise in topics or activities and will be trained to use the appropriate equipment and carry out tasks in a safe and responsible manner.
- Pupils will be increasingly required to identify safety considerations in their planning as they progress through the school.

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13. Resources

Resources, including large equipment, are kept in a labeled science drawer unit, in a locked external garage. The key is kept on the playground key chain, located on the staff suite door. Items for specific year group modules are kept in classrooms. (Teachers have an inventory.)

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14. Future Developments

Staff will continue to review the Cornerstones planning and also ensure that objectives are covered using the science overviews for their year group.

An emphasis on AT1, and how this is recorded, should be a priority .Development will also include:

- the continued development of extension activities for AGT pupils for each module
- the continued development of assessment criteria in all modules
- The development of assessment activities for modules to inform on going and end of year teacher assessments
- Linking the science curriculum with other subject areas to allow cross curricula learning and creative curriculum.
- The school grounds, which include a fenced off garden area and a large field with hedging. Nearby access to the local park which has the River Sowe, flower beds, trees and shrubs to aid the delivery of the Life Processes and Living Things section of the NC.

This document is part of the Longford Park Curriculum Development documentation and as such should be read in conjunction with relevant whole school policies.

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