



## ***Lealholm Primary School Policy for Science***

### **Introduction:**

As Lealholm Primary School moves into the 21<sup>st</sup> Century, so too does science. We endeavor to promote and embed the five outcomes of Every Child Matters so that through quality teaching and learning experiences every child be healthy can stay safe, enjoy and achieve, make a positive contribution and achieve economic well-being.

In addition our science curriculum is specifically designed to promote personalized, self-generated learning. Dedicated time is given to independent research, practicing of skills and applying of knowledge and understanding during each unit of work.

Time is also dedicated to responding to the diverse nature of 21<sup>st</sup> Century life so that modern aspects of science can be addressed or developed in depth.

### **Aims:**

The school should ensure that all children:

- Try and make sense of phenomena, seeking explanations and thinking critically about predictions and introduce ways of testing, organising and interpreting their ideas and findings in an attempt to find solutions to problems.
- Use scientific language and mathematical skills including technical vocabulary and conventions.
- Develop respect for the environment and living things and for their own health and safety.
- Critically evaluate ideas, which may or may not fit available evidence.
- Provide opportunities where scientific ideas can be related to real life problems and build on their natural curiosity.

### **Differentiation:**

Science is differentiated with the particular, individual needs of each class in mind. Differentiation may include:

<b>Task</b>	<ul style="list-style-type: none"><li>♦ processes:<ul style="list-style-type: none"><li>○ open vs. closed</li><li>○ knowledge vs. skills</li><li>○ higher order vs. lower order.</li></ul></li></ul>
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<b>Resource</b>	<ul style="list-style-type: none"> <li>◆ resources to support the same learning objective or task</li> <li>◆ resources according to learning styles</li> <li>◆ equipment to accommodate learner needs/accessibility issues</li> <li>◆ areas of class/ school (location).</li> </ul>
<b>Assessment</b>	<ul style="list-style-type: none"> <li>◆ forms of assessment – oral, written, non-verbal, presentations</li> <li>◆ different/ levelled mark schemes.</li> </ul>
<b>Pace (sequence)</b>	<ul style="list-style-type: none"> <li>◆ starting points</li> <li>◆ routes through the same task.</li> </ul>
<b>Support</b>	<ul style="list-style-type: none"> <li>◆ scaffolding to support progression</li> <li>◆ amount of time spent with individuals</li> <li>◆ use of other classroom staff (e.g. EAL support)</li> <li>◆ combinations of students.</li> </ul>
<b>Extension</b>	<ul style="list-style-type: none"> <li>◆ different objectives/ task ceilings.</li> </ul>
<b>Research</b>	<ul style="list-style-type: none"> <li>◆ level of independence required to complete tasks</li> <li>◆ sources of information</li> <li>◆ method of selection/choice.</li> </ul>
<b>Dialogue</b>	<ul style="list-style-type: none"> <li>◆ level of interaction with or between students (interdependent learning)</li> <li>◆ use of modelling/scaffolding</li> <li>◆ Questioning: <ul style="list-style-type: none"> <li>○ teacher directed</li> <li>○ student generated</li> <li>○ Socratic questioning.</li> </ul> </li> <li>◆ complexity of language used</li> <li>◆ feedback – depth/source.</li> </ul>
<b>Grouping</b>	<ul style="list-style-type: none"> <li>◆ combinations of students</li> <li>◆ roles – cooperative learning tasks: <ul style="list-style-type: none"> <li>○ expert/instructor (peer teaching)</li> <li>○ coaching.</li> </ul> </li> </ul>
<b>Self-direction/ negotiation</b>	<ul style="list-style-type: none"> <li>◆ self-assessment students find own current level</li> <li>◆ students set own learning objective/target</li> <li>◆ student generated questions.</li> </ul>

Pupils are treated as individuals and are supported through differentiated teaching and learning opportunities providing additional personalized quality first teaching and learning.

### **Features of science in the Foundation Stage:**

Science in Foundation Stage is in line with the documentation for the Foundation Stage, coming under the heading 'Knowledge and Understanding of the World'; following a three year rolling programme. Children have chance to engage in hands on activities and explore both indoor and outdoor environments.

### **Features of science in Infants and Juniors:**

Science is often linked to topic work to fit with our cross-curricular approach Science so children can consolidate, apply and develop their skills or knowledge and understanding. Where this is the case, these links should be shown in teachers planning for the curriculum areas involved.

Children are given many opportunities to investigate scientific phenomena through planned 'hands on' activities. Where possible, children will devise and carry out their own investigations during

lessons and in activity stations. The mode of working is a mixture of class teaching, individual work and co-operative group work.

Children are provided with first hand experiences of scientific vocabulary and they are challenge to use this in appropriate contexts, written and verbal. Relevant discussion is encouraged to allow children to construct their understanding and address misconceptions.

Teaching takes place in different environments and makes use of the 'outdoor' classroom.

Opportunities are given for children to think critically and creatively throughout science lessons.

Outside community/local links for specialists to share scientific knowledge and resources are encouraged.

### **Health and Safety:**

The school is responsible for teaching science in a healthy and safe environment with reference to appropriate risk assessments for activities likely to incur possible risk. Staff prior to any visits outside the classroom must undertake risk assessments. Teachers will be able to refer for guidance to the school Health and Safety policy, national guidelines and information given by North Yorkshire County Council. Health and safety issues are recorded on planning sheets.

### **Equal opportunities:**

All pupils will be given equal access to the experience of science regardless of the gender, race or disability.

The planned programme must encourage the children's development of personal and social skills, be fully inclusive and give equal access for pupils to access learning.

There will also be times when the individual needs are met through differentiated tasks. Both approaches need to be used to ensure that all children, including the least and most able, can be working to their full potential in all science lessons.

### **Standards:**

Children will progress through these levels at an individual pace and should strive to attain a level 4 at the end of Key Stage 2 and a level 2 at the end of Key Stage 1.

The National Curriculum splits science into four strands: Sc1 – Scientific Enquiry, Sc2 – Life Processes and Living Things, Sc3 – Materials and their properties and Sc4 – Physical Processes. The attainment targets for Levels 1-5 can be found in the National Curriculum document or online at:

Standards and progression can also be seen in the Science APP document (Sc1 strand only).

### **Assessment, monitoring and recording:**

Foundation 2 use assessment through the Foundation Stage Profile, discussion and observation.

Children's performance in science is reported to parents termly at consultation evenings and annually through a written report.

The school adopts a more 'hands on' approach to science allowing for maximum discussion and investigation of scientific skills and concepts. Children will be given opportunities to record in a variety of ways (video, audio, photographic).

The science co-coordinator and senior management are responsible for observing practise and monitoring the quality and impact of science teaching and learning.

The Head teacher supports the school in school improvement and continued professional development.

The science co-coordinator attends training for subject leaders held by the LA when appropriate and disseminates this within school staff meetings. Additional training events are also held within the staff-training programme or as part of staff meetings. These events are informed by the monitoring of teaching and learning, local and national initiatives.

Assessment is related to the school assessment's timetable.

### **Resources:**

There is a range of resources to support the teaching of science.

Most science equipment is stored in the science area.

Each area of the science curriculum has a 'topic box' where specialist equipment is stored to enhance science teaching and learning.