

Intent	<p>At Seaton Delaval First school we will teach a science curriculum that allows all children to:</p> <ul style="list-style-type: none"> ▪ retain and develop their natural sense of curiosity about the world around them by facilitating discussion. ▪ develop a set of attitudes which promote scientific ways of thinking, including objectivity, perseverance and the importance of teamwork. ▪ become effective communicators of scientific ideas using scientific vocabulary, facts and data. ▪ continue to build a body of scientific knowledge and understanding which will serve as a foundation for future enquiry. ▪ develop understanding of the nature, processes and methods of science through different types of science enquires that help them to answer scientific questions about the world around them. ▪ develop a respect for the environment and living things. ▪ be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
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Believing and Achieving Together

Signed:

Date:

Review Date:

Science Policy

Introduction

This document is a statement of aims, principles and strategies for teaching science at Seaton Delaval First School. This policy is reviewed annually.

Aims and objectives

How we will achieve our intent?	<ul style="list-style-type: none"> ▪ Staff to take part in CPD to develop and extend subject knowledge. All staff to register with reach out CPD and be given staff meeting time to explore this resource. ▪ Low stakes, retrieval questions used in every science lesson to allow the children to develop their recall of science knowledge, making changes to long term memory. ▪ Science boxes in each classroom, containing retrieval questions covering every topic (as they are taught) to be used as a task when children finish their work or when there are few minutes spare in the day. ▪ A cycle of lessons that build upon progress, not only week by week, but from year to year. ▪ The full range of scientific enquiry skills taught, using documents from the Ogden trust to support this. ▪ Half termly monitoring of science provision across the school by science subject lead. ▪ Focus Education 'Assessing science knowledge' tests used once a year in Summer 1 to sit alongside our retrieval questions used weekly. This will aid staff in making an overall science judgement. ▪ Utilise our links to parents to show the children different applications of science in the real world. ▪ Knowledge organisers for each topic shared with the children and stuck in their books as a point of reference throughout the topic
What we will see in the classroom?	<ul style="list-style-type: none"> ▪ Children will enjoy and be enthusiastic about science in our school. ▪ They will talk about science using correct vocabulary. ▪ There will be clear progression of children's work over time. ▪ Children's work will show a range of topics and evidence of the curriculum coverage for all science topics (books, tapestry and talking with children) ▪ Children will become increasingly independent in science, selecting their own tools and materials, completing pupil lead investigations and choosing their own strategies for recording. ▪ They will be able to make links with science used in the real world and develop a sense of how this can apply to them.

Equal opportunity

We are committed to providing a teaching environment conducive to learning. Each child is valued, respected and educationally challenged regardless of ability, race, gender, religion, social background, culture or disability.

PSHE and citizenship

Science contributes to the teaching of PSHE and citizenship. Through the teaching of science, children have the opportunity to discuss and learn about the importance of healthy eating, exercise and lifestyles. Children have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. Children also learn about recycling materials, care for our environment and respect

for other people. Through the teaching of science, children learn about the principles of energy efficiency, water conservation, waste reduction, litter control and the careful use of the environment.

ICT

ICT enhances the teaching of science in our school significantly. We use software to classify and sort across various topics. This is helpful when we investigate processes which are impractical to do directly in the classroom. Children use ICT to collect data, produce tables, graphs and evaluate their work. Children and staff also use the 'interactive whiteboard' to support and enhance the learning of scientific concepts.

Teaching science

Science is taught using the National Curriculum. Teachers plan and assess their work through their year group specific topics which are linked to the broader overall topic where possible. This is the over view of what will be taught and when over the academic year 2020-2021. Catch up topics as a result of COVID 19 are included.

	Step back in Time		Let's create		Our World	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	<p>The most relevant early years outcomes for science are taken from the following areas of learning:</p> <ul style="list-style-type: none"> • Physical Development • Understanding the World • Expressive Arts and Design <p>This will include</p> <ul style="list-style-type: none"> • To observe the effects of physical activity on their bodies. <i>Research</i> • To comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world. <i>Observing over time</i> • To talk about some of the things they have observed, such as plants, animals, natural and found objects. <i>Observing over time</i> • To talk about why things happen and how things work. • To develop an understanding of growth, decay and changes over time. <i>Observing over time</i> • To show care and concern for living things and the environment. <i>Identifying and classifying</i> • To begin to be interested in and describe the texture of things. • To eat a healthy range of foodstuffs and understand a need for variety in food. • To show some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health. • To look closely at similarities, differences, patterns and change. <i>Pattern seeking</i> • To know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. • To know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. 					
Year 1	<p>Everyday materials</p> <p><i>Fair and comparative testing</i></p>	<p>Seasonal Changes</p> <p><i>Observing over time</i></p>	<p>Catch up: To look at parts of a flower, what plants need to grow.</p>	<p>Plants</p> <p><i>Identifying and classifying</i></p>	<p>Animals including humans</p> <p><i>Ideas over time</i></p> <p><i>Famous scientist suggestion: Luigi Galvani</i></p>	<p>Seasonal changes</p> <p>Using assessment to address gaps identified.</p> <p><i>Observing over time</i></p>

					WS ideas over time Catch up Naming parts of an animal Identifying different animals	
Year 2	Catch up- begin with year 1 objectives Animals including humans Identifying and classifying	Animals including humans Research	Uses of everyday materials Identifying and classifying	Use of everyday materials Changing materials Fair and comparative testing	Plants Observing over time	Living things and their habitats Ideas over time Famous scientist suggestion: Arthur Tansley WS ideas over time Using assessment to address gaps identified.
Year 3	Catch up: living things and their habitats Year 2 objectives Research	Rocks Ideas over time Famous scientist suggestion: Mary Anning WS ideas over time	Light Pattern seeking	Plants Observing over time	Animals including humans Pattern seeking	Forces and magnets Fair and comparative testing
Year 4	Catch up: Yr 3 Rocks Year 3 objectives (rocks covered in home learning pack, start with assessing what they already know) Research	Electricity Fair and comparative testing	States of matter Identifying and classifying	Sound Pattern seeking	Animals including humans Ideas over time Famous scientist suggestion: Jane Goodall WS ideas over time	Living things and their habitats Identifying and classifying Using assessment to address gaps identified.

There are cross curricular links to other subjects such as Maths, English and design and technology, where children can apply their scientific skills. Staff teach this subject through 'Clive Davis' which is available within the staff folder. We try and make science practical, interesting and hands-on wherever possible. Differentiation reflects the ways in which children are enabled to learn the taught concepts and methods and in which 'rapid graspers' are challenged and learning deepened, for example, teacher questioning. We plan science to suit the needs of the children. At Foundation Level, science is an integral part of topic work and is taught using 'Early Learning Goals'. Teaching and learning is reflected in our weekly, medium and long term planning. Approximately 2 hours of science are taught across KS1 and KS2. Teachers are to assess and determine which subject needs more depth in the last half term as well as identifying any gaps in knowledge that need addressing. To enhance learning the children will experience at least two science trips whilst at this school.

Deepening subject knowledge

The children are able to use the scientific vocabulary across the curriculum and retain vocabulary learned throughout the year making comparisons with other science topics studied. Each classroom has science vocabulary displayed for the topic they are covering. They use skills and relational understanding to enable deep understanding, linking concepts and ability to new learning. They ask intriguing questions and can research the answers independently. Formative assessment strategies would distinguish those learners who had successfully mastered the new learning, and could clearly demonstrate. The teacher will provide opportunities to deepen and enrich their understanding recording evidence to reflect this.

Assessment and reporting

A system of pre-testing at the start of each topic takes place. Children are asked about their understanding and knowledge of the unit to be taught. This can be used as a level as to where the children are, before the topic is taught. Teaching and planning can be adapted wherever. Teachers and staff also use retrieval questions completed every lesson and the 'Focus Teaching' assessments which are administered in Summer 1 to assess the level the children achieve at the end of each term and overall. Outcomes are recorded and passed onto the next teacher and the science coordinator. At end of the academic year, teachers draw upon their assessments and supplementary notes made from the children's work to produce part of an end of year report. This is passed onto parents/carers and the child's next teacher.

Health and safety

When working with tools, equipment and materials in practical activities, children are taught about the hazards and risk control. Children are taught to recognise hazards and take steps to control the risks to themselves and others. Children are also asked

to explain the steps they take to control hazards. Teachers will annotate on their planning and action any foreseeable risks before completing an activity.

Resources

Resources are stored centrally in a cupboard on the main school corridor. Some resources directly linked to topic units are stored in teachers' classrooms. The library also contains science and science related books. Science catalogues and requisition sheets are available for teachers to order resources via the science coordinator and head teacher.

Coordinators role

The science coordinator at SDFS is responsible for:

- reviewing medium and long term planning
- maintaining, ordering and organising Science resources
- providing guidance and support for colleagues
- monitoring the quality of teaching and learning
- leading the development of whole school initiatives across the school

