ALDERMAN RICHARD HALLAM PRIMARY SCHOOL

ARH – Educating a community of life-long learners

Science Policy

2024 - 2025

Policy Reviewed: September 2024

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Science Policy

Introduction

Our school vision: Pupils will leave A.R.H. as happy, healthy and inspired young people who can confidently participate in the world as resilient, articulate citizens who have a life-long love of learning, creativity and discovery.

Our curriculum: Our curriculum is the vehicle to empower pupils with knowledge and skills. We strive to immerse young people in their topics which are designed to engage, provide real life links and progress all pupils' understanding.

'A.R.H. - Educating a community of life-long learners'

The importance of Science

Science is an important subject as it allows children the opportunity to explore and understand the world around them. It allows children to gain good scientific knowledge and develop ideas through questioning and investigating. Children therefore gain the tools that they need in order to obtain this knowledge whilst developing their resilience, independence and teamwork skills. At Alderman Richard Hallam we believe that Science is an entitlement to every child regardless of ethnic, origin, gender, class, aptitude or disability.

Aims

The aim of this policy is to ensure the teaching of Science is consistent across the school and lead to the following:

- To help our pupils grow in their scientific understanding.
- To prepare our pupils for our growing world of technology.
- To make links between Science and other subjects.
- To build on our pupils' curiosity and develop a scientific approach to problems.
- To develop the skills of investigation such as predicting, experimenting, interpreting, explaining and evaluating.
- To help extend and develop our pupils scientific concept of their world.
- To understand how scientific skills are transferred across each year group.

Roles and Responsibilities

The Headteacher and Governing Body have overall responsibility for Science, supported by the Science Leader.
The Science Leader is responsible for overseeing the delivery of the Science Curriculum through:

- Liaising with classroom teachers.
- Liaising with the curriculum team.
- Providing staff training where appropriate.
- Monitoring planning to ensure curriculum coverage.
- Carrying out book and Seesaw audits alongside planning to ensure cross-curricular links are optimised.
- Observing learning and teaching to ensure progress is being made within topics.
- Regular reviews of the curriculum through staff and pupil questionnaires and open dialogue.
- Speaking with the pupils about their learning.
- Subject leaders are responsible for progression and assessment within their subject area.

All teaching staff are responsible for:

- Planning and delivering the curriculum on a weekly basis during the terms it is taught and for making cross-curricular links where appropriate. Teachers use the progression and Routeway documents to inform their

planning which is carried out through detailed Active Inspire flipcharts. A planning flipchart template is given to ensure consistency across the year groups.
- Making amendments to planning in order to optimise learning opportunities when they arise.
- Ensuring there is appropriate challenge through adaptive teaching so all pupils make good progress and can access learning opportunities.
- Using the local area and outdoor learning as much as possible.
- Ensuring the curriculum is taught in an engaging manner which is in-line with the school ethos.
- Ensuring scientific skills have been linked and developed between each year group as Science progresses through the school.

Planning

We ensure that all objectives in the National Curriculum are covered through Science. Our planning process for Science is:

- Long term plans for the year; these are the topics that will be taught throughout the year. They give a number of weeks for the duration of the theme.
- Medium term plans for each topic hold the relevant learning and National Curriculum objectives. These highlight the activities to be covered and are assessed at the end of each topic. Teachers use the National Curriculum objectives and discuss how they will translate these into meaningful activities for the children. This is planned on our Routeway format. Using the Routeway, teachers then consider what will be the best learning sequence for their pupils. This has to incorporate: a formative assessment of children's' understanding, how the topic will be introduced (wonder afternoon, a 'wow' factor, that could be a visit, a trip, a focus day, an activity during Wonder Day or an external visitor), what the learning outcome will be – this could be an artefact, presentation, or experience for example and how the work of pupils is to be recorded in appropriate topic books. Once year groups have decided upon the learning sequence, parents are informed of the upcoming topic through a Parent and Carer Letter. This allows parents and carers to support their children and become involved in their learning.
- Year Groups meet weekly to plan the subsequent weeks work from the Routeway. Each weekly plan sets appropriate tasks to ensure all pupils can access the learning with a clear learning outcome. Lessons are engaging and taught using high quality resources.
- Planning shows adaptive teaching methods.
- Plans are monitored by SMT and the Science Leader.

How Science is taught at Alderman Richard Hallam

Alderman Richard Primary School will ensure coverage of the Primary Science National Curriculum by following the strands laid down in the current Programs of Study. Science will be taught as a discrete subject and linked within the topics being taught where appropriate.

<u>Foundation Stage</u>

Children will explore Science through making predictions, using their senses and investigating materials and their properties. Science is taught through the strand of, 'Understanding the World'. Science teaching is also linked to other strands of the EYFS Framework.
Teachers and Teaching Assistants support children to develop a solid understanding of things occurring around them in their day-to-day lives.
Children are encouraged to be creative and inquisitive as they participate in activities. Children are encouraged to use their natural inquisitiveness, whilst taking part in exploratory play in specific scientific areas as well as areas which link across the EYFS framework.

<u>KS1 (Year 1 & 2)</u>

During Key Stage One, children observe, explore and ask questions about living things, materials and the world around them. They begin to work together to collect evidence to help them answer questions, find patterns, classify and group objects, research using a variety of sources and become familiar with the concept of a fair test. Children will use reference material to find out about scientific ideas. They will share their ideas and communicate

them using scientific language, drawings, charts, and tables. Key areas of Science to be covered include: Everyday Materials, Plants, Animals, including humans, Seasonal Change and Living Things in Their Habitats.

Lower Key Stage 2 (Year 3 & 4)

Children are encouraged to extend the scientific questions which they ask and answer about the world around them. They will explore everyday phenomena and the relationships between living things and familiar environments and begin to develop their ideas about functions, relationships and interactions. Children will make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources. They will make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including new equipment such as thermometers and data loggers. Children will begin to look for naturally occurring patterns, relationships and decide what data to collect to identify them. This will help children to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. Key areas of Science to be covered include: Plants, Animals, including humans, Living Things in Their Habitat, Rocks, Light, Forces and Magnets, Electricity, Sound and States of Matter.

Upper Key Stage 2 (Year 5 & 6)

The principal focus of Science teaching in Upper Key Stage 2 is to enable children to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. In Upper Key Stage 2, children should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. Children will take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate, choosing the most appropriate equipment and explaining how to use it accurately. They will identify patterns that might be found in the natural environment. They will make their own decisions about what observations to make, what measurements to use and how long to make them for and whether to repeat them. Key areas of Science to be covered include: Plants, Living Things in Their Habitat, Animals, including humans, Earth and Space, Light, Forces, Electricity, Properties and Changes of Materials and Evolution and Inheritance.

Overview of units

Year 1	Working Scientifically	Plants	Animals including humans	Everyday materials	Seasonal Changes	
Year 2		All living things and their habitats	Plants	Animals including humans	Use of everyday materials	
Year 3	Working Scientifically	Plants	Animals including humans	Rocks	Light	Forces and magnets
Year 4		All living things	Animals including humans	States of matter	Sound	Electricity
Year 5	Working Scientifically	All living things	Animals including humans	Properties and changes of materials	Earth and Space	Forces
Year 6		All living things	Animals including humans	Evolution and inheritance	Light	Electricity

Assessment

Formative assessment is the basis for assessment in Science. Science work, where appropriate, will be recorded in Topic books and Seesaw; evidence can be written or photographic. Children reflect on their knowledge at the start and end of a topic to show the children's progression in Science. Progression documents are used by teachers to record the coverage and skills set taught of Science throughout the year.

Twice a year children are assessed in Science. An End of Year Expectation Sheet has been created which details the end of year expectation for Science for each academic year. Teachers use these to decide which children are on track to be in-line with, beyond or not working towards these standards. This assessment information is shared with the Science Coordinator and SLT so that appropriate support can be put in place.

Inclusion and Equal opportunities

Alderman Richard Hallam Primary School is proud of its inclusive approach to the whole curriculum and we aim to provide for all children so they can achieve as highly as they can according to their individual ability. We work to ensure that all children have the opportunity to gain scientific knowledge and understanding regardless of gender, race, class, physical or intellectual ability. We will ensure that expectations do not limit pupils' achievements, supporting where there is a need and extending children who need further challenging. Work is set to ensure all pupils can access the Science Curriculum through the use of adaptive teaching.

Health and Safety

Children should be taught the correct and safe use of equipment and the carrying out of simple safety procedures as an essential part of their Science lessons. It is the teacher's responsibility to ensure any investigations carried out are done in a safe way for the protection of their class. Children are encouraged to wash their hands when using Science equipment.

Science investigations are encouraged to be taken outdoors where possible. When Science investigations are conducted inside or outside, the teachers will ensure that appropriate measures have been taken place to ensure the children's safety.

Monitoring and Evaluating

The Science Leader monitors Science coverage throughout the year through the use of book, pupil conferencing, reflections and planning audits. These are taken mid-way through and towards the end of the academic year. Science Learning walks also take place throughout the academic year that focus on teaching and learning. Findings from these monitoring and evaluating activities are shared with year group leaders and SLT. Any support identified from these is put into place and a follow up check is completed to ensure the support has been actioned.

School Closure

In the event of a school closure, teachers will continue to provide planning and engaging learning for pupils using Seesaw. Through Seesaw, teachers will convert their lesson flipcharts to make them accessible from home as well as setting work to be completed. Pupils will then follow the lesson and complete the required work and submit this for feedback using their Seesaw account. Science lessons will continue to follow the National Curriculum. Pupils who do not have access to the Internet at home will be provided with high-quality work books to continue their study of the National Curriculum.

Upon school reopening following a long-term school closure, year groups will provide a Recovery Curriculum which is tailored to the needs of the pupils in their classes. This will firstly focus on the social, emotional and behavioural needs of the class followed by an assessment of the pupils' academic needs. This will then inform planning so that all pupils can catch up any lost learning.

Policy updated September 2024 H Ekins (Science Leader)

The policy will be reviewed again in September 2025