



THE HERMITAGE and THE OAKTREE SCHOOLS

Inspire, Learn, Achieve

Science Policy

Person responsible:	Science Subject Leaders
Date adopted:	Spring Term 2023
Date of last review:	Spring Term 2023
Date of next review:	Spring Term 2025

Science is the study of the natural and physical world. At The Hermitage and Oaktree Schools we recognise that children are naturally scientific, curious and keen to make discoveries of the world around them through their experimental play and questioning. We believe that children acquire scientific knowledge in an atmosphere that promotes first-hand experience. It is the role of the teacher, year team leaders and subject leader to create a stimulating environment which enables children to scientifically explore, make observations and have discussions about the world around them. Children learn to ask questions and begin to appreciate the way in which science will affect the future on a personal, national and global level.

Aims

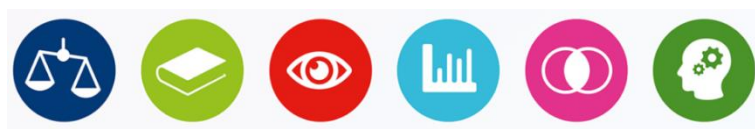
Pupils at The Hermitage and Oaktree Schools are taught to:

- Ask and answer scientific questions
- Plan and carry out scientific investigations using equipment correctly
- Evaluate evidence, including first hand and secondary data, and draw conclusions, presenting their results clearly and accurately
- Explore the world around them using enquiry skills and find out things using a 'hands on' approach
- Acquire sensitivity and responsibility towards themselves and the environment
- To develop awareness of social and moral issues connected to science and technology.

Curriculum content

Science will take place from Year R to Year 6, according to the Early Year Foundation Stage Curriculum and National Curriculum programmes of study. The National curriculum will provide the vehicle through which scientific processes, attitudes and concepts can be taught and developed.

In both schools, the children are encouraged to develop their Scientific skills. In all classrooms the symbols for these skills are displayed and a different symbol is introduced and used in each lesson. The children become familiar with these symbols enabling them to use their skills confidently to develop their Science knowledge.



The Hermitage School

Planning

- Children will be grouped in various ways for different science activities (mixed ability, ability, groups, in pairs, independently) always ensuring equal opportunities.
- School resources and other published schemes are available to support planning, but planning should be completed within the school planning proforma. This should show differentiation within lessons.
- Practical apparatus are regularly used and are easily accessible to children. Wherever possible children themselves are encouraged to select the resources and equipment appropriate to the task.
- Each science lesson will focus on an aspect of knowledge, Sc2-4, and an aspect of enquiry, Sc1 (one or two of the process skills) and relevant scientific vocabulary.
- All children will use investigative skills throughout each science topic, and work with a group or independently to plan their own investigations. At least one formal investigation will be planned and recorded per unit of work.
- Emphasis will be on practical aspects of science, but the skill of recording is also essential to science.
- Wherever possible, links to other subjects are made to enhance the teaching of science.

Organisation of Teaching and Learning

- Science is approached through a process of investigation, problem solving and enquiry. Children should be free and eager to ask questions about their topic, and investigations should stem from these questions.
- At The Hermitage, we strive to make connections with other areas of the curriculum, and therefore science units are part of a broader unit of work. For example, our history topic, 'Under Attack' in Year 4 links with the science of animals, including humans, and includes describing the simple functions of the digestive system in humans, identifying the different types of teeth in humans and their functions and constructing and interpreting a variety of food chains, identifying producers, predators and prey.
- As a starting point to any science topic, the teacher will take into account the understanding, ideas and conceptions that the child may have already, as well as any questions the children would like to find the answers to during their learning.
- Each new unit of work will have a knowledge organiser, giving the relevant vocabulary and diagrams to aid the understanding of the new unit.
- All Science work will have a title referring to the content of the lesson e.g. Investigating Sound
- Each lesson will have a slide showing a learning objective, success criteria and to outline differentiation in the lesson.

The Oaktree School

Planning

Children will learn through a direct personal experience to make sense of the world around them. Children are encouraged to:

- Develop an enjoyment and curiosity for science and the world around them
- Develop independent and creative thinking about scientific concepts
- Develop positive attitudes towards science including: curiosity through questioning; respect for evidence through keeping an open mind; critical reflection through a willingness to reconsider methods used
- Develop the investigative skills of planning, obtaining and presenting evidence, considering evidence and evaluating findings (National Curriculum - Working Scientifically)
- Develop a knowledge and understanding of animals including humans, living things in their habitats, plants and seasonal changes and about everyday materials and their uses
- Develop their communication skills through use of scientific language
- Assess risks and take action to reduce risks to themselves and others

How teaching and learning is organised

In the Foundation Stage, the scientific aspects of the children's work are related to the objectives set out in The Early Years Foundation Stage Curriculum: 'The World'. Science is taught through practical activities and investigations with an emphasis on a 'hands-on' approach. This takes place in small groups and also through whole class input sessions. Learning about the world around them is also facilitated through the children's own exploration, particularly outside, which is a key aspect of the Foundation Stage ethos.

Science in Key Stage One is taught using a variety of styles. We use the Cornerstones scheme of work to plan and carry out the teaching of Science across the school. Children may work as a whole class usually at the beginning and end of a session. Often the children work in groups during the main part of the session to apply their knowledge and skills. Scientific enquiry skills are taught through practical activities where appropriate and investigations are carried out as part of the taught units.

There is a science investigation table in each classroom which children use in groups and independently to develop scientific enquiry skills and science knowledge. These investigation tables are changed every two weeks so that children access 3 different tables during a topic. The tables are independently accessed during Carousel and in Reception, Green Go Learning times.

Equal Opportunities:

At our schools we teach science to all children, whatever their ability. Science forms part of the school curriculum which provides a broad and balanced education for all children. Through our teaching we provide learning opportunities for all children to make progress. We recognise that there are children of a range of abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways:

- Setting common tasks which are open-ended and can have a variety of responses
- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks)
- Grouping children by ability and setting different tasks for different ability groups where appropriate
- Providing resources of different complexity, matched to the ability of the child
- Using teaching assistants to support the work of children or groups of children

Assessment, recording and reporting

Teachers will carry out knowledge and enquiry based assessments according to the assessment schedule.

- Teachers will carry out assessments as they feel necessary. This can be done through concept mapping, concept cartoons, discussion situations, through questioning or by observing the investigation process.
- Teachers will use assessment information to address preconceptions and misconceptions children may have and ensure children are being challenged and supported.
- Science work is carried out in science books stored in each classroom.
- In Reception, evidence is collected through observations recorded on 'Tiny Tracker' and relevant assessment notes related to the Profile are recorded.
- Feedback is given to the parents at teacher-parent meetings in the Autumn and Spring terms and also in the Summer term report clinics (Oaktree School). This feedback is also reported to parents via the annual reports. At the end of each year teachers report the children's attainment and progress to the parents and the child's next teacher.

Health and safety

All science activities are risk assessed by both teachers and children. Safety issues are checked, using the manual 'Be Safe' published by the Association of Science Education, and appropriate changes made where necessary.

A risk benefit analysis will be carried out for any offsite activities or visits.

Resources

The Hermitage School

The resources are stored in the STEM room. They are clearly labelled and can be used by any class in the school. The class teacher is able to take the box related to their current topic, providing that it is put back in the same condition. We are fortunate to have an extensive outdoor area and therefore where possible, lessons will make use of the outdoor environment.

The Oaktree School

Resources are centrally stored in labelled boxes in the Acorn Centre. Some of the topic boxes and equipment (related to the life and living processes) are stored in the Learning Bus. The Acorn Centre Library contains science topic books. Posters are kept in the large drawers in The Acorn Centre. ICT/computer resources are accessed through the computer suite or class ipads.

Science and inclusion

At our schools, we teach science to all children, whatever their ability and individual needs. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our science teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style and adaptation – so that we can take some additional or different action to enable the child to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.

We enable all pupils to have access to the full range of activities involved in learning science. Where children are to participate in activities outside the classroom, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

Monitoring and review

The coordination and planning of the science curriculum are the responsibility of the subject leader, who also:

- supports colleagues in their teaching, by keeping everyone informed about current developments in science and providing a strategic lead and direction for this subject;
- gives the headteacher an annual summary report in which s/he evaluates the strengths and weaknesses in science and indicates areas for further improvement;
- uses specially allocated regular management time to review evidence of the children's work.