



THE RACKHAM
C OF E PRIMARY SCHOOL

Science Policy

Policy Number: SCH 063

Date: September 2023

The Rackham C of E Primary School is committed to safeguarding and promoting the welfare of children and young people and expects all staff to share this commitment.

Purpose of the policy

Science is one of the three core subjects in the National Curriculum. This policy outlines the purpose, nature and management of Science at The Rackham C of E Primary School.

The school policy for Science reflects the consensus of opinion by all teaching staff. It has been drawn up as a result of staff discussion and has the full agreement of the Governing body. The implementation of this policy is the responsibility of the Head teacher and all teaching staff. This is to ensure consistency across the school.

The purpose of this policy is to:

- Set out a framework for all teaching and non-teaching staff, giving guidance on planning, teaching and assessment
- Demonstrate adherence to the National Curriculum objectives and guidelines
- Provide clear information to parents and carers about what their children will be taught
- Allow the governing board to monitor the curriculum
- Provide Ofsted inspectors with evidence of curriculum planning and implementation

This policy will be available on our school website: <https://rackhamprimaryschool.com/>

Subject vision

Science is a subject which offers us a means of interpreting and explaining our world. Consequently it is about observing, enquiry, method, investigation, research, creativity and communication. It is also factual, incorporating knowledge about living things, materials, physical processes; how our world is constructed and operates.

All children at The Rackham C of E Primary School will have equal access to Science. In the National Curriculum, Science is described under four headings: Working Scientifically, Chemistry, Biology and Physics.

- **Working scientifically** is concerned with experimental and investigative methods involving asking questions, observing over time, planning work, obtaining and considering evidence, pattern seeking and classifying and grouping. These skills will be taught using concepts derived from Chemistry, Biology and Physics.
- **Biology** is concerned with humans and other animals, plant life, growth, nutrition, reproduction, relationships, variation, adaptation – the ecology of our world.
- **Chemistry** is about grouping and classifying solids, liquids and gases, their uses, how they may change (for example when they are heated or cooled), mixtures, solutions and their separation.
- **Physics** involves the study of electricity, forces, magnetism, light, sound, rocks and **fossils** and Earth and space.

Aims and outcomes

At both Key Stage 1 and 2 Science can be taught as a separate subject or, when it is appropriate, it can be taught as an integrated theme.

At the Rackham, we aim to:

- help every child become a confident, competent, self-reliant adult

- provide an understanding of the world in which we live, the interdependence of life and acknowledge that science provides explanations for many phenomena
- promote and sustain a caring, trusting, safe environment where questions may be answered openly and honestly
- encourage children to recognise that people have different attitudes and values, and to learn to tolerate and respect these
- encourage open minded experimentation and investigation, and systematic enquiry
- develop in pupils the skills of observing, questioning, surveying, predicting, hypothesising, recording and drawing conclusions
- promote the acquisition of scientific knowledge and relate this to personal health and other features of everyday life
- encourage children to measure and record accurately, communicating findings in a variety of ways
- Increase awareness of patterns and relationships.

An investigative approach is the important factor where all pupils are taught and encouraged to develop the **working scientifically skills** from the White Rose curriculum map. Carrying out the whole process of an investigation will take place regularly with all children actively involved in their learning. **Working scientifically skills will be taught discretely and applied to investigations.**

By the time pupils leave the school, they should:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Teaching and learning

Science is taught by class teachers within either their mixed age classes or single age class. Staff will be following the White Rose Science Scheme of Work which has been divided into a two year cycle to ensure coverage and consistency. Each set of objectives will be taught over two sessions during the week focussing on vocabulary, knowledge and scientific enquiry. Plans will be adapted to consider the following:

- Pupil's personal experiences, knowledge and understanding must be taken into account in planning for learning. The pupil's knowledge and experience should be seen by him/her to be relevant and valuable.
- The pupil should have time to pursue tasks/investigations and the necessary resources.
- There will be time to develop scientific vocabulary in every lesson
- Pupils should be given the opportunity to cooperate in small groups on practical tasks as well as be given the opportunity to keep personal records of work, pursue their own assignments and make their own plans from time to time.
- Pupils should have first-hand experience of the physical world whenever possible although practical tasks should not completely fill all available time to the exclusion of other resources for learning.
- Environmental learning is particularly well resourced at Rackham Primary School given its location and habitats within the school grounds and immediate vicinity. All children should have the opportunity to make use of these facilities during each key stage.

Curriculum overview

Here at The Rackham, pupils will follow a science curriculum that gradually develops learning, the outcome being the acquisition of knowledge and skills that enable each pupil to enquire, research and analyse. Pupils

will have a coherent understanding of living things, materials, physical processes; how our world is constructed and operates. Children will know more, remember more and understand more.

Early Years Foundation Stage (EYFS)

In Foundation Stage, Early Learning Goals are embedded into the children's learning. The main area of focus for science will be the Understanding of the World.

Children at the expected level of development will:

- Explore the natural world around them, making observations and drawing pictures of animals and plants;
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

This will be taught by giving the children opportunities to explore the natural world, ask and answer questions and make scientific enquiries.

Key Stage (KS) 1

In KS1, pupils will investigate:

- Animals including humans
- Living things and their habitats
- Plants
- Materials
- Seasonal Changes

The topics we teach in science are outlined in the programmes of study/curriculum map for science.

Key Stage (KS) 2

In KS2, pupils will investigate:

- Animals including humans
- Living things and their habitats
- Plants
- Materials
- Rocks
- States of matter
- Electricity
- Earth and Space
- Sound
- Light
- Forces and magnets
- Evolution and inheritance

The topics we teach in science are outlined in the programmes of study/curriculum map for science.

Programmes of study

This is a curriculum map for science for our school taken from the White Rose Schemes of Work. These are split into a two year cycle to ensure coverage and consistency.

Cycle 1	Autumn term	Spring term	Summer term
EYFS	Understanding of the World	Understanding of the World	Understanding of the World
Year 1/2	Human Body Seasonal Change Materials	Plants – light and dark Animals Seasonal change	Living things and their habitats Growing up Seasonal change
Year 3/4	Skeletons Movement Nutrition and diet Food waste States of matter	States of matter Sound Light	Light Digestive system Habitats Deforestation Food chains
Year 5/6	Living things and their habitats Electricity Renewable energy	Light and light pollution Space Global warming	Reproduction Circulatory system Diet, drugs and lifestyle

Cycle 2	Autumn term	Spring term	Summer term
EYFS	Understanding of the World	Understanding of the World	Understanding of the World
Year 1/2	Animals need for survival Plants Materials Caring for the planet	Plants Growing and cooking	Humans Sustaining plastic Light and dark Wildlife Plants
Year 3/4	Group and classify living things Data collection Electricity Energy	Rocks Fossils Soils Data collection	Plants Forces Magnets Biodiversity
Year 5/6	Variation Adaptation Fossils Properties of materials	Reversible and irreversible changes Forces Sustainability	Animals including humans Life cycles Themed projects

Cross-curricular links

At The Rackham, there are often opportunities to teach science in other areas of the curriculum. School policies on Inclusion, Health and Safety, P.S.H.E, Computing, English, Mathematics and the foundation subjects all have contributions to make to science in the primary school. This may include:

- English: development of key vocabulary and root words, e.g. micro-organism
- Maths: analysing data, creating graphs and findings averages
- Computing: collecting data, using the internet for research, watching videos
- PSHE: links to healthy eating, drugs, reproduction, life cycles and RSE
- Geography: links to animals, plants, rocks, soils and the water cycle
- DT: links to electricity, forces, systems
- Music: link to sound and hearing

- RE: links to views on evolution
- PE: links to healthy lifestyles, the human body and exercise

Assessment and recording

Assessment

The Rackham uses assessment to enable staff to understand what pupils have learnt before, what they need to learn now and what they will learn next.

Formative assessment

Formative science assessment is ongoing and will be used to inform teachers in relation to their planning, lesson activities and differentiation. Teacher assessments are made termly based on the evidence of a number of activities. Assessments will be based on observations, discussion, records and products as appropriate. Assessments are recorded centrally using the **Bromcom** system. These are then reviewed by class teachers, subject co-ordinators and other teachers as necessary.

Summative assessment

Summative assessment is completed at the end of each unit, based on the scientific skills that the medium-term plan requires as a key focus. These will be in line with the White Rose assessments. This data will inform areas to readdress in the next topic as starters or as a consolidation lesson at the end of the unit.

At the end of each school year, pupils will be assessed within 1 of the following bands:

- Pre-Key Stage (PKS)
- Working Towards the curriculum (WTS)
- Working at Expected (EXP)
- Working at Greater depth (GDS)

Marking

Children receive regular feedback and The Rackham marking follows the school's marking policy.

Recording

At The Rackham, records of the pupil's learning will be recorded in many different ways. This could be:

- In their science books
- In Foundation Stage Learning Journals
- On Tapestry

This may take the form of photographs, pictures, notes or written work, and may be worksheet-based or fully independent.

Resources

Textbooks and other equipment

We are following the White Rose Scheme of Work which comes with work sheets and end of unit assessments. These will be used throughout the school. All Science equipment is stored in a central resource area (the Science cupboard). It is the responsibility of the teacher concerned to ensure that any equipment withdrawn for use in the classroom is carefully replaced after use.

At The Rackham a variety of posters, audio-visual and computing resources are available for use as a source of ideas, for teacher reference and as pupil material where appropriate to the activities that have been planned.

External speakers, local museums, trips

At The Rackham, we plan a variety of trips to the local area to further our scientific learning. We have also linked with Witchford Village College to use their facilities with our Year 5/6 pupils.

Roles and responsibilities

Headteacher

The headteacher at our school will:

- Support the subject leader but also hold them to account for the effectiveness of the subject
- Support staff through the provision of training and resources
- Monitor the planning and delivery of the subject
- Ensure the requirements of the National Curriculum are met
- Ensure this policy is reviewed according to the timescales set out

Subject leader

The subject leaders at our school will:

- Prepare and review subject policy and curriculum plans
- Promote the study of the subject throughout the school
- Monitor the teaching and assessment of the subject
- Attend appropriate CPD
- Stay informed regarding developments in the study and teaching of the subject
- Evaluate resources
- Provide training and CPD to staff on the subject curriculum and its delivery, and keep them informed about subject developments nationally
- Assess the impact of the subject curriculum on pupils' learning and development
- Make presentations to governors on the subject and how it is being taught

Link governor

The link governor responsible for science at our school will:

- Monitor the impact of the subject across the school and on pupils
- Monitor teacher workload and professional development
- Ensure subject action plans are suitable
- Monitor the quality of resources
- Keep track of pupil and parent engagement with the subject
- Keep up to date with the curriculum (what's taught, why it's taught, and how it's taught)

Classroom teacher

Classroom teachers at our school will:

- Teach and assess the subject according to the principles laid out in this policy
- Report to the subject leader
- Maintain subject knowledge and appropriate CPD

Parents

The parent community at our school will:

- Make sure their children are prepared for learning

Inclusion

Teachers set high expectations for all pupils in science. They will use appropriate assessment to set ambitious targets and plan challenging work for all groups, including:

- More able pupils
- Pupils with low prior attainment
- Pupils from disadvantaged backgrounds
- Pupils with special educational needs (SEN)

- Pupils with English as an additional language (EAL)

Teachers will plan lessons so pupils with SEN and/or disabilities can study science, wherever possible, and ensure that there are no barriers to every pupil achieving.

Teachers will also take account of the needs of pupils whose first language is not English. Lessons will be planned so that teaching opportunities help pupils to develop their English, and to support pupils to take part in science.

Links to other policies

This subject policy links to the following policies and procedures:

- Curriculum policy
- Assessment policy
- PSHE policy
- Marking policy
- SEN policy

Monitoring and review

This policy will be reviewed by staff and governors every 2 years.

This policy will be reviewed and agreed in line with Government guidelines by the Governing Body.

Approved and signed by:

Headteacher



Signed:

Date: 1st February 2024

Chair of Governing body



Signed:

Date: 1st February 2024