



We are two inclusive schools, where individuals are welcome and celebrated.

Science Policy

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Document Change History

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Aims

- Develop an enquiring mind and a scientific approach to problems.
- Develop basic concepts and logical thinking.
- Develop interests, attitudes and aesthetic awareness.
- Acquisition of knowledge and learning skills.
- Pose questions and devise and carry out investigations to answer them.
- Interpret findings critically.
- Appreciate patterns and relationships.
- Communicate findings.

National Curriculum Attainment Targets/Programmes of Study

These detail four attainment areas:

1. Experimental and Investigative Science.
2. Life Processes and Living Things.
 - Understand plants: This concept involves becoming familiar with different types of plants, their structure and reproduction.
 - Understand animals and humans: This concept involves becoming familiar with different types of animals, humans and the life processes they share.
 - Investigate living things: This concept involves becoming familiar with a wider range of living things, including insects and understanding life processes.
 - Understand evolution and inheritance: This concept involves understanding that organisms come into existence, adapt, change and evolve and become extinct.
3. Materials and their Properties.
 - Investigate materials: This concept involves becoming familiar with a range of materials, their properties, uses and how they may be altered or changed.
4. Physical Processes.
 - Understand movement, forces and magnets: This concept involves understanding what causes motion.
 - Understand the Earth's movement in space: This concept involves understanding what causes seasonal changes, day and night.
 - Investigate light and seeing: This concept involves understanding how light and reflection affect sight.
 - Investigate sound and hearing: This concept involves understanding how sound is produced, how it travels and how it is heard.
 - Understand electrical circuits: This concept involves understanding circuits and their role in electrical applications.

The requirements listed below apply across the four attainment targets:

- Systematic enquiry.

- Science in everyday life.
- The nature of scientific ideas.
- Communication.
- Health and safety.

Creative Curriculum

Science is covered within Cornerstones as a core subject and is supplemented with investigative additional projects that link to the overarching theme. Where possible, links will also be made to other curriculum areas including RE and the other core subjects (English and Maths).

The backbone to our Creative Curriculum will be the '6Rs of Learning':

- Readiness
- Resourcefulness
- Resilience
- Responsibility
- Reflection
- Respect

Children will be encouraged to approach their work using the 6Rs so that the school can achieve our main aims, namely to equip each of our children with the skills required to be an independent and responsible citizen who will continue learning effectively throughout their lives.

Science through the curriculum

Use of ICT

Pupils will be given opportunities to support their work by being taught to:

- find things out from a variety of sources, selecting and synthesising the information to meet their needs and developing an ability to question its accuracy, bias and plausibility
- develop their ideas using ICT tools to amend and refine their work and enhance its quality and accuracy
- exchange and share information, both directly and through electronic media
- review, modify and evaluate their work, reflecting critically on its quality, as it progresses.

Literacy through science

(i) In writing, pupils will be taught to use correct spelling and punctuation and follow grammatical conventions. They will be taught to organise their writing in logical and coherent forms.

(ii) In speaking, pupils will be taught to use language precisely. In listening, pupils will be taught to listen to others, and to respond and build on their ideas and views constructively.

(iii) In reading, pupils will be taught strategies to help them read with understanding, to locate and use information, to follow a process or argument and summarise, and to synthesise and adapt what they learn from their reading.

(iv) Pupils will be taught the specialist and technical vocabulary of science and how to spell these words. They will be taught the patterns of language vital to understanding and expression in science. These include the construction of sentences, paragraphs and texts that are often used in science.

Maths through Science

- (i) In Science, there are parallels with maths through experience of problem solving, data handling, reading scales, graphs, charts and tables.

Resources

The class teacher is responsible for monitoring the resources for the half termly topics, studied by their class. Should there be a need for additional resources or replacements, this should be discussed with the subject leader.

Assessment

Assessment will be carried out in the following ways:

- At the end of each term/half term progress will be recorded using the Cornerstones assessment tool.
- As an on-going process throughout the topic when the opportunity arises (formative).
- In EYFS, assessment takes place throughout a topic and evidence is recorded on Tapestry.

Teaching and Learning Styles

Teachers are expected to employ a range of strategies and use their professional judgement to decide on the most appropriate. These will include:

- demonstration by both teacher and/or other pupils;
- class/group discussion;
- individual/group/paired/collaborative work;
- intervention by the teacher, where appropriate, to reinforce an idea or teach a new point;
- planning activities in order to allow different levels of achievement by pupils or to incorporate possibilities for extension work

Equal Opportunities and SEN

All children should be given the opportunity to learn in a creative and encouraging learning environment which embraces a range of teaching styles. This approach motivates and supports children's learning at all levels including Gifted, Able and Talented, EAL and those identified with a Special Educational Need.

Health and Safety

(i) It should be noted that certain items and materials may not be considered suitable for classroom use, or may need special preparation (e.g. bones). In such cases the "Be Safe" document should be consulted. A copy of this is in the Health & Safety file, kept by the Headteacher.

(ii) When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:

- about hazards, risks and risk control;
- to recognise hazards, assess consequent risks and to take steps to control the risks to themselves and others;
- to use information to assess the immediate and cumulative risks;
- to manage their environment to ensure the health and safety of themselves and others;
- to explain the steps they take to control risks.

Cornerstones Curriculum Coverage

Cycle A 2022-2023

| Class | | Aut 1 | Aut 2 | Spr 1 | Spr 2 | Sum 1 | Sum 2 |
|-----------|----------------------|--|---|--|--|---|--|
| Hedgehogs | Main project | Me and My Community (PSE) | Once Upon a Time (CL) | Starry Night (UW) | Dangerous Dinosaurs (UW) | Animal Safari (UW) | On the Beach (UW) |
| | Mini projects | Exploring Autumn (UW) | Sparkle and Shine (PSE) | Winter Wonderland (UW) | Puddles and Rainbows (UW) | Creep, Crawl and Wriggle (UW) | Moving On (PSE) Move It (PD) |
| Squirrels | Main project | Childhood (Hist) | | Splendid Skies (Sci, Hist, Geog) | | Coastline (Hist, Geog) | |
| | Mini projects | Everyday Materials (Sci) Mix It (A & D) Shade and Shelter (DT) Our Wonderful World (Geog) | Human Senses (Sci) Funny Faces and Fabulous Features (A & D) | Does it snow in Summer? (Sci) | How big is a raindrop? (Sci) How wild is the wind? (Sci) Are all leaves the same? (Sci) | Use of Materials (Sci) Flower Head (A & D) | Plant Survival (Sci) Animal Parts (Science) Beach Hut (DT) |
| Badgers | Main project | Through the Ages (Hist) | | Rocks, Relics and Rumbles (Geog) Misty Mountain, Winding River (Geog) | | Emperors and Empires (Hist) | |
| | Mini projects | Skeletal and Muscular Systems (Sci) Contrast and complement (A & D) | Prehistoric Pots (A & D) Cook Well, Eat Well (DT) One Planet, Our World (Geog) | Forces and Magnets (Sci) States of Matter (Sci) Ammonite (A & D) Vista (A & D) Making it Move (DT) | Grouping and Classifying (Sci) People and Places (A & D) Animal (A & D) Functional and Fancy Fabrics (DT) | Plant, Nutrition and Reproduction (Sci) Beautiful Botanicals (A & D) | Light and Shadows (Sci) Mosaic Masters (A & D) Greenhouse (DT) |
| Owls | Main project | Britain at War (Hist) | | Pole to Pole (Geog) | | Revolution (Hist) | |
| | Mini projects | Light Theory (Sci) Distortion and Abstraction (A & D) Eat the Seasons (DT) | Evolution and Inheritance (Sci) Bees, Beetles and Butterflies (A & D) Make Do and Mend (DT) | Electrical Circuits and Components (Sci) Inuit (A & D) | Environmental Artists (A & D) Engineer (DT) Our Changing World (Geog) | Can Fruit Light a Bulb? (Sci) | Revolution (A & D, DT, Geog) |

Cycle B 2023-2024

| Class | | Aut 1 | Aut 2 | Spr 1 | Spr 2 | Sum 1 | Sum 2 |
|-----------|----------------------|---|--|---|--|---|---|
| Hedgehogs | Main project | Me and My Community (PSE) | Once Upon a Time (CL) | Starry Night (UW) | Dangerous Dinosaurs (UW) | Animal Safari (UW) | On the Beach (UW) |
| | Mini projects | Exploring Autumn (UW) | Sparkle and Shine (PSE) | Winter Wonderland (UW) | Puddles and Rainbows (UW) | Creep, Crawl and Wriggle (UW) | Moving On (PSE) Move It (PD) |
| Squirrels | Main project | Towers, Tunnels and Turrets (DT) | | Bright Lights, Big City (Geog) | | Wriggle and Crawl (Sci) | |
| | Mini projects | Where do worms like to live? (Sci) | Can you make a paper bridge? (Sci) Portraits and poses (A & D) | Street view (A & D) Human survival (Sci) How do plants grow in winter? (Sci) Remarkable recipes (DT) Seasonal changes (Sci) | Rain and sunrays (A & D) What keeps us dry? (Sci) How does grass grow? (Sci) Taxi (D & T) | Animal survival (Sci) How does it move? (Sci) Plant parts (Sci) What is the life cycle of a ladybird? (Sci) Do insects have a favourite colour? (Sci) | What is camouflage for? (Sci) Do snails have noses? (Sci) Where do snails live? (Sci) Habitats (Sci) Can worms sense? (Sci) Animal parts (Sci) |
| Badgers | Main project | Invasion (Hist) | | Mighty Metals (Sci) | | Ancient Civilisations (Hist) | God and Mortals (Hist) |
| | Mini projects | Warp and weft (A & D) Interconnected world (Geog) Food and the digestive system (Sci) Sound (Sci) | Contrast and complement (A & D) Fresh Food, Good food (DT) | Can you block magnetism? (Sci) How mighty are magnets? (Sci) | Why do magnets attract and repel? (Sci) How mighty are magnets? (Sci) | Electrical circuits and conductors (Sci) Islamic art (A & D) Statues, Statuettes and Figures (A & D) Tomb Builders (DT) | Why did Icarus fall from the sky? (Sci) |
| Owls | Main project | Stargazers (Sci) | | Off with her head! (Hist) | | Blood Heart (Sci) | Hola Mexico (Music) |
| | Mini projects | Why are zip-wires so fast? (Sci) How does the Moon move? (Sci) How do we know the Earth is round? (Sci) How do rockets lift off? (Sci) Why do planets have craters? | How do levers help us? (Sci) Can we track the Sun? (Sci) Why do planets have craters (Sci) | Why does a compass always point north? (Sci) | How clean are your hands? (Sci) | How does blood flow? (Sci) What's in blood? (Sci) What can your heartrate tell you? (Sci) | How do we make red? (Sci) |