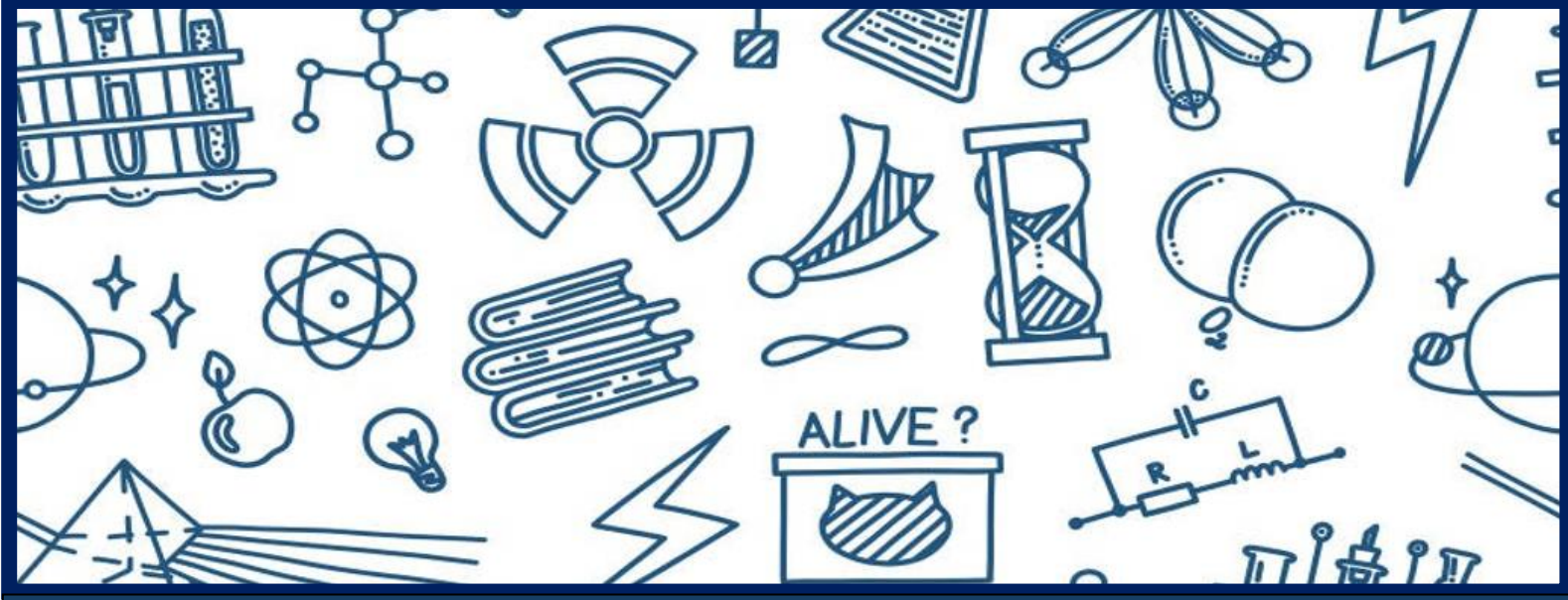


Science at Ashurst Wood Primary School

Science Curriculum Intent

Love of life

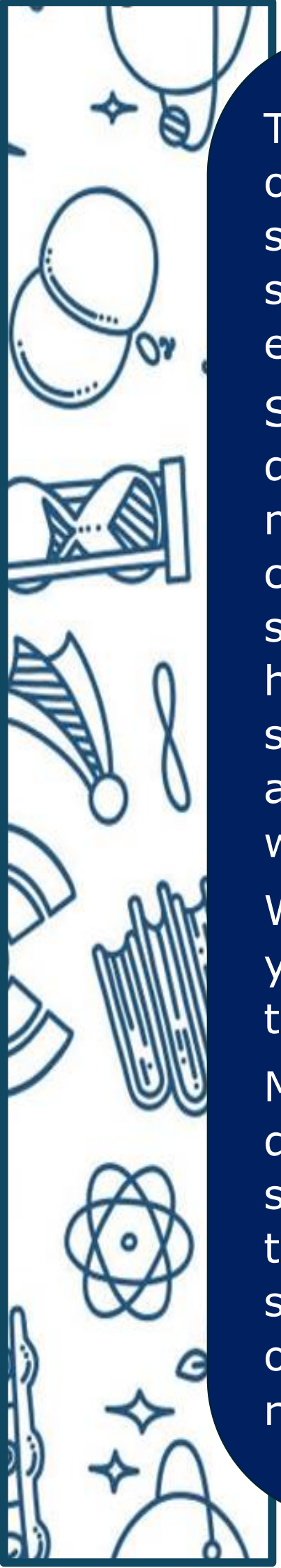
At Ashurst Wood, we aim to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of Science, today and for the future. Through science we aim to develop curious minds, an understanding of scientific vocabulary and aspiration to scientific careers.

Love of learning

Through science we aim to develop a love of nature and outdoor learning. All children are encouraged to develop and use a range of skills including observations, planning and investigations, as well as being encouraged to question the world around them and become independent learners. Specialist vocabulary for topics is taught and built up, and effective questioning to communicate ideas is encouraged. Concepts taught are reinforced by focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. This approach is regardless of ability or background.

Love of people

Science has changed our lives and is vital to the world's future prosperity, environmental stability and equality. Through science we aim to develop respect for the environment and empathy for others as well as an appreciation for human endeavour through the study of famous scientists. We will ensure all children receive a broad and balanced scientific curriculum.



Throughout the school we aim to offer an exciting and dynamic science curriculum designed to stimulate the interest and enthusiasm of our students.

Science is a core subject that demands a dynamic approach to make it interesting and challenging. Therefore, we always strive to make it as practical and hands-on as possible allowing students to investigate experiment and have fun finding out about the world within which they live.

We teach science weekly in single year groups. To support us we use the KPOW resources.

Much of our science curriculum is delivered in the Forest School sessions which supports the teaching of skills such as thinking scientifically, investigation, co-operation, teamwork and resilience.

Pupils will develop Scientific knowledge and understanding in seven key areas.

Animals, including humans

Identifying animals, their basic structure and their eating habits, as well as their basic needs for survival. Children learn about the life cycles of animals and their place in food chains.

Naming parts of the human body and recognising the function of skeletons, muscles, teeth and the digestive and circulatory systems. Learning about the importance of hygiene and of the right type and amount of nutrition. Children learn about the impact of diet, drugs and exercise on the body and study the life cycles of humans.

This key area covers the Year 1, Year 2, Year 3, Year 4, Year 5 and Year 6 subject content titled 'Animals, including humans' from the National curriculum.

Living things and their habitats

Identifying something as living and how it is grouped based on its characteristics, similarities and differences.

Naming different types of habitats, learning what they provide for life and the impact of habitats changing. Children learn about the life cycles and reproduction of animals and plants, and how this affects the variation of living things around us, past and present.

This key area covers the Year 2, Year 4, Year 5 and Year 6 subject content titled 'Living things and their habitats' and 'Evolution and inheritance' from the National curriculum.

Plants

Identifying different plants and their key structures, growing seeds and plants and understanding their requirements for growth. Recognising the function of different plant structures and understanding how plants reproduce.

This key area covers the Year 1, Year 2 and Year 3 subject content titled 'Plants' from the National curriculum.

Materials

Naming materials, describing their properties and understanding why materials have specific uses. Identifying how materials may change and the factors that may contribute to this, including changes of state within the water cycle. Children learn about different mixtures and how they can be separated based on their properties.

Identifying different types of rocks and their physical properties, and understanding how fossils and soil are formed.

This key area covers the Year 1, Year 2, Year 3, Year 4 and Year 5 subject content titled 'Everyday materials', 'Uses of everyday materials', 'Rocks', 'States of matter' and 'Properties and changes of materials' from the National curriculum.

Energy

Learning about light and its properties, how it enables us to see and how shadows are formed. Identifying the relationship between sounds, volume, pitch and vibrations, and how sound travels to the ear.

Recognising electrical appliances and the components that make up different circuits. Building electrical circuits and identifying factors that affect the output.

This key area covers the Year 3, Year 4 and Year 6 subject content titled 'Light', 'Electricity' and 'Sound' from the National curriculum.

Forces, Earth and space

Identifying changes across the seasons, and the weather and day length associated with each.

Recognising different types of forces and understanding their effect on objects, including the role of pulleys, levers and gears. Children learn about magnetic materials and that magnets attract and repel.

Learning about the movements of planets and moons within the solar system and how this relates to our day and night.

This key area covers the Year 1, Year 3 and Year 5 subject content titled 'Seasonal changes', 'Forces and magnets', 'Earth and space' and 'Forces' from the National curriculum.

Making connections

Finding the optimum: the science subject report (Ofsted, 2023) states that schools should ensure that teachers

'regularly connect new learning to what pupils have already learned. This includes showing pupils how knowledge from different areas of the curriculum connects.'

One of the ways in which we do this is through our Making connections units, which give pupils opportunities, beyond the National curriculum programme of study, to make connections between their science learning.

For science we teach the following units in single year groups

Ashurst Wood Primary School Science Long Term Plan						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Forces and space: Seasonal changes	Materials: Everyday materials	Animals: Sensitive bodies	Animals: Comparing animals	Plants: Introduction to plants	Making connections
Year 2	Living things: Habitats	Living things: Microhabitats	Materials: Uses of everyday materials	Animals: Life cycles and health	Plants: Plant growth	Making connections
Year 3	Animals: Movement and nutrition	Forces and space: Forces and magnets	Materials: Rocks and soil	Energy: Light and shadows	Plants: Plant reproduction	Making connections
Year 4	Animals: Digestion and food	Energy: Electricity and circuits	Living things: Classification and changing habitats	Materials: States of matter	Energy: Sound and vibrations	Making connections
Year 5	Materials: Mixtures and separation	Materials: Properties and changes	Forces and space: Earth and space	Living things: Life cycles and reproduction	Forces and space: Imbalanced forces	Animals: Human timeline Making connections
Year 6	Living things: Classifying big and small	Energy: Light and reflection	Living things: Evolution and inheritance	Energy: Circuits, batteries and switches	Animals: Circulation and exercise	Making connections

The 'Working Scientifically' element of the science curriculum is ongoing throughout KS1 and KS2. It is embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions.

Children 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.

Science in EYFS ELG: The Natural 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. Reflecting these goals, the focus in Science in the Early Years is on making observations and finding ways to record what they see and exploring similarities and differences.

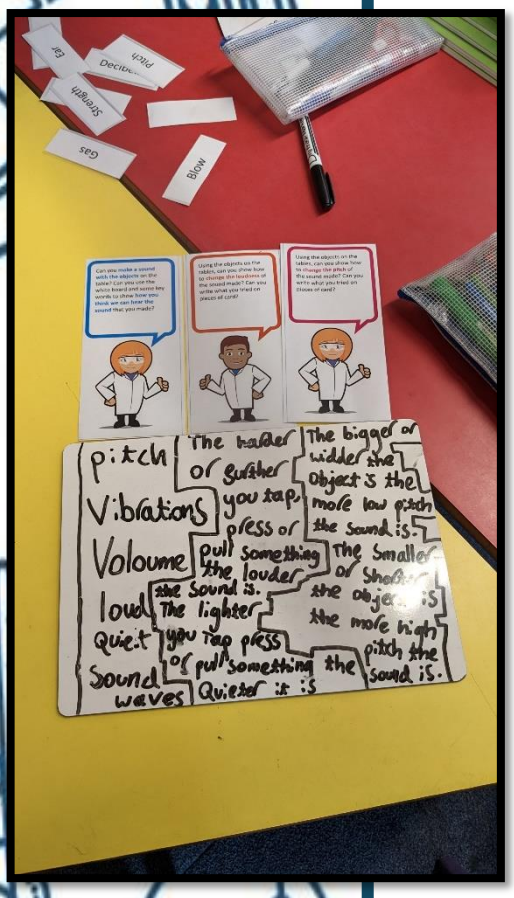
Throughout this, the children are encouraged to explore their world and ask questions. Children in the EYFS have a Forest School session every week.

Assessment in science

At Ashurst Wood we aspire to promote children's independence and for all children to take responsibility in their own learning. At the end of each unit of work, the children are given a set of assessment cards, which as a group, they must demonstrate their learning. These tasks enable the children to articulate scientific concepts clearly and precisely, assisting them in making their thinking clear, both to themselves and others.

Teachers also assess children's work in science both by making informal judgements as they observe them during lessons and at the end of each unit of work using the assessment tool mentioned.

At the end of each unit, the teacher makes a summative judgement about the work of each pupil in relation to the skills they have developed in-line with the National Curriculum in England 2014 and these are reported to parents as part of the child's annual school report. At the end of the year all assessments are recorded on Insight the school's tracking system.



What our children say

I explain what I have found using speaking and writing. I use relevant scientific language.

Science is fun to do because there are lots of things you can learn and make. The best part was making the bridges. We tested them.

It made me think!

I like doing experiments in science like when we found how long it took for the ice cube to melt.

I like experimenting stuff because it's fun to see how things turn out.

I use different equipment to measure accurately in standard units.

The experiments, slide show, PowerPoints and videos help me in science. Displays in the classroom have stuff we have learnt about and vocabulary.

I like building circuits and getting the bulbs to light up.

I love it when we learn about solids, liquids and gases because it's fun to do activities for it.

We learnt about our teeth, and I enjoyed making teeth out of salt dough. The molars were tricky to make!

I now know about my heart rate and that will help me when I am doing my triathlons.

Plants need water and sun to grow, and we are growing plants in the garden.

I like finding out new things in science.