Science curriculum skills progression at Eyam

Intent (updated 2024)

At Eyam school we believe that all children are scientists and want all children to love science. We believe that a high-quality, investigative science education provides the foundations for appreciating the world and the impact that science has had on our understanding of it. It is vital that pupils understand how we must act in order to protect that future for generations to come and the significant role that science plays in our everyday lives. As teachers our role is to promote questions and an investigative approach to learning – encouraging inquisitive learning and exploration through each scientific field: Biology; Chemistry and Physics. Through building up a body of foundational knowledge and concepts, pupils should be encouraged to recognize the power of rational explanations and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to use HOT skills to explain what they can see, predict how things might behave, analyse causes, rate data and refine conclusions. Science is the key to solving some of the biggest issues the world is facing and we want our children to develop the skills, knowledge and passion in science to go on and make big changes to those issues.

Therefore **our aim** in science is to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the 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 their world.
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future
- develop a genuine love for science and a curious and investigative nature to engage with and ask questions about the world in which they live.

Staff at Eyam ensure that all pupils experience a curriculum that is relevant to life today and the rapidly developing world they live in, as well as appreciating the history and context behind scientific theory (such as Newton's laws being devised concurrently with the outbreak of the plague in Eyam). We ensure pupils are immersed in technical and scientific vocabulary, which is a big part of our pedagogical approach, using an exciting and engaging curriculum to inspire curiosity and a lifelong love of science.

Our objectives in the teaching and learning about science are:

- Prepare our children for life in an increasingly scientific and technological world today and in the future
- Help our children acquire a growing understanding of the nature, processes and methods of scientific ideas.
- Help develop and extend our children's scientific concept of their world.
- Build on our children's natural curiosity and develop a scientific approach to problems.
- Encourage open-mindedness, self-assessment, perseverance and refining the skills of investigation – observing, measuring, predicting, hypothesizing, experimenting, communicating, interpreting, explaining and evaluating.
- Prioritise the use of scientific vocabulary and retrieval opportunities.
- Explore different recording and analytical techniques
- Develop confidence in using computing to investigate, record and analyse.
- Making links between science and other areas of learning and life, allowing for oracy and reading opportunities

Skills progression

We refer directly to the 'National Curriculum programmes of study 2014', as well as the 'Understanding of the World' aspects of the early years Foundation Stage Curriculum, using the sequence of skills suggested within each Key stage. We take account of the Non statutory guidance for science. Topics are taught on a two year rolling programme either as part of the whole school theme OR as a discrete subject. Staff plan according to current global issues as well as local interests, the intention is to focus on a STEM approach where possible, linking science, technology, engineering and maths. Children build on their scientific skills through each year, ensuring they know how to work scientifically.

Science Two year Plan

This is based the National Curriculum POS with curriculum end points identified and tracked over a two-year period in order to ensure coverage and progression.
planassessment.com to support planning

Year 1 24/25 26/27	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Hedgehogs EYFS KS1	Harvest / seasonal changes and light	Everyday materials and their properties: uses, changes of solids	Working scientifically	Plants: observing changes, conditions to grow	Animals including humans: health needs, exercise, teeth and sleep, offspring	Habitats: explore, compare
	Some seasons work to continue throughout the year to observe changes					
Owls LKS2	Plants: flowers, life cycles, plants, function	Animals and Humans: nutrition, skeleton and muscles	Rocks and fossils.	Light: reflection and shadows.	Electricity: simple circuits, appliances, switches, conductors	Forces and Magnets
Squirrels UKS2	Life cycles of insects and birds: classification and reproduction	Circulation	Properties of materials, properties, grouping, uses	Evolution and inheritance, fossil, adaptation	Forces: resistance, friction and gravity	Space: earth, day / night, moon

Year 2 23/24 25/26	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Hedgehogs EYFS KS1	Weather, months, seasons, changes	Materials: labelling, grouping, comparing, properties	The human body: labelling, naming, senses, hearing healthy diet, changes	Plants: identify name, structure	Animals: name, classify, changes	Wildlife and habitats: lifecycles, food chains, microhabitats
	Some seasons work to continue throughout the year to observe changes					
Owls LKS2	Animals and humans: digestion and teeth	Living things and their habitats: classification, food chains / environmental danger	States of matter: evaporation and condensation	Eco- waste: biodiversity at school, plants, impact on environmental change	Electricity- voltage, variation and symbols	Sound and hearing
Squirrels UKS2	Light and sight	Changes of materials: reversible / irreversible, solutions	Food, healthy lifestyles, puberty, reproduction	Life cycles / habitats of plants, classification and reproduction	Forces / gears	Life cycles and habitats of mammals or amphibians, reproduction