



Intent - We aim to...



Deliver an ambitious curriculum that allows children to better understand the world around them using the substantive knowledge they have learnt.



Promote a love of Science that extends beyond the classroom and beyond the topics studied in each year group.



Foster critical thinking skills through a range of enquiry types and develop working scientifically skills.



Ensure children understand the role that science plays in the world we live in, and to understand their contribution.



Ensure that the majority of children leave Key Stage 2 as expected standard in Science.

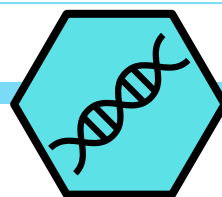


Implementation - How do we achieve our aims?

A consistent approach

At Waterside Primary School we recognise that Science is underpinned by four key concepts - Physics, Biology, Chemistry and Working Scientifically. Therefore, our Science curriculum ensures children learn all of the key concepts in age-appropriate ways. Though working scientifically is not a specific area of Science, we recognise that enquiry skills are important and children need an understanding of the concept of investigation.

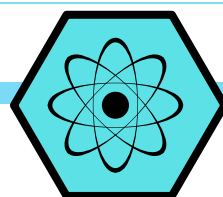
Key concepts



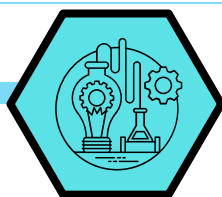
Biology



Chemistry



Physics



Working Scientifically

A consistent approach

We ensure that every lesson teaches substantive knowledge alongside disciplinary knowledge, focusing on the interplay between the two. Through the teaching of substantive knowledge, children acquire knowledge of the products of science, such as models, laws and theories. By learning disciplinary knowledge, children develop their understanding of the practices of science, learning about the concepts and procedures that scientists use to develop scientific explanations. The knowledge, vocabulary and skills that are taught are progressive throughout the year groups.

Project drivers



Forces & Electricity



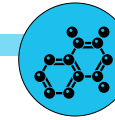
Light & Sound



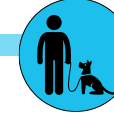
Earth & Beyond



Living things and their habitats



Materials & Matter



Animals including humans



Plants



Evolution & Inheritance



Developing Key Skills

Key skills

In our Science lessons children learn a range of skills, though we have identified some key skills that are transferable across topics and age groups. This development of the same key skills strengthens understanding of the technical aspects of Science.



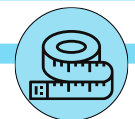
Asking questions



Making predictions



Observing



Measuring



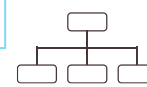
Recording data



Drawing conclusions



Evaluating



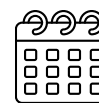
Clearly structured learning

Science lessons involve the teaching of both substantive knowledge and disciplinary knowledge. Within investigations, children use their existing substantive and disciplinary knowledge to find answers to questions. This strong focus on knowledge prior to enquiry ensures children have something on which to base predictions when carrying out investigations.



Consistent Investigation Planning

In EYFS, children explore the world around them through play, using their natural curiosity to explore and ask questions. In KS1 and KS2, one scientific investigation takes place every six weeks. In Year 4, one of these during the year will be a full investigation, while in Year 5 and Year 6, two of these will be full investigations.

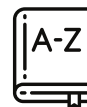


Timetabling

In EYFS, Science is taught through experiences as children explore their environment, including the natural world. Science is also taught through adult-led activities within the scope of Knowledge and Understanding of the World. In KS1 and KS2, Science lessons are taught weekly for 90 minutes.

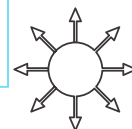


Implementation (continued)



Strong vocabulary development

New scientific vocabulary is taught in each Science lesson, building upon vocabulary that has been taught prior. All classrooms display scientific vocabulary and these words are frequently revisited to strengthen understanding.



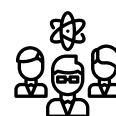
Cross-curricular links

Science links well with other STEM subjects in particular. Recording results and presenting data allows children to use tables and graphs, thus drawing upon skills primarily learnt in Maths. In D&T, children have opportunities to draw upon their scientific knowledge, therefore learning how knowledge in Science is transferable.



Out of school learning

We have multiple opportunities for children to further their learning outside of school, Children go on educational visits throughout the year groups - from Peak Wildlife Park in Reception, to the Thinktank museum in Year 4 and Jodrell Bank in Year 5. We also have visitors into school, such as ZooLab.



Studying key scientists

At Waterside, children have opportunities to explore the work of a range of scientists. We ensure that the scientists included in our curriculum reflect our diverse world, including the role that women have played in Science throughout history.

The Ogden Trust

Waterside Primary School is a Hub school for North Staffordshire within the Ogden Trust. We develop partnerships with other schools in the area to develop our Science curriculum.



Science given a high profile

Science is given a high profile at Waterside. Across KS1 and KS2, classrooms have designated working walls to display our current learning and key vocabulary. Science work is also displayed throughout school in our corridors, showcasing the children's work on previous topics.



Broad range of enquiry

Our Science curriculum covers different types of scientific enquiry (see below). We teach enquiry skills alongside substantive knowledge, and conduct an investigation every six weeks. We ensure that the children have secured substantial substantive knowledge before carrying out a scientific enquiry. Children investigate key questions and, for some enquiry types, follow a process of stating predictions, carrying out tests/observations, recording results, analysing data, and drawing conclusions. When conducting comparative and fair tests, children discuss how to make their test fair before carrying it out. In upper KS2, children become more independent when considering which variables to control and which to measure.



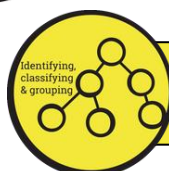
Pattern Seeking



Comparative & Fair Testing



Observing Over Time



Identifying, Classifying & Grouping



Researching Using Secondary Sources



Strong Foundations

In EYFS, children learn about the world around them as part of the Knowledge and Understanding of the World area of learning. They make observations of nature and the school environment using their senses. Children develop an understanding of seasons and what plants and animals need to grow. They learn the names of plants and animals in the UK and contrasting environments.



Impact - How will we know we have achieved our aims?



Children enjoy Science lessons and demonstrate this by talking confidently about their learning.



Children demonstrate an enjoyment of Science lessons and choose to further their understanding through wider reading and experimenting.



Children experience all enquiry types throughout the key stages and demonstrate confidence in working scientifically.



Children know about key scientists and their contribution to the world, and understand that they themselves are scientists.



The majority of children at the end of Key Stage 2 leave Waterside at expected standard.