GLEBE PRIMARY SCHOOL

UNITED LEARNING ACADEMY

Science Policy

2024-2025

Updated: Autumn 2024
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Signed by: Mr. James Dempster
Position: Chair of the Local Governing Body

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Science at Glebe: Intent Statement

Science at Glebe Primary School is founded within the development of our pupils' positive mind-sets (NIC values) to inspire pupils' enquiry and understanding of the world around them. We believe that our high-quality science education allows the pupils to develop thoughtful responses and questions about the plant and animal life, the formation of and features of the Earth as well as considering different materials and forces. It is through the discovery of these and other subject areas that the pupils' at Glebe develop their working scientifically skills where they are able to pose challenging questions, then create a variety of ways to explore and examine these through classifying, observation, fair testing, grouping, comparing, pattern seeking, and research using secondary sources.
In the classroom you will see real life connections being made through links to scientists and their discoveries, vocabulary is shared and used, appropriate differentiation ensures inclusivity for all pupils and promotes a real thirst for learning. Review and progress (RAP) sessions are used to enhance the pupil's knowledge from short term to long term.

How we teach Science at Glebe

Along with English and maths, science is one of the main core subjects in primary school. It can be one of the most exciting and practical subjects and, as a result, is a real joy for teachers and pupils alike. Children love the chance to learn through being totally hands-on and finding things out for themselves — the perfect way to understand the world around them. A positive primary science experience is also key to encouraging future generations to not only study this at secondary school, but also potentially to follow it as a career.

Science at Glebe begins as a component in the carefully crafted Early Years curriculum and continues up through the school where it is taught as a discreet subject in years two to six.

Science in the Early Years

Science is Reception is covered in the '**Understanding the World'** area which is one of the specific areas within the EYFS Curriculum. It is introduced indirectly though activities that encourage the children to explore, problem solve, observe, predict, think, make decisions and talk about the world around them.
Our core values underpin our Science Curriculum to ensure children develop a secure understanding of the world around them. The children learn to develop their skills of observation, prediction, critical thinking and discussion.

In Reception, through both directed teaching and child led learning the children explore creatures, people, plants and objects in their natural environment. The children observe and manipulate objects to identify similarities and differences. To enhance the children's learning experiences the children are exposed hands on opportunities like, reptile zoos, trips to farms and opportunities to observe chicks hatching.

Our Reception learning environment both inside and outside enables the children consistently ask questions about why things happened and how things work. For example, children might do activities such as inline to a slope to see how fast a vehicle travels. The children through our outdoor provision have first-hand opportunities to grow a range of plants and vegetables.

Throughout the curriculum, children are exposed to a range of scientists and they learn the 'real life' impact of scientific theory and discovery on our World. For example, during our Polar Regions topic the children explore the first explores to reach the Artic.

The children are encouraged to plan, investigate, record and evaluate findings which supports them with their scientific learning as they transition in Year 1.

By the end of the Reception year we want all children to be able to confidently:

- 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
- Explore the natural world around them, making observations and drawing pictures of animals and plants
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Science within KS1 and KS2

The content of science teaching and learning is set out in the **2014 National Curriculum** for primary schools in England. Where possible, links to learning across a range of subjects is made, allowing for a depth of learning. Within the National Curriculum, certain topics and areas are repeated across year groups, meaning that children may revisit a particular topic in each year of primary school but with increasing difficulty and with a different focus each time.
For example, the area of animals, including humans is examined in every single year group, with a very clear progression of knowledge and understanding over the six years:

- **In Year 1** this involves looking at the human body, recognising animal groups and sorting these animals.
- By **Year 6**, this will have developed into knowing the internal structure of the human body in relation to circulation, classifying living things based on more complex characteristics and exploring scientific research into this classification.

Alongside these areas runs the **Working Scientifically** element. This focuses on the skills the children need to become accurate, careful and confident practical scientists. Children are expected to master certain skills in each year group and there is a very clear progression of these set out for each school to refer to.
For example:

- In **Year 1** a child may have to ask questions, carry out a simple test, record simple data and then try to answer questions.
- By **Year 6**, they should be able to plan and carry out a fair test by using equipment accurately and taking exact readings or measurements. They are also expected to be able to draw conclusions from their results and record them using a range of graphs and charts.

Year 1 (Age 5–6) your child will learn about:

- Plants (basic structure)
- Animals including humans (basic knowledge of parts of human body and comparing animals)
- Everyday materials (describing properties)
- Seasonal changes.

Year 2, (Age 6-7) your child will learn about:

- Plants (what plants need to grow)
- Animals including humans (needs for survival, food and hygiene)
- Use of everyday materials (explore and compare materials for uses)
- Living things and their habitats (explore variety of habitats, simple food chains).

Year 3 (Age 7–8) your child will learn about:

- Plants (life cycles)
- Animals including humans (nutrition, skeleton and muscles)
- Rocks (fossils and soils)
- Light (reflection and shadows)
- Forces and magnets (magnetic materials, attracting and repelling).

Science in Year 4 (Age 8–9) your child will learn about:

- Animals including humans (digestive system, teeth and food chains)
- Living things and habitats (classification keys)
- States of matter (changes of state, evaporation and condensation)
- Sound (vibration, pitch and volume)
- Electricity (simple circuits, insulators and conductors).

Science in Year 5 (Age 9–10) your child will learn about:

- Animals including humans (human development from birth to old age)
- Living things and their habitats (life cycles and reproduction in humans and plants)
- Properties and changes of materials (dissolving, separating materials, reversible and irreversible changes)
- Forces (gravity, air resistance, water resistance, friction)
- Earth and Space (Earth, Sun and Moon, the solar system).

Science in Year 6 (Age 10–11) your child will learn about:

- Animals including humans (circulatory system, diet and exercise, healthy living)
- Living things and their habitat (classification, characteristics of plant and animal groups)
- Light (how it travels, how we see, shadows)
- Electricity (voltage and power in circuits, circuit components, symbols and diagrams)
- Evolution and inheritance (how living things have changed over time, fossils, dinosaurs, adaptation to the environment).

We endeavour to ensure that the science curriculum we provide will give children the confidence and motivation to continue to further develop their skills into the next stage of their education and life experiences.

Science Modifications

More Able students at Glebe

- will show excellent scientific understanding, knowledge and skills
- will be more precise in their use of scientific vocabulary and terminology in their explanations
- will be asked higher order questions which demand analysis and evaluation
- will be more independent in their investigations and evaluations
- will be encouraged to think about how to link and join up their scientific knowledge to explain results in investigations

Students that require more support at Glebe

- will have access to enlarged visual resources and simplified text
- will receive scaffolds and writing frames to help them with their written work
- will have opportunities to work in adult-led supported groups
- will have access to a range of scientific resources
- will have exposure to our 'working walls' that collate and present clearly all the information that they need
- will be assessed on their scientific skills and knowledge, not just their written skills

Assessment and Monitoring within Science

Science leaders are regularly given allotted time to observe, assess and monitor the teaching and learning throughout the year. Through regular 'book looks', pupil interviews and professional development meetings we can ensure that the delivery of Science is of a high quality. Science leaders have regular opportunities to speak with year leaders about the curriculum content and to plan fieldwork. Every unit has clear knowledge organisers and objectives so that teachers can be clear on what they are assessing, and planning includes ideas for modifications for lower and higher attaining pupils.

Extra opportunities within Science

By the end of their time at Glebe our children will also have had the opportunity to:

- Witness an egg hatching in to a chick
- Handle a range of fossils and learn how they were formed
- Observe different animals and their adaptations by either a visit to the school or a visit to a local animal park
- Participate in a STEM science session delivered by local company Ricardo
- Experienced the metamorphosis of a caterpillar in to a butterfly
- Learnt about the solar system in a visiting Planetarium