



Brinsley Primary and Nursery School  
*Learn today, be a star of tomorrow*

School Policy for

# Science

Person Responsible: E Langon

Written: June 2022

To be reviewed: June 2023

***"A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes"***

## **Why do we teach Science the way we do?**

At Brinsley primary school, we aspire to make our Science teaching and learning exciting, engaging and creative. When determining the Science curriculum for the children of Brinsley Primary School there are a range of things that shape our Science curriculum that are taken into consideration:

Firstly, our curriculum aligns with the Early Learning Goals and the National Curriculum. This means that within:

### **The Early Years:**

- Pupils should explore the natural world around them, making observations and drawing pictures of animals and plants.
- Pupils should 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.
- They should understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

### **Key Stage 1:**

- Pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them.
- Pupils will encouraged to be curious and ask questions about what they notice.
- Pupils should develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions.
- They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways.

### **Lower Key Stage 2:**

- Pupils should be enables to broaden their scientific view of the world around them through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions.

- They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them.
- They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.'

## **Upper Key Stage 2:**

- Pupils to develop a deeper understanding of a wide range of scientific ideas through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically.
- Children should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates.
- They should begin to recognise that scientific ideas change and develop over time and select the most appropriate ways to answer science questions using different types of scientific enquiry.
- Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

Wherever possible, Science will be taught through a questioning approach in line with our Focus Curriculum to enable and encourage our children to develop into independent, confident and resilient thinkers and learners. Children will work scientifically focussing on the following areas: observing, classifying, finding patterns, research and fair testing.

Alongside encouraging children to enjoy and engage in Science, our main goals when teaching Science are:

1. To encourage children's curiosity and allow them to ask questions and develop the skills they need to answer those questions about scientific phenomena through different types of scientific enquiries. This will be achieved by children working scientifically through the range of science-based topics across school as from the Focus Curriculum. Also, through our school participation in British Science Week and class 'WOW days' which we celebrate and share on our school's social media and Class Dojo.
2. To develop children's scientific knowledge, vocabulary and conceptual understanding through a knowledge rich curriculum. This is primarily done through our Focus Curriculum which provides teachers and pupils with the appropriate subject knowledge and resources to support their scientific knowledge, vocabulary and understanding. This is also encouraged by lots of practical science activities in classes across school.

At Brinsley Primary school, we recognise that we are preparing children for their next phase and to ultimately, prepare them to be creative, curious and ambitious citizens. Through our Science curriculum, we believe that we can provide our children with foundational knowledge, concepts and skills, and encourage a sense of excitement and curiosity. This is supported through our curriculum mapping within and across year groups.

Enriching our curriculum and the experience of our children is very important to us. With this in mind we go on a wide variety of visits and have continued links and organised visits with the following:

1. Severn Trent Water, Nottinghamshire Schools Action Waste Club and Veiola - they organise educational visits to the local materials recovery facility.
2. Fizz Pop Science, who lead an assembly and then pupils are given the chance to sign up to a 4 week after-school club led by Fizz Pop Science staff.
3. The University of Nottingham - pupils usually participate in an assembly with a question and answer session relating to science career opportunities, along with a class workshop.

In participating in these the children experience a range of activities that focus on pushing their limits in order to build their confidence and social skills, through a variety of inspirational activities.

Finally, like all subjects that are taught within Brinsley Primary School, Science provision seeks to reinforce and explicitly teach the values and beliefs we hold dear.

- **Ambition:** We encourage the children to be the best they can be and if they have a skill or inclination this is celebrated.
- **Resilience:** We teach children to use a trial and improve approach. They are encouraged that when faced with a challenge, to find other methods and persevere.
- **Mutual Respect:** In all aspects of Science, we teach the children of respecting each other and relating to each other in a positive way.
- **Rule of law:** There is an expectation that children will follow and respect the people who are enforcing it.
- **Personal responsibility:** Like everything we encourage the children to be responsible for themselves and their own actions.

### **In teaching Science...**

We have a whole school Science Curriculum Overview which shows what topics are being taught and when. Teachers plan for equipping children with sticky knowledge (knowledge mats from our Focus Curriculum resources) and key skills. Key questions are planned for in order to encourage active learning and challenge for all children

### **As a school, we aim:**

- To provide the opportunity for children to explore and ask questions about where they live and their environment, the plants and animals they find there and how to care for living things.
- To observe how and why things happen and work, and begin to compare patterns and changes.

- To develop scientific knowledge, skills and understanding which is highlighted within the learning objective.
- To introduce children to a variety of plants and animals, materials and physical phenomena.
- To give children the chance to work scientifically. This should be embedded in each unit of Science that is taught through practical investigations and a variety of research methods, including books and ICT.
- Each year, to ensure that children experience each main type of scientific enquiry: Observation (including over time), pattern seeking, fair testing, identifying and classifying and researching using secondary sources.
- Use a range of scientific equipment to take measurements and record and present findings in different ways.
- To encourage children to take increasing responsibility for their work, working independently and in groups.
- To provide the opportunity to work on open-ended questions, where children have planned and set up their own investigations.
- To support children in reviewing and consolidating their learning before moving on without a secure understanding.
- To provide an environment where questioning and discussion is aimed to develop higher order thinking skills rather than pure recall of facts.
- To enrich and extend understanding through providing the opportunities for the pupils to apply, evaluate, justify and explain the knowledge and understanding they have developed.
- To embed key scientific vocabulary.

### **Staffing/Staff development**

The class teacher has the responsibility to teach the children a broad Science Curriculum and assess the progress within Science. Staff will have the opportunity to engage in science development online and through staff meetings. Staff are equipped with a wide range of resources to support the Science curriculum. Resources will be audited to ensure the correct equipment is used in the correct year group and at the right time and to also identify where resources need replacing or upgrading.

### **Safety**

Children are taught about hazards, risks and risk control during Science sessions. They should begin to recognise hazards and take steps to control risks to themselves and others around them. There are resources that are kept in school to ensure children and staff are at minimal risk such as, safety goggles.

### **Safeguarding:**

All adults working with children in school are to be checked for appropriate DBS clearance. This includes all staff, as well as staff working on a one off basis or with after school clubs.

### **Equality:**

All aspects of Science are taught in a way that includes all children regardless of their gender, background, culture or physical ability. Learning objectives are set in line with our Special Needs and Equality Policies.

## **How do we measure the impact of our Science provision?**

### **Records and Assessment:**

Assessment for learning is made through short-term observations of children, through discussion with the children, through children's written work, end of unit assessments and through their own self-assessment. Teachers have the responsibility to assess children and record this on O'Track termly.

Impact will also be measured through the following ways by the Science Subject Leader:

- Book looks
- Displays
- School social media and Class Dojo
- Learning walks
- Observations
- Pupil voice
- Staff questionnaires