

**John Randall Primary School and Nursery**  
**Statement of Intent for Science**

**Intent**

**Why do we teach this? Why do we teach this in the way that we do?**

The National Curriculum for science aims to ensure that all pupils:

- Develop **scientific knowledge and conceptual understanding** through the specific 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 the world around them.
- Are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

Science at John Randall Primary School provides a foundation for understanding the world through a high-quality, ambitious curriculum that aims to engage and challenge all children of all abilities and backgrounds. First and foremost, we want to engage children's curiosity about the subject and to allow them opportunities to pose their own questions, consider ways to investigate and find answers to their questions and to make scientific links. We believe that Science is an interconnected subject where pupils can make links and connections across different scientific topics and through other subjects like the Arts, Technology and Maths, we aim to utilise this to make learning purposeful and meaningful.

Our Science curriculum focuses on giving children opportunities to overlearn throughout the key stages and ensures that they develop their scientific enquiry skills and deepen their scientific knowledge. We aim to ensure that two of our great passions at John Randall Primary School are interwoven within our curriculum offer; food and the great outdoors.

**Implementation**

**What do we teach? What does it look like?**

- Children become scientists from their very first days at John Randall Primary School. Our early years curriculum offer is enquiry based and encourages and allows children the opportunity to ask questions and to investigate, by following their interests and lines of enquiry. Our early years team support children through project-based learning, where all curriculum areas are interwoven. We recognise the need to develop children's early language skills as a high priority at our school, and as such, early years practitioners focus on teaching children new, technical vocabulary within each of their projects.
- Throughout key stage one and two, we teach science through a scheme called 'Engaging Science'. This enables us to ensure that children have the opportunity to be taught all aspects of the science curriculum throughout their time with us and that these science topics are progressive and build upon previous skills and knowledge. Through this scheme,

teachers know what children have been taught previously and therefore can help children to recall previous knowledge for them to build upon.

- All science units begin with children completing a concept map to show what they already know about the particular topic. This acts as start of topic assessment but more importantly, helps the children to unlock previous learning. From this, teachers can make an initial assessment of children's understanding and plan future lessons to suit the needs of the children. Another concept map is completed at the end of the topic which allows children to show what they have learned throughout the unit. At John Randall Primary school we have a passion for the great outdoors! This can be seen from early years right up to year 6. Outdoor learning provides opportunities for children to learn science in context and to take part in investigations that are active and engaging. We are part of an exciting project in which we are working with the Woodland Trust to ensure that outdoor learning is interwoven into our science topics.
- We know that children learn best through having hands on experiences which allow them to explore and investigate. Scientific enquiry is embedded within our curriculum as each of our units contains opportunities for children to take part in investigations which encourage them to ask questions, make predictions and consider and explore ways to investigate and find answers to these questions. Children will learn to take accurate measurements, record and evaluate their findings, drawing conclusions about what they have discovered. Alongside this, we provide children with real life experiences through school visits such as visiting the zoo in year 2 and Blists Hill museums including Ingenuity in year 4 and year 6. We also bring visitors into school to provide children with experiences, such as Shropshire Falconry as part of the animals' topic in year 1 and medical practitioners such as the school nurse and a dentist in keys stage 2.
- At John Randall Primary School we have a passion for food which is embedded within our curriculum offer. Children learn where food comes from, and experience how to grow our own food, which we then cook and eat with the children. We are lucky to have our own curriculum chef, who supports staff to plan and deliver sessions.
- Scientific vocabulary is crucial to develop children's understanding, therefore we ensure the children are exposed to specific language for each topic and allow it to become more challenging throughout the Key Stages. New and existing scientific vocabulary is shared with children at the start of each lesson and referred to regularly throughout.
- Through science we want to give children high aspirations and consider goals for their future. Therefore, we make explicit references to careers within our sessions so that children understand the 'bigger picture'. We teach Science, Technology, Engineering and Maths (STEM) sessions through our science curriculum offer. STEM requires children to work collaboratively as part of a team. Our upper key stage 2 children take part in a STEM challenge where they work with local businesses and compete against other local primary schools to design, make and evaluate a product.

## **Impact**

### **What it will look like? By the time the children leave our school they will:**

Throughout each lesson, formative assessment takes place and feedback is given to the children through written or verbal feedback. Children are assessed at the start of each topic with a concept map about their scientific knowledge linked to that topic, which is used by teachers to influence their planning and ensure they are providing a scientific curriculum that will allow each child to progress. Each child has a child friendly assessment which is kept in a folder at the back of their science book. This consists of 'I can' statements for each topic area and for all scientific enquiry

skills. This is referred to regularly throughout the unit of work and again at the end so that children can self-assess their own knowledge and scientific skills and understanding. Children record work in science books, in which we encourage children to apply a high standard of work and presentation. We also record children's learning through the use of book creator for years 1-6. This allows us to document learning through photos, captions and videos and enables all children to show understanding and progress. We find this particularly useful for our younger children and for children who find recording their work through writing challenging. In Early Years Foundation Stage (EYFS) observations and assessments are shared with parents using tapestry. This platform allows parents to see what their child is learning and also to engage in their child's learning by responding to teacher comments and observations. They can also share things that their child has done at home which can help them to continue learning at home. The teaching of Science is monitored on a termly basis through book scrutinies, learning walks or pupil voice activities by the science lead. Gaps and misconceptions can then be addressed in follow up lessons and future lessons when children revisit units of work.