

## Science Policy

### Intent

At Reed First School, we believe that a high quality science education is best when practical learning allows children to embed the skills and knowledge which can be applied to help them understand the world they live in. We encourage all children to develop their scientific thinking by using their curiosity to pose questions and explore how to find the answers. This progresses to the planning and carrying out of investigations involving skills such as observing, predicting, safely using equipment, gathering data and making conclusions.

Science at Reed First School ensures the requirements of the National Curriculum are met across all year groups. Children are taught the specific disciplines of biology, chemistry and physics through planned scientific topics and investigations.

At Reed First School we use The Association of Science Education planning as a basis for our teaching and learning which we then adapt to the children in our classes. We have also developed a science curriculum map to ensure continuity and a progression of scientific skills and knowledge throughout our school.

We discuss the lives of famous scientists, studying their values and their work. In this way we can reinforce the idea that science affects our lives every day.

At Reed First school, we understand that it is important to know more and remember more. We use knowledge organisers as a resource to support and deepen pupils understanding of topics. We also revisit topics and ensure when we start a new topic a KWL grid (what we know already, would like to know, have learned) has been completed drawing on previous knowledge.

## **Early Years**

To support our play based learning in Early Years, our skilled Early Years teachers will identify and plan opportunities for all children to develop key knowledge and skills which will support them in successfully accessing the National Curriculum for History when they enter Year One. Our curriculum map ensures key changes, events and people are not used as named topics, instead, events, changes and people who are significant to the children in EYFS will be used as opportunities for learning at the level appropriate to 3 to 5 year olds.

All planned opportunities over the year are as a result of teachers making informed decisions about what a child needs to learn and be able to do next, this will ensure there is clear evidence of the depth in learning in history through Understanding of the World. The evidence will come from teacher knowledge of every child and use of floor books to record learning journeys.

In the Early Years, scientific learning is mainly explored through the specific area of understanding the world. Early Years science activities are planned to meet each child's learning and development requirements as well as taking account of the children's interests. This ensures that we ignite children's curiosity and enthusiasm which builds their capacity to learn. Children are immersed in scientific vocabulary and given opportunities to solve problems and to express their thoughts and ideas through adult led and child initiated activities.

## **Reed First School Science Principles**

At Reed First School we know good science occurs when...

- Pupils refer back to Knowledge Organisers to support and widen their learning
- Pupils respond to next steps to develop their knowledge and understanding
- Pupils are engaged and focused on developing their working scientifically skills
- Pupils are aware of what they need to do to achieve the next level
- Pupils enjoy their science lessons
- We use rich science vocabulary and learn new words
- Teachers have good subject knowledge
- Lessons are practical, investigative, challenging and fun
- Lessons are safe, well planned and resourced
- All pupils are motivated and engaged in their learning

- Pupils are challenged at every level in all lessons
- Children are aware of the purpose and objectives of their learning
- Children are able to ask questions and talk confidently about their learning
- Pupils develop their scientific knowledge and skills
- Science is linked to the pupil's everyday lives

At Reed First School, topics are taught across a two-year block and split into Year A and Year B. Teachers refer to the science curriculum map ASE planning and national curriculum when planning lessons.

Our detailed curriculum map shows the skills, knowledge and vocabulary to be covered in each topic.

### **Assessment KS1 and 2**

During each lesson, it will be made clear to the children which skills they will be using and knowledge they will be learning. These will also be detailed in a sticker stuck in their Science book. Every time the child has shown they can use these skills, a skills sheet stuck in the front of their book will be dated. This will mean that a judgement can be made as to whether the children have met age related expectations.

Teachers are expected to assess children's understanding, knowledge and skills throughout a topic and ensure any misconceptions or gaps are covered. Teachers will assess children's working scientifically skills and knowledge after each topic is taught using Herts for Learning working scientifically wheels Age related expectations for scientific knowledge tracking sheets. Examples of expected learning for topics are used to moderate judgements.

### **Differentiation and Special Educational Needs**

All children are taught the Science curriculum. We recognise the fact that we have children of differing ability in all our classes, and so we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies which are differentiated by task, expected outcome, the grouping of the children, resources provided and/or support from peers or adults. Tasks will be adapted where needed to ensure scientific skills can be met and that barriers from other areas, for example, reading or writing do not stop children from becoming scientists.

Recording pupil knowledge will be seen in different ways, for example: a presentation, drawing, verbal recording, adult scribing.

### **Resources**

In both Key Stage One and Two classrooms working scientifically wheels are clearly displayed alongside a KWL grid (what we know, would like to know, what we have learnt).

Knowledge Organisers are provided for the children for each Science topic to support their knowledge and understanding of the topic as well as enhance it.

Visits and workshops are planned to enhance our Science curriculum and provide practical opportunities for children to develop their Science learning. Individuals with an interest or expertise in a particular area of Science could be invited into the School to work alongside the children.