

## SCIENCE

*'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.'* – The National Curriculum 2014

## INTENT

At St.Alphege Infant School, our intent is to provide a Science curriculum that develops children's curiosity and provide a life-long love of learning. In an increasingly scientific and technological world, we believe pupils need to be equipped to answer questions about the world around them through investigative and explorative learning. Teachers enable children to reach their full potential by delivering high quality teaching and learning experiences. Through the use of investigative science, pupils continue to deepen their respect for the natural world, increase their care and appreciation for it and understand how they can help with current global issues.

Activities are planned to allow children rich experiences linked to the Science curriculum which challenge pupils to think and build on their learning. Children are encouraged to ask questions that stem from their awe and wonder and find a way in which they can answer their own questions. This allows the children to adapt and build on their learning which in turn promotes risk taking and resilience.

Lessons in Science are fun and engaging and are often practical which allows all children to join in and learn in their preferred learning style.

## IMPLEMENTATION

At St.Alphege Infant School, Early Years learn their Science knowledge during their learning through play activities. Science enables Early Year's children to build on their communication and language by encouraging children to ask and answer questions which builds on their vocabulary and speech and language skills. Children are also continuously learning to look after themselves and become healthy, independent individuals who are able to make sensible decisions. Science in the Early Years is planned for each week and children are encouraged to explore and discover things about the world around them each day. Key Stage 1 lessons are taught from the Kent Scheme which is linked to the National Curriculum. Teachers plan and adapt lessons accordingly to meet the children's interests and needs. Our curriculum requires deep thinking and encourages learners to work using a question as a starting point. They do this by exploring, discussing, testing and developing ideas about everyday phenomena and the relationships between living things and the environment.

Each Science topic begins with a 'big question' which gives the children the opportunity to engage and become excited about the learning that follows. Lessons all introduce the learning's relevant vocabulary which enables student to be given exposure to rich learning and new words and meanings in every lesson.

Teacher's plan to deliver lessons and arrange trips in our local environment to embed and consolidate learning in first-hand experiences. The local environment offers enrichment visits to Whitstable beach, Stream Walk community gardens, Tankerton, Duncan Downs and our own Urban Forest School.

The children ask questions about what they observe and make decisions about which type of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, classifying, grouping and carrying out simple tests. The children have many opportunities to use secondary sources and read non-fiction texts to support their learning.

Memorable knowledge and embedding learning into children's long term memory is a key focus for teaching and learning at St.Alphege. Children revisit their previous learning at the beginning of each lesson and build on their learning in a well sequenced curriculum. Each class also have 'sticky knowledge' questions which are added to when learning has taken place. These are revisited in a discussion-based format at various points throughout the year to enable knowledge to be embedded in the learner's long-term memory.

### IMPACT

The successful approach to the teaching of Science at St.Aplhege will result in a fun, engaging, high-quality Science education that provides children with the foundations for understanding the world around them. Teachers use their judgement to carry out on-going assessment while delivering Science lessons which allows for misconceptions to be addressed quickly if needed. By the end of their time at St.Alphege Infant School, children will:

- Demonstrate a love of Science and show an interest in further study in this field
- Retain knowledge that is pertinent to Science with a real-life context
- Be able to question ideas and explore their questions
- Be able to articulate their understanding of scientific concepts
- Feel confident to take risks and build their resilience when carrying out scientific enquiries
- Work collaboratively and practically to investigate and experiment

### Early Years

Science is underpinned in many areas of the Early Years Curriculum and covered daily through indirect and directed learning through play activities

By the **end** of reception pupils will be able to:



- follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events.
- know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently.
- know about similarities and differences between themselves and others, and among families, communities and traditions.
- know about similarities and differences in relation

to places, objects, materials and living things.

- talk about the features of their own immediate environment and how environments might vary from one another.
- make observations of animals and plants and explain why some things occur, and talk about changes.

## **Key Stage 1**

Having secured these skills, children's knowledge and understanding will then be built upon in Key Stage One.

By the **end** of Year 2 children will be able to:

- have developed scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- have developed 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
- be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

The units covered in Year 1 and 2 are plants, animals including humans, living things and their habitats and seasonal change and materials. They are all underpinned by specific skills which are built upon. The skills are as follows:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering question

