



**“We all flourish from a wealth of learning experiences that positively impact on our educational, physical and emotional success”**

## Horsted School



## Science Policy

Horsted school is a vibrant, safe and welcoming school where we celebrate and welcome differences within our school community. The ability to learn is underpinned by the teaching of basic skills, knowledge, concepts and values with a vision to prepare pupils for a happy and healthy life beyond primary school.

The shared vision of the Bluebell Federation is:

“We all flourish from a wealth of learning experiences that positively impact on our educational, physical and emotional success.”

Our school value, which underpin our curriculum, is that our children will leave us with a genuine enthusiasm for learning and as

1. **Striving** (they will be determined, persevere and they will be resilient);
2. **Thoughtful** (They will be creative, logical and curious about their world and those around them);
3. **Ambitious** (personally, emotionally and academically);
4. **Resilient** (be motivated, be able to problem-solve and stay positive); and
5. **Supportive** (of themselves, others and their wider community) individuals.

### Aim and purpose

We aim to achieve this through our curriculum’s rich web and in partnership with parents. The curriculum at Horsted is designed to provide an enjoyable, broad and balanced education that meets the needs of all children. It provides opportunities for children to develop as independent, confident and successful learners, with high aspirations, who know how to make a positive contribution to their community and the wider society.

Horsted is an inclusive school. We strive to ensure that all children will be able to access the curriculum or make necessary modifications to it in order to achieve this.

**Approved by: Miss E Winfield**

**Date: 6/3/2023**

**Last reviewed on:**

March 2023

**Next review due by:**

March 2025



“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.”

(The 2014 Primary National Curriculum in England, Science, page 144)

### **Aims:**

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.

(The 2014 Primary National Curriculum in England, Science, page 144)

### **STARS:**

Through scientific enquiry and understanding, our children are able to become STARS through the development of a range of invaluable life skills including discipline, resilience, communication, teamwork, and ambition.

- **Striving** – Children are encouraged to always try their hardest, draw on their prior knowledge and apply their understanding to their current scientific learning. To develop an 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.
- **Thoughtful** - Children will build on previous learning and thoughtfully learn from mistakes. They will learn how to make decisions based on their scientific thinking. Children are encouraged to ask questions and communicate, plan, investigate, record and evaluate their findings.

- **Ambitious** - Children aim to achieve. They are encouraged to make aspirational progress – gaining more scientific understanding and a curiosity about the world that they live in.
- **Resilient** - Children will be encouraged to learn from mistakes that they make, realising that they are part of the learning process in order for them to build on their scientific understanding.
- **Supportive** - Children will build skills to work both independently and cooperatively in groups. During scientific enquiry, they will learn to work well with one another when carrying out experiments and when working scientifically. This will enable them to become supportive of their peers and support group investigations.

### **Expectations:**

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. (DfE 2014)

#### In KS1 children should:

- Observe, explore and ask questions about living things, materials and the world around them.
- Work together to collect evidence to help answer questions.
- Use reference materials to find out more about scientific ideas.
- Share their ideas and communicate them using scientific vocabulary and drawings.

#### In KS2 children should:

- Apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health.
- Carry out more systematic investigations, working on their own and with others.
- Communicate their ideas using a wide range of scientific language, conventional diagrams, charts and graphs.

### **Knowledge and progression map:**

The knowledge and progression map was developed to help inform our planning, understand the National Curriculum coverage, embed our STARS values and ensure progression within science. It also helps us to stretch children and prepare them for beyond primary school. By helping to develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry, and physics; build on the understanding of the nature through different types of science enquiries that help them to answer scientific questions about the world around them. Children at Horsted are equipped with the scientific knowledge required to understand science today and for the future.

## **Organisation and Planning:**

### EYFS:

Children in Reception will cover the Science objectives in the EYFS curriculum through a range of planned and child led learning opportunities that encourage children to explore, problem solve, observe, predict, think, make decisions and talk about the world around them.

- Children explore creatures, people, plants and objects in their natural environments.
- They observe and manipulate objects and materials to identify differences and similarities.
- Children also learn to use their senses, feeling dough or listening to sounds in the environment.
- Children are encouraged to ask questions about why things happen and how things work.
- They ask questions about what they think will happen to help them communicate, plan, investigate, record and evaluate findings.
- Children explore creatures, people, plants and objects in their natural environments.
- They observe and manipulate objects and materials to identify differences and similarities.
- They will also learn to recognise changes that happen to the body when they are active. Children will also learn about the importance of keeping healthy and the things that contribute to this by, for example, cooking or identifying fruit and vegetables.
- Children collect materials, such as rough sandpaper, soft fabric and shiny bottle tops to build a sensory wall. They explore colour, texture, shape, form and space by mixing colours, painting, modelling and dancing.

All children from years 1 to 6 will be taught a dedicated Science lesson on a weekly basis. Planning is completed as a shared process between the teachers in each group. It is each teacher's responsibility to ensure that all objectives and working-scientifically skills are being taught both thoroughly and regularly as part of their good practice, quality first teaching and learning over time. Science is kept as practical as possible, allowing children to have first-hand experience to explore for themselves thus stimulating their curiosity. Science teaching in the school is about children developing skills, knowledge and independence when investigating practically. To help ensure coverage, teachers use Kent Science Scheme to draw out and pick the activities that they believe will best support the learning of their class. The Kent Science Scheme has been adapted and is supported by specific resources from Twinkl to ensure full coverage of the National Curriculum. Children learn how to think scientifically and draw on the full range of 'working scientifically' methods throughout their time in each year group in a progressive manner. Each planning unit must include, where appropriate and possible, the completion of a full investigation.

### **Assessment, recording and reporting:**

Each child's performance in Science will be assessed by the teacher using ongoing formative assessment. Formative assessment is ongoing assessment used to monitor student learning in order to provide feedback that can be used to improve teaching and learning outcomes. Teachers record learning outcomes in a termly assessment book and summative assessments are recorded. Summative assessments indicate if the teacher thinks the child is working towards the expected level, at the expected level or at greater depth.

We check pupils' understanding systematically and effectively in lessons, offering clearly directed and timely support, i.e. moving children on from their starting points, providing different starting points and addressing misconceptions at the point of need. We provide children with incisive verbal feedback, about what they can do to improve their knowledge, understanding and skills.

### **Links with other subjects:**

The Working Scientifically strand of the National Curriculum allows for links to be made with other Curriculum subjects, particularly Mathematics and Design Technology. Other subject specific knowledge objectives allow links to be made with other subjects such as Geography and PE. This list is not exhaustive and other links may be made throughout the curriculum. Links should be made across all subjects where appropriate in line with our curriculum. Science, in KS1 tends to be taught in a more thematic manner linking to topics whilst in KS2, science tends to be taught more discretely (outside of topic) with links made when they are meaningful.

### **Inclusion and differentiation:**

In order to provide all pupils with relevant and appropriate work at each stage, we:

- Assess prior learning to set suitable learning challenges
- Respond to pupils' diverse needs, this could include, but is not limited to, giving a context to help a pupil anchor their knowledge, breaking down the learning process, adapting methods and ways to record results
- Endeavour to overcome potential barriers to learning

### **The Role of the Subject Leader:**

- To advise colleagues, where necessary, on the development of planning and delivering the curriculum.
- To keep up to date with developments in design and technology education passing this on to other members of staff.
- To monitor and evaluate progress and outcomes in design and technology, supported by the progression document for Science and liaise with senior leadership on any action necessary.
- To liaise with appropriate bodies e.g. other primary and secondary schools, governors, the LEA etc. concerning matters relating to design and technology.
- To monitor learning in design and technology by working alongside colleagues and by viewing children's achievements.

### **Resources:**

Science resources are kept in the Science cupboard by the KS2 hall. These are shared resources for the whole school. Any requests for new resources should be passed to the science subject leader

## **Health and safety:**

When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:

- about hazards, risks and risk control.
- to recognise hazards, assess consequent risks and take steps
- to control the risks to themselves and others.
- to use the information to assess the immediate and cumulative risks.
- to manage the environment to ensure the health and safety of themselves and others.
- to explain the steps they take to control risks.

Teachers will include in their medium/short term planning, a risk assessment outlining tools and materials which could pose a possible risk to pupils/staff using them.