



## 1. Intent

At Priory, our aim is that children will develop knowledge that will last a lifetime, along with strong skills to prepare them for the world, enabling them to lead a successful life and make a positive contribution to their community.

Our children are provided with a well taught, knowledge rich curriculum. The basis of this is full implementation of the National Curriculum ensuring breadth, balance and clear progression. Our expectations are high for all pupils: we never narrow our curriculum or deny any pupils the key knowledge taught to the class, unless it is absolutely in their best interest due to a significant learning need.

We carefully consider our children and community to ensure our curriculum is bespoke to their needs. Any purchased schemes are also carefully considered and adjusted to match need. As a Rights Respecting School, where possible in lessons, links are made to the rights of the child. Opportunities to promote British Values, SMSC and our equality objectives are incorporated across the Curriculum. Teachers have strong subject knowledge and learning is clearly sequenced over terms, years and throughout the school to ensure knowledge is learnt and embedded.

Our curriculum is brought to life through the 'Learning Challenge' enquiry based approach. As according to cognitive scientists nothing has been learnt until it is in your long term memory we focus on ensuring learning sticks. We understand through research, including with our children, what aids long term memory and include these strategies in all our teaching sequences. A focus on key knowledge for every topic and a clear assessment, away from the point of learning, demonstrates the effective implementation and impact of our curriculum.

## 2. Rationale

We believe that 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, as well as teaching thinking scientifically skills, 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, raise questions and analyse causes.

## 3. Aims and Objectives

- Develop scientific knowledge and conceptual understanding through the specific disciplines of Biology, Chemistry and Physics.
- Develop understanding of the world through different types of Science enquiries that help them to answer scientific questions about the world around them.
- Are equipped with the scientific knowledge and skills required to understand Science, today and for the future.
- To fill the children with awe and wonder and to challenge their thinking.
- To teach children to be curious and raise and answer their own questions.
- To use Science Capital and wider opportunities to raise aspirations for the children and their future careers in STEM (Science, Technology, Engineering and Maths) subjects

#### 4. Teaching and Learning

Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity.

We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures, and photographs. They use ICT in science lessons where it enhances their learning. They take part in role-play and discussions and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in 'real' scientific activities, for example, researching a local environmental problem or carrying out a practical experiment and analysing the results, so that learning can be linked to the real world.

We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- providing resources of different complexity, matched to the ability of the child;
- Using classroom assistants to support the work of individual children or groups of children.
- We provide 'support' or 'challenge' options in the vast majority of activities so that children can push themselves to show what they can do (self-differentiate).

We carry out our curriculum planning in Science in three phases (long-term, medium-term and short-term). The long-term plan maps the scientific topics studied in each term during the key stage – coverage expectations for each year group are set out in the National Curriculum 2014 and have been mapped out as a staff. Where possible we combine the scientific study with work in other subject areas, using it as a 'Key Driver' to our enquiry based curriculum.

Our medium-term plans give details of each unit of work for each term. The Science subject leader keeps and reviews these plans (along with the Curriculum Innovation Team), and they are checked against our school's shared long-term plan and the curriculum coverage charts. This ensures complete coverage of the National Curriculum without repeating topics.

The class teacher is responsible for writing the daily lesson plans for each lesson (short-term plans). These plans list the specific learning objectives of each lesson. The class teacher makes these plans available to the subject leader and the Curriculum Innovation Team each half term – the opportunity for monitoring is then available.

In science we ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit and we also build progression into the science scheme of work, so that the children are increasingly challenged as they move up through the school.

#### 5. Assessment

From Year 1 to Year 6 pupils' performance will be described in term of achievement of age-related expectations. We use Arbor to record assessments throughout the school. From Year 1 to Year 6 each pupil's understanding of key knowledge and achievement of skills is used to award a best fit level using the Chris Quigley 'BAD' terminology:

**Basic:** understanding of basic facts and ideas relating to a concept – can tackle questions, sometimes with support.

**Advancing:** understanding of key knowledge, independent application, can explain, use or summarise understanding

**Deep:** has an exceptional understanding of knowledge and skills (gifted and talented)

## 6. Resources

There are sufficient resources and consumables for all Science-teaching units in the school. These are kept in a central store. In addition, year groups are encouraged to use curriculum money to purchase their own resources for their specific Science units.

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers will check equipment regularly and report any damage, taking defective equipment out of action. A simple risk assessment will be carried out for all practical activities any perceived hazards will be reported to the Head who will determine the appropriateness of said activity.

## 7. Early Years

In September 2020, our Early Years became Early Adopters for the new revised curriculum that will be statutory from September 2021. The Early Years Curriculum focusses on building skills, knowledge and understanding with a metacognitive and independent enquiry based approach. We have adopted a creative approach to the curriculum and we ensure it is broad, balanced and exciting. We make links across the curriculum and to life wherever possible as we believe this deepens the children's level of learning. We use the Revised Early Years Framework for the Foundation Stage curriculum (Development Matters published September 2020) as appropriate, to guide our teaching. These documents set out the aims and objectives for children from birth to the end of Reception and provide details regarding expectations of child development at each phase and what skills they need to be taught to ensure they are ready for transition between phases.

The Revised EYFS (2020) is broken down into areas of development. There are two main sections of the curriculum, the "Prime" areas and the "Specific" areas. There are 3 Prime areas which are fundamental and underpin everything in the Early Years curriculum – communication and language, physical development and personal, social and emotional development. The 4 Specific Areas of development include essential skills and knowledge for children to participate successfully in society and allow them to strengthen and apply the Prime areas – literacy, Maths, Understanding the World, Expressive art and Design.

In the EYFS, Science is not taught exclusively as a subject, but is embedded in teaching the children knowledge of the world in which they live under the heading 'The Natural World'. The key aspect of teaching Science in EYFS is to create a degree of awe and wonder and a curiosity about the world and its people. Following the whole school approach of 'Learning Challenge curriculum', children are taught to explore the natural world around them, making observations and drawing pictures of animals and plants. They will 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. Children will understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Assessment plays an important part in helping practitioners to recognise children's progress, understand their needs, and to plan activities and support their development. Assessment in the Early Years is Ongoing and is largely based on Facilitated child-led experiences; allowing children to reflect their own knowledge, and high quality adult led activities. Children are assessed throughout the Foundation Stage using the new Development Matters (2020) which sets out a pathway of children's development in broad ages and stages. Children are assessed against the Early Learning Goals and Development Matters through a range of observations and work. The Early Years lead tracks achievement in all Areas of Learning and can provide specific feedback to individual subject leads regarding achievement in the relevant strands.

## Priory CE Primary School: Policy on Science

### The Prime areas of development are:

#### Personal, social and emotional development

Self Regulation

Managing Self

Building Relationships

#### Physical Development

Fine motor

Gross Motor

#### Communication and language

### The Specific areas of development are:

#### English

Comprehension

Word Reading

Writing

#### Mathematics

Number

Numerical pattern

#### Understanding the world

## 8. Inclusion and SEND

Pupils with SEND have full access to the curriculum through reasonable adjustments. They can be supported through differentiated tasks, scaffolds, adult and peer support. Where necessary adapted equipment and resources can be provided. Our work in Science takes into account the targets set in the children's Individual passports.

Advice to support individual pupils is always available from the Inclusion Hub and where appropriate specialist services.

## 9. Equality

Priory is a caring school that aims to provide a high quality education to all our pupils within a secure and environment. We are a Rights Respecting School and protecting the rights of all individuals is important to us. We hope that pupils will leave us with confidence, positive memories and that they value their time here.

Our school

Our school aims to meet its obligations under the public sector equality duty (PSED) by having due regard to the need to:

- Eliminate discrimination and other conduct that is prohibited by the Equality Act 2010
- Advance equality of opportunity between people who share a protected characteristic and people who do not share it
- Foster good relations across all characteristics – between people who share a protected characteristic and people who do not share it

## 10. Monitoring and Review

The subject leader is responsible for monitoring the standards in Science. They will monitor the quality of planning, lessons and pupils' work throughout the year. They will also engage with pupils through surveys and interviews to discover their views. Annual data will be analysed. All monitoring will be used by the subject leader to create and maintain an action plan to bring about improvements. This will include support for staff, planning training and purchasing resources.

The subject leader, SLT and Governing Body are responsible for monitoring the implementation of this policy. This policy will be reviewed every two years or earlier if necessary.

## 11. Other related policies:

- Equality
- Teaching and Learning
- SEND
- EYFS
- Assessment

### Priory CE Primary School: Policy on Science

- Marking and Feedback
- Presentation and Handwriting
- Health and Safety
- Healthy Eating
- Sex and Relationships

Policy Author: Julie Clarke

Date of Review: February 2023