

## Great Bardfield Primary School Curriculum Statement for: Science

### Intent:

At Great Bardfield Primary School, we believe that the study of Science encourages children to be inquisitive throughout their time at the school and beyond with an understanding of the uses and implications of Science, today and for the future. The Science curriculum fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills. Topics are revisited and developed throughout their time at school. This model allows children to build upon their prior knowledge and increases their enthusiasm for the topics whilst embedding this procedural knowledge into the long-term memory.

We ensure that the Working Scientifically skills are built-on and developed throughout children's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.

With this in mind, we have established a school curriculum plan for Science as an entitlement for all pupils that:

- Includes content, which is logical, relevant, broad and balanced in terms of the areas of subject content we have selected which reflect the guidance of and in line with National Curriculum.
- Sequences lessons ensure that pupils can build on previous knowledge and understanding as they tackle more complex and demanding enquiries as they progress through the school.
- Various Scientific areas which allows pupils opportunities to build on previous knowledge and understanding as they tackle more complex and demanding scientific enquiries;
- Encourages pupils to develop and use a range of skills including observations, planning and investigations, as well as being encouraged to question the world around them and become independent learners in exploring possible answers for their scientific based questions.
- Teaches Specialist vocabulary for topics to encourage effective questioning to communicate pupils' ideas. Concepts taught should be reinforced by focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions.
- Built upon and has continuity with the provision for geography established in the Early Years Foundation Stage and in particular addresses the knowledge and skills expectations of Understanding the World Early Learning Goal;
- Inclusive in terms of delivering the same curriculum to all our pupils irrespective of specific learning needs or disabilities and adapting where necessary through, for example, in class support, providing different learning environments, alternative learning activities and assessment outcomes.
- A desire to embrace challenging activities, including opportunities to undertake high-quality research across a range of Science topics;
- A developing sense of curiosity about the world in which we live and an understanding of the important contributions of influential scientists that have impacted the way we view the world.
- The ability to support, evaluate and challenge their own and others' views using scientific evidence, evaluating results and improving their questions to inform their

further experiments.

- The ability to think, reflect, debate, discuss and evaluate the scientific discoveries by formulating and refining questions and lines of enquiry;

### **Implementation:**

Subject Leaders are provided with an additional three planning days per year on top of their PPA, to plan their curriculum. As part of the planning process, teachers need to plan the following:

- A medium-term plan which plans enquiry-based questions to allow our pupils not only to build subject knowledge and understanding but become increasingly adept at critical thinking, specialised vocabulary and their grasp of subject concepts. through child led learning.
- A cycle of lessons for each enquiry, which carefully plans for progression and depth allowing for child-centred learning involving interactive and practical opportunities for pupils to work independently, in pairs and also in groups to provide them with sufficient time and space for the children to build their knowledge to the point where they can answer the initial enquiry question;
- Wherever possible we provide our pupils with practical equipment, observations, photographs, data in the form of graphs and charts and films to analyse and from which to reach conclusions and make judgements.
- Similarly, we provide varied and adapted ways for pupils to record the outcomes of their work including the use of concept mapping, annotated diagrams, practical experiments and the application of a wide range of writing genres to ensure knowledge becomes embedded.
- The schemes of work for each Scientific enquiry highlight both the objectives and anticipated outcomes of the investigation. They are also carefully structured through the use of ancillary questions, to enable pupils to build their knowledge and understanding in incremental steps of increasing complexity until they reach the point where they are able to answer the question posed at the beginning of the investigation.
- Our learning and teaching in science also recognise the importance of the local area with a number of our investigations involving observation, recording, presentation, interpretation and the evaluation of local information outside of the classroom e.g significant people and places locally.
- Mastery and challenge questions for pupils to apply and deepen their learning in a philosophical/open manner;
- Trips and visiting experts who will enhance the learning experience;
- Opportunities to showcase their work using a variety of presentation styles.
- Taking part in a Science Week where children can engage with a range of activities to enhance and support their learning.

### **Impact:**

Our Science Curriculum is high quality, each enquiry which forms our programme of learning and teaching sets clear objectives and outcomes for the pupils in terms of knowledge and understanding and skills acquisition. The schemes of work also suggest a range of ways in which the teacher can assess whether a pupil has achieved these outcomes. We ensure that when assessing our pupils, evidence is drawn from a wide range of sources to inform the process including:

- Interaction with pupils during discussions and related questioning
- Day to day observations
- Practical activities such as practical enquiries, the gathering, presentation and communication of fieldwork data and writing in different genres.
- The outcomes of each enquiry serve to inform the teacher's developing picture of the knowledge and understanding of each pupil and to plan future learning accordingly.

At the end of each year we make a summative judgement about the achievement of each pupil against the subject learning goals for science in that year. At this point we decide upon a 'best

fit' judgement as to whether the pupil has achieved and embedded the expected learning goals, exceeded expectations or is still working towards the goals.