

## Science Core Purpose Statement

### Intent: (what is the purpose of this subject)

In Science, we want to inspire our children by giving them opportunities to pursue their natural curiosity and develop creative minds. We achieve this by investigating scientific phenomena, in a range of contexts, to ensure a continually evolving knowledge and understanding of the world around them.

We encourage questions, taking risks, experimentation, reflection, making and learning from mistakes, in a safe environment, where all pupils acquire and apply core skills which equip them for an ever-changing world.

We want to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of science, today and for the future. They will develop and use a range of skills including observation, planning and investigating, as well as being encouraged to question the world around them. We aim for them to become independent scientists that are able to explore possible answers for their scientific based questions.

### Implementation: (how is this structured/sequenced)

The Science curriculum is based on the National Curriculum. Both the knowledge and working scientifically objectives are mapped out by the Science leader across terms and year groups to ensure coverage and progression. Medium term plans for each unit have been created by the Subject Leader to ensure coverage and consistency.

Each unit of work will contain the following elements:

- **Pre-assessment/glossary:** To establish what the children already know and what they need to learn.
- **Vocabulary building:** Specific teaching of the vocabulary required for the unit.
- **Fast 5s:** Opportunities for retrieval practise of science subject knowledge.
- **Knowledge learning:** The learning of new knowledge through a range of teaching/learning techniques, such as independent research, reading, use of media such as video clips, paired and group work.
- **Developing scientific enquiry skills:** Opportunities for children to ask questions, plan and set up practical scientific enquiries, carry out investigations, record results and make predictions.
- **Post-assessment:** Revisiting the pre-assessment/glossary to reflect on learning and progress.

To further enrich the curriculum, we have a Science club, an annual Science and Engineering week, which includes visitors from scientific backgrounds.

### Pedagogy: (what is the approach taken)

We believe that Science should be taught, where possible, in a practical way. Dr Alice Roberts states that, “practical science is all about ‘learning by doing’. Students achieve a deeper level of understanding by finding things out for themselves, and by experimenting with techniques and methods that have enabled the secrets of our bodies, our environment, the whole universe – to be discovered.”

What will you see in a lesson?

Every Science lesson will be centred around the following areas:

1. **Memory platforms** – Children revisit learning needed for this unit of work/ lesson (e.g. use of diagrams without labels for pupils to label, a visual for pupils to describe, use of 'explorify' to develop curiosity, discussion and reasoning skills, science talk, concept cartoons).
2. **Connect** – Remind children of previous learning and how this links to what they are doing today.
3. **Keywords** - Introduce key words for the lesson using communicate in print use games, visuals, clips to ensure understanding
4. **Modelling** - the teacher will deliver key knowledge needed, model the skills to complete the task in small steps and will give specific instructions in how to complete the task.
5. **Independent practice** - every child will be given the opportunity to apply their new knowledge or develop their scientific enquiry skills through, for example e.g. investigating, writing conclusions independently, written work to demonstrate knowledge, creation of diagrams and scientific drawings to show knowledge.

#### Evaluation: (how will outcomes be measures for your subject)

Outcomes in Science will be assessed through both the completion of pre/post unit assessments and glossaries, which represent and assess the children's understanding of the 'sticky knowledge' for each unit. Live marking of children's written work and adult observations of a child's discussions and practical work will be used to assess their scientific enquiry skills.

#### Impact: (what are the outcomes of your subject)

Evidence that children not only acquire the appropriate age-related knowledge linked to the science curriculum, but also skills which equip them to progress from their starting points, and within their everyday lives, making learning memorable. They will take away a deep understanding of both science content and scientific method and the importance it has in their world around them and in future careers. High aspirations, which may see them through to further study, regardless of gender or other perceived barriers. The understanding that science has changed our lives and that it is vital to the world.

#### Next steps: (what are the key priorities for development in this subject)

1. To fully audit all consumable resources and ensure a programme of ordering new resources is clear and budgeted for
2. To further develop scientific enrichment opportunities