



## SCIENCE CURRICULUM

### INTENT

Our Science curriculum aims to cultivate a confident boldness to Science within our children. At the forefront of our STEAM curriculum we aim to provide a foundation where children make sense of the world that they live in and challenge concepts in a scientific manner. Ask questions, Test, hypothesis and practically investigate concepts around us. Children are encouraged to foster and develop their natural curiosities and wonder about the increasing number of scientific and technological advancements of the modern world we live in. Children use science to explain what is occurring, predict how things will behave, analyse causes and adapt our understanding of the ever-changing world. Our science learning is a core subject that encourages and develops child autonomy in learning.

### IMPLEMENTATION

Teachers plan opportunities for higher order thinking (HOT); opportunities for talk and develop reasoning skills of the key knowledge. There is a core focus on using and implementing scientific vocabulary within lessons. We model OOO, TMI, PMI and teacher demonstrations with the use of practical prompts for investigations to ensure high levels of engagement and stimuli for wider mastery in children's learning. Each unit has a cycle of lessons for each topic, which are carefully planned for progression, for both knowledge and key scientific enquiry skills and are all linked with working scientifically in OGPS through our acronym TIPOR.

### IMPACT

Our curriculum allows children to articulate their scientific ideas fluently and encourages creative thinking. Children will adopt a growth mind-set in their learning experiences and wonder about the world around them. They will think creatively about how and why science works and articulate their thoughts. Children will collaborate with each other in practical activities and take risks with different equipment and variables while being clearly aware of safety in science. They will develop autonomy with their learning by independently evaluating scientific results and reflecting on their learning through self-assessment.

### CULTURAL CAPITAL

With practical experiments being at the forefront of learning, we also foster their Science capital through trips, visits, guided walks around our local environment, modelling positive views on science, and using media resources with current news articles to illustrate classroom content. Our children become engaged with the world around them and ask questions.

Our STEAM curriculum also ensures links with other subjects such as PSHE/RHE (puberty and growing up) and geography (climate change and sustainability).

Our curriculum contains diverse voices from all cultures and societies. We have made conscious decision to include voices of people our children might not get to hear (e.g. scientists and inventors of diverse backgrounds).

Where possible, we focus on possible careers in science. We help build the children's confidence and aspirations to aim and aspire to careers which are science based and relatable to our children.

### KNOWLEDGE & SKILLS

Our investigations have aspects of common processes such as observation, classification, hypothesising, data collection, interpretation of data and evaluation. Children will progressively build up this knowledge as they move up through school. We develop cognitive skills related to science such as acquiring scientific language, making observations, taking measurements, gathering, analysing and interpreting data, making generalisations, creating models, communicating and carrying out investigations. Skills that underpin scientific enquiry such as thinking critically, evaluating and examining results from investigations allows for further opportunity for children to apply their knowledge meaningfully.

### ASSESSMENT

Assessment takes place in many forms in science:

- Learning always starts with the children's prior knowledge and any misconceptions they may have. The planning of HOT activities allow teachers to elicit misconceptions that arise throughout the unit
- End of unit summative assessments.
- Interviewing the pupils about their learning (pupil voice).
- Moderation staff meetings where pupil's books are scrutinised and there is the opportunity for a dialogue between teachers to understand their class's work.
- Annual reporting of standards across the curriculum.