Science

Intent, Implementation and Impact

Intent

At St John's CE Primary School, it is our intention to recognise the importance of Science in every aspect of daily life, and without science humankind would not have made progress throughout history. We give the teaching and learning of Science the prominence it requires. The Scientific area of learning is concerned with increasing pupils' knowledge and understanding of our world, and with developing skills associated with Science as a process of enquiry. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence. We intend to build a Science curriculum which develops learning and results in the acquisition of knowledge and build a Science curriculum which, enables children to become enquiry-based learners.

Implementation

- Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children can achieve high standards in science.
- Science will be taught as set out by the year group requirements of the National Curriculum. This is a strategy to enable the accumulation of knowledge and allows progress in repeated topics through the years.
- Pupils will concentrate on one science skill per term. Term 1 will be dedicated to planning investigations, Term 2 to results gathering and analysis, and Term 3 will be spent evaluating practical work. Although each skill is related and there are links between them, there is minimum crossover as they are taught, so each becomes firmly embedded.
- Children have access to key language and meanings in order to understand and readily apply to their written, mathematical and verbal communication of their skills.
- Through our planning, we involve problem solving opportunities, allowing children to find out for themselves how to answer questions in a variety of practical means. Children are encouraged to ask their own questions and be given appropriate equipment to use their scientific skills to discover the answers.
- Engaging lessons are created with each lesson having both practical and knowledge elements. Teachers use precise questioning in class to test conceptual knowledge and skills and children are regularly assessed to identify those children with gaps in learning, so that all children keep up.
- We build upon the learning and skill development of previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting and using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are explicit in lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the theme of the lesson.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.

Impact

The successful approach at St John's results in a fun, engaging, high-quality science education, that provides children with the foundations for understanding the natural world. Our engagement with the local environment ensures that children learn through varied and first-hand experiences. Much learning takes place outdoors making the most of our amazing school grounds, so pupils can investigate their immediate environment. Through our curriculum, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Pupil voice is used to further develop the Science curriculum, through questioning of pupil's views and attitudes to Science to support the children's enjoyment of science and to motivate learners.

- Most children will achieve age related expectations in Science at the end of their cohort year.
- Children will retain knowledge that is pertinent to Science with a real-life context.
- Children will be able to question ideas and reflect on knowledge.
- Children will work collaboratively and practically to investigate and experiment.
- Children will be able to explain the process they have taken and be able to reason scientifically.

Whole School Science Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
EYFS	**Seasons Autumn** Sound walk Naming body parts	**Seasons Winter** Light and dark Shadows	**Seasons Winter** Ice melting	**Seasons Spring** Habitats Magnets	**Seasons Summer** Growth and changes	**Seasons Summer** Floating and sinking Explore outside environments
1	**Animals and Humans** Naming animals comparing and classifying	**Seasonal changes** Weather and day length	**Everyday materials** Identify and name everyday materials	**Changing seasons** different weather conditions	**Plants** Common wild and garden plants/trees naming structures	**Animals** Sea creatures name and classify
2	**Living things and their habitats** Habitats naming comparing food chains	**Everyday materials** Suitability of materials changing materials	**Animals and humans** Survival basic needs of animals Food chains	**Humans and growth** Healthy living	**Plants** Seeds bulbs and condition of growth	**Living things and their habitats** Name and explore habitats
3	**Rocks and Fossils** Grouping rocks fossils and soils	**Forces and magnets** How do you make things move? What can magnets do?	**Animals and humans** Nutrition Compare food eaten	**Animals and humans** Human and animal skeletons and muscles	**Plants** Flowering plants requirements plant growth pollination seed dispersal	**Light** Reflection and shadows

4	**Electricity** Circuits switches conductors and insulators	**States of Matter** Solids liquids and gases water cycle	**Sound** Pitch and vibration	**Living things and their habitats** Life cycles in different animals and plants	**Living things and their habitats** Plant and animal reproduction	**Animals including humans** Digestive system teeth predator prey
5	**Earth in Space** Solar system movement of moon and Earth	**Forces** Gravity air resistance water resistance friction mechanism	**Properties and changes of materials** Dissolving separating	**Properties and changes of materials** Reversible and irreversible change	**Animals including humans** Describe the changes as they age	**Human growth** Puberty changes as humans develop to old age
6	**Living things and habitats** Classification of living things and micro organisms	**Electricity** Voltage and currents Draw electric circuits using symbols	**Light** To present scientific ideas and thinking on light and how light travels from a source	**Animals including humans** Circulatory system drugs exercise diet transportation of water and nutrients	**Evolution and inheritance** Fossils how animals adapt and evolve to suit their environment	**Evolution and inheritance** Fossils how animals adapt and evolve to suit their environment