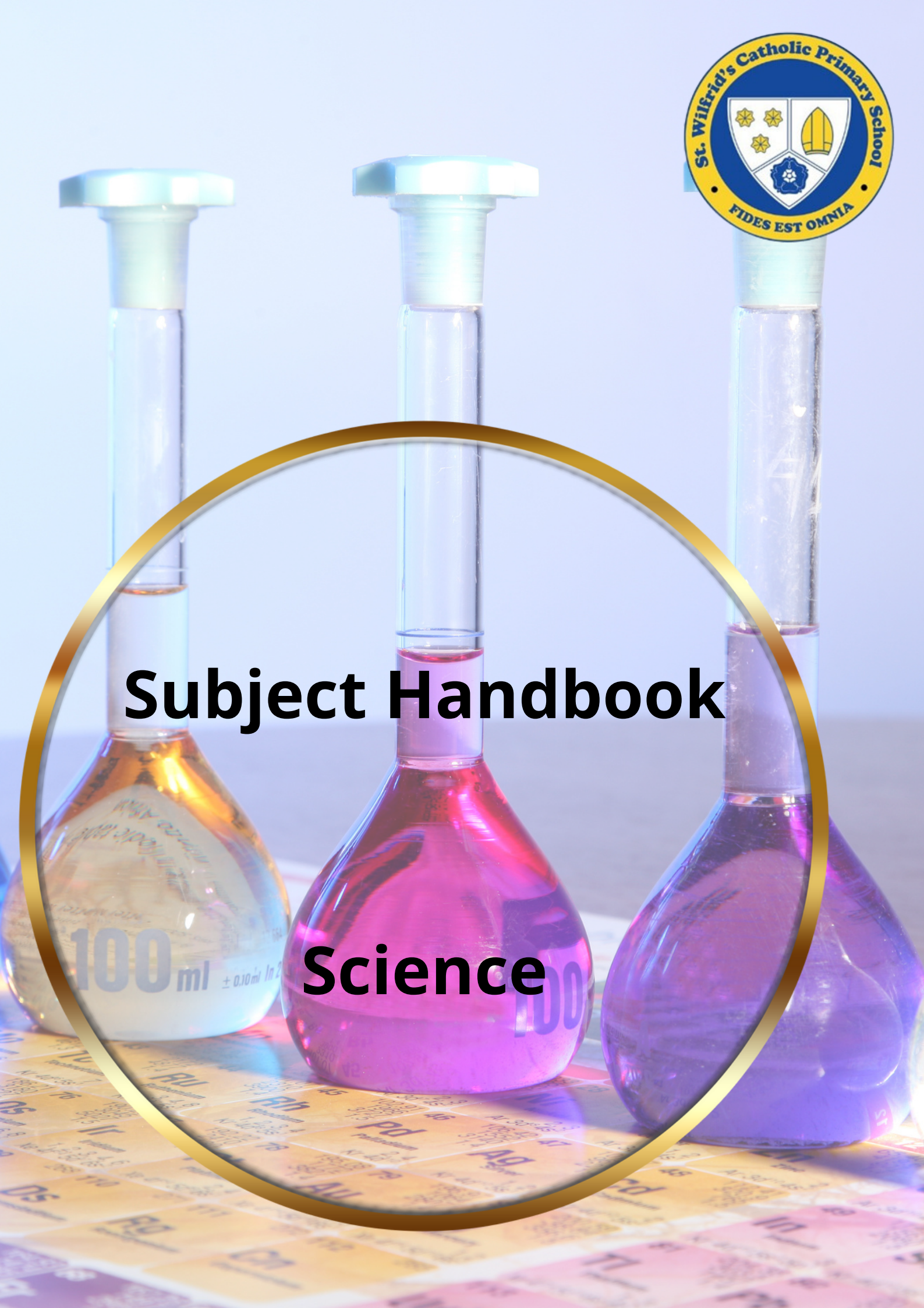
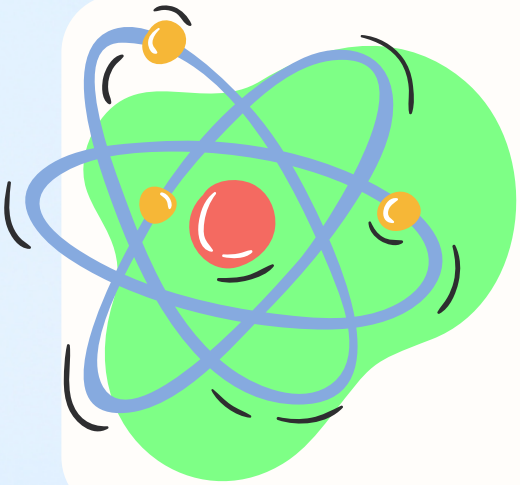


Subject Handbook

Science



Science Handbook

Vision for Science

Our science curriculum aims to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge 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. .

Our Science Curriculum

Our curriculum is knowledge rich and has been developed using Snap Science combined with subject leader expertise to ensure the best possible curriculum to meet the needs of all of our pupils. Through our science curriculum we offer a range of opportunities to explore and understand the world around us, gaining a secure knowledge of scientific concepts. Our curriculum is designed to engage all pupils and prepare them for future learning, encourage curiosity and questioning attitudes. In science we take pride in our pupils developing independence, confidence and resilience. We focus on building up extended specialist vocabulary, enabling pupils to articulate scientific concepts.

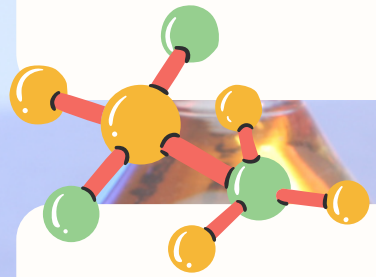
Our Science Curriculum Will Enable Pupils to:

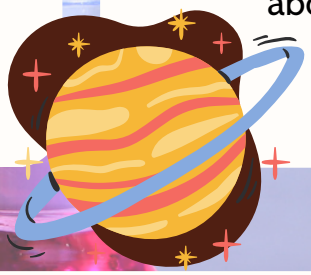
- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Intent

It is our vision to distil a lifelong love of science within our pupils. Science has changed our lives and is vital to the world's future prosperity. We work hard to provide a rich and varied curriculum to challenge and meet the needs of our children. We believe all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science.

From EYFS up to KS2 our pupils will build up a body of key foundational knowledge and concepts, pupils are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena.





Implementation

Science , as a subject, is taught using Snap Science subsidised with subject leader knowledge to ensure the best possible curriculum to meet the needs of all of our children. This is then enhanced with subject specific and contextual reading materials. Staff subject knowledge is continuously being strengthened so that a well-sequenced and planned curriculum can be designed: a curriculum that builds on prior knowledge, focuses on key scientific vocabulary and concepts, makes some links to other subjects within the curriculum whilst pre-empting and addressing misconceptions.

Prior learning is built upon. 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.

Pupils at St Wilfrid's learn about natural phenomena through a range of teaching strategies, including practical investigations, which are at the heart of the teaching and learning of Science. In order to encourage a 'hands on, minds on' approach to learning, teachers plan lessons which ensure pupils are exposed to all 5 types of enquiry and are equipped with the scientific knowledge required to understand the uses and implications of science today and for the future. Stimulating experiments not only allow for the pupils to practice working scientifically skills, but also act as hooks for our pupils, However, we are committed to ensuring that our children can articulate the Scientific explanations behind all the excitement and can retain that knowledge rather than just have the memory of a 'fun' task

Impact

Our Science Curriculum ambitious and planned to demonstrate progression. If children are keeping up with the curriculum, they are deemed to be making good or better progress.

In addition, we measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes (Key Objective linked to National Curriculum objectives assessment on Fisher Family Trust);
- Tracking of knowledge in post learning quizzes and flashback questions;
- Pupil / Teacher discussions about their learning;

Prior Learning (Flashback 4)

Children will review learning from previous lessons, days, units and years to consolidate learning and ensure children know more and remember more.

Direct Teaching (Let's Learn)

Children are taught the key concepts they need to succeed in the lesson. The direct teaching will looking at primary and secondary sources and is designed to impart key vocabulary and knowledge the children need to succeed.

Talk Task and Independent Task

Children are provided with a variety of independent, paired and group tasks and practical activities and investigations to apply their knowledge and use new vocabulary in context. Kagan strategies will be used at this point to support understanding and mastery.

Plenary

Children's understanding of the knowledge taught in the lesson is assessed and progress reviewed. Assessment for learning takes place throughout the lesson and this is used to adapt future teaching and flash back questions.

Curriculum Overviews

Curriculum overviews are available to inform planning. They identify which unit the object is covered within the curriculum with clearly defined end points.

Key Stage 1 Science and the National Curriculum

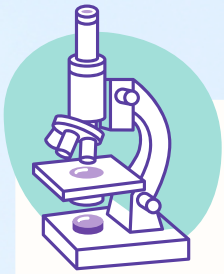
Year Group	Topic 1	Topic 2	Topic 3	Topic 4
Year 2 National Curriculum Coverage	• differences between living, dead and never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including micro-habitats (NC Yr2)	• notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Children should be taught to: Observe and describe how seeds and bulbs grow to mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
Year 2 Topic and lesson sequence	Living Things and th... Habitats 1. Dead or Alive 2. What is a habitat? 3. Rainforest and Desert habit... 4. Meadow habitats 5. Underground habitatss	Animals Including...		

Science Curriculum Map

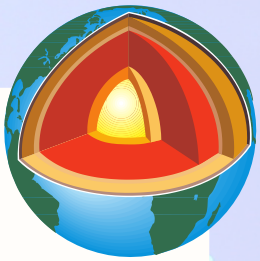
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Animals Including Humans		Plants		Every Day Materials	
Year 2	Living things and their Habitats		Animals Including Humans	Plants	Every Day Uses of Materials	
Year 3	Rocks and Soils	Light	Animals Including Humans	Plants	Forces	Our Changing World
Year 4	Electricity	Our Changing World	States of Matter	Living Things and their Habitats	Sound	Animals Including Humans
Year 5	All Living Things and their Habitats	Humans Including Humans	Forces	Properties and Changes of Materials		Earth and Space
Year 6	Animals Including Humans	Evolution and Inherritance	Living things and their Habitats	Electricity	Light	

Progression

The progression maps carefully map the development of key ideas within a strand from Y1 to Y6 ensuring that the learning journey is cohesive and that each new element builds on the appropriate conceptual components.



Assessment



Assessment allows teachers to make live judgements about children's learning. Based on comprehensive knowledge and skills framework, teachers assess, monitor, track, and report Science.

Inclusion

All children access the Science Curriculum. We teach to the top and scaffold down using resources, adaptations and adult support to ensure all learners make progress.

Within the representation stage there is a systematic approach to the introduction of new content which builds on prior learning and explicit links are made with the content that the children have previously acquired.

The use of practical resources to represent the concept or method is vital within the representation stage to ensure all children have conceptual understanding.

The use of resources also support pupils who are less confident but a reliance on the use of physical resources is to be avoided.