

Through studying Science pupils become more expert as they accumulate, connect and make sense of the rich substantive and disciplinary knowledge.

**-Substantive Knowledge**: This is the subject knowledge and explicit vocabulary used to learn about the content.

**-Disciplinary Knowledge**: We call this *‘Working Scientifically’.* This is knowing how to collect, use, interpret, understand and evaluate the evidence from scientific processes

**-Scientific Analysis:** We call this

*‘Thinking Scientifically’*.

**-Substantive Concepts:** Include concrete examples such as ‘plants’ and more abstract ideas such as ‘biodiversity’

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| STRONG LINKS WITH ENGLISH |  RETRIEVAL PRACTICE |  PROGRESS |  POSSIBLE SUPPORT |
| Explicit key vocabulary outlined in planning and is progressive.Explicit vocabulary instruction is used.Vocabulary displayed and referred to on working walls.High quality texts used and made accessible to all children.Cross curricular writing opportunities are planned and assessed. | Core content is planned and delivered in a spaced and interleaved sequence.Inter subject connections are made.The learning is sequenced to offer opportunities for rehearsal and retrieval.The learning is sequenced to support procedural and conceptual fluency.Key vocabulary is mapped from EYFS to Year 6. | Core content is planned and delivered in a spaced and interleaved sequence from EYFS to Year 6.Units of work are carefully sequenced so prior knowledge, concepts and vocabulary and built upon from previous units and year groups.Key disciplinary skills are taught and assessed alongside substantive knowledge.Pupils are given high quality, targeted feedback.Class teachers use a range of summative and formative strategies to support pupil progress and inform future teaching and learning.Learning is structured to support both procedural and conceptual fluency. | Class teachers use an ‘I do, we do, you do’ teaching cycle to help model.Differentiated levels of adult support.Increased adult scaffolding.Smaller steps instructionVisual prompts, and concrete resources used.Explicit vocabulary teaching, rehearsal and revisiting.Pre and post teaching strategies used.Increased retrieval practice.Knowledge organisers used. |

#  BIG IDEAS

## Substantive Concepts:

-Living Things; Plants and Animals

-Seasonal Change

-Materials

-Light

-Forces and Magnets

-Rocks

-Electricity

-Sound

-States of Matter

-Earth and Space

-Evolution and Inheritance

-Light

## Disciplinary Knowledge

***Thinking as a Scientist:***

-Identifying and Classifying

-Pattern Seeking

-Researching

-Observing over time

-Fair and comparative testing

 **Science at St Aidan’s**

Content & Sequencing

**In EYFS - Understanding The World: The Natural World/People and Communities** Scientific vocabulary will be introduced to enable pupils to explore the Natural World and make observations of animals and plants. Pupils will know some similarities and differences between the Natural World around them and contrasting environments. They will understand some important processes and changes in the Natural World including the seasons and changing states of matter

**In KS1:** The KS1 sequence will support pupils to study the **Seasons** and develop an early conceptual understanding of how **day becomes night.** An understanding of change over time connects to the study of **Plants inc Trees.** Contrasting that study, pupils learn about **Animals inc Humans** and later revisit this module to explore **Habitats** to deepen their knowledge**.** Pupils are introduced to **Identifying and Classifying Materials.**

**In Lower KS2: Rocks** is studied and connected with prior knowledge of Materials. A study of **Animals** is built upon from KS1. **Forces and Magnets** are introduced and connect with KS1 Materials. The abstract concept of **Light** is made concrete. **Plants** are studied to develop a more sophisticated understanding of their parts and functions. A study of **Living Things and their Habitats** using prior knowledge secures understanding. **Electricity** is introduced. **States of Matter** and **Sound** are investigated.

**In Upper KS2:** Pupils reuse and draw upon their understanding of **Properties and Changes of Materials.** Change is also studied within **Animals, inc Humans**, focusing on growth. **Earth in Space** develops the conceptual understanding of our place in the universe. A study of **Forces** sophisticates the knowledge acquired in LKS2. **Living Things** focuses on differences in life cycles and enables pupils to add to their understanding of classification. **Light** is revisited with a Physics focus. **Electricity** is enhanced with an advanced study of circuits and **Evolution and Inheritance** introduces the pioneers Darwin and Wallace.