# Science

*'Science knows no country, because knowledge belongs to humanity, and it is the torch which illuminates the World '*
*Louis Pasteur*

At Education South West our purpose is to: 'educate pupils so they can lead great lives'. Our Science curriculum is inspiring, challenging, deep and broad, nurturing talent and enabling social mobility so that all pupils:

- develop transformational knowledge and skills that take them beyond their experience.
- strengthen their academic knowledge and cultural capital through the acquisition of a broad and deep vocabulary underpinned by a focus on Tier 2 and Tier 3 words.
- shape their character and scholarship to prepare them for life so that they can make a positive contribution to society and live safely and independently.

Our Science curriculum incorporates fundamental Science knowledge and working scientifically, allowing pupils to build on a firm foundation in future years. As a school we have mapped the core knowledge that children need in this subject from the Early Years Foundation Stage through to Year 6 and beyond. This knowledge is carefully planned and approached at key points to interleave with the learning in other subjects across the curriculum. It is through this thoughtful interlinking of knowledge that purposeful connections can be made to prior knowledge and support the transfer of this knowledge to long term memory. The key components we use in all units of work in our curriculum are:

- · **Understanding knowledge –** Pupils understand what they are learning and why. Pupils will gain knowledge and develop schemas enhancing retrieval from long term memory.
- · **Participation –** Pupils engage in relevant learning events to build, extend and apply their understanding and deepen knowledge from novice to expert
- · **Language –** Pupils to use literacy and language to communicate in disciplinary ways. (Students communicate in the field of working scientifically.)

- · **Reflection –** Pupils and teachers assess and reflect on their learning journey; prior to minimise gaps in knowledge, during lesson to address misconceptions and after to ensure pupil has progressed with substantive knowledge links.

**EYFS:** In the Early Years, the pupils develop an awareness of their environments where they learn through exploration and discovery. Throughout the early year's curriculum, pupils develop and extend their scientific language and communication skills to explain the beginnings of natural phenomena. This develops a foundation for the future learning as well as a platform for the children to develop the disciplinary and procedural knowledge of being a scientist.

**KS1:** In Key stage one, pupils develop upon the previous learning, continuing to build knowledge in Biology, Physics, Chemistry and Environmental Earth Science. As substantive knowledge is gained throughout the curriculum units, pupils will start to develop the core knowledge, language and understanding of how to focus their scientific enquiry. (Example: Identifying and classifying; observing over time, pattern seeking, Comparative and fair testing, and researching using secondary sources.) Gaining enquiry disciplinary knowledge in science will support pupils working scientifically (The Question, Plan, Do, Review Cycle). Learning the procedural knowledge of how to use scientific equipment will be taught before they are used in application. Interweaving the procedural knowledge needed from other areas such as mathematics and computing to enable children to have all the knowledge needed to perform in the field of science.

Each unit, pupils will gain knowledge of scientists, mathematicians and engineers of the past (the Giants) and present (those who stand on the shoulders of Giants), to increase awareness of the science cultural capital, understanding of the developing world and the importance of their very existence in future scientific research.

| Academic Year (Cycle A) | | | | | |
|---|---|---|---|---|---|
| | **EYFS** | **Class 2** | **Class 3** | **Class 4** | **Class 5** |
| **Autumn** | Seasonal Change<br><br>Materials and Properties | Seasonal Changes<br><br>Animals including Humans (parts of the human body)<br><br>Plants | Animals including Humans<br><br>Rocks and Soils | Electricity<br><br>States of Matter | Living things and their habitats<br><br>Electricity |
| **Spring** | Seasonal Change<br><br>Forces<br><br>Plants | Seasonal Changes<br><br>Animals including Humans<br><br>Plants | Forces and Magnets | States of Matter<br><br>Sound | Animals including humans<br><br>Evolution and inheritance |
| **Summer** | Life Cycles and Plant<br><br>Animals and Habitats | Seasonal Changes<br><br>Plants<br><br>Materials and their Properties | Plants<br><br>Light<br>Life Cycles of Plants | Animals including Humans (digestive system and nutrients) Living things and their haba | Properties and changes of materials |

| Academic Year (Cycle B) | | | | | |
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| | **EYFS** | **Class 2** | **Class 3** | **Class 4** | **Class 5** |
| **Autumn** | Traditional Tales<br>Food Glorious food | Plants (growing seeds and bulbs outside)<br><br>Uses of everyday materials | Plants (growing seeds and bulbs outside)<br><br>Uses of everyday materials | Living things and their habitats<br><br>Properties and materials | Living things and their habitats<br><br>Properties and materials |
| **Spring** | Out and about<br><br>Plants | Animals including Humans (basic needs and keeping healthy)<br><br>Plants<br>Uses of everyday materials | Animals including Humans (basic needs and keeping healthy)<br><br>Plants<br>Uses of everyday materials | Forces<br><br>Animals including humans – growing old | Forces<br><br>Animals including humans – growing old |
| **Summer** | Our Amazing Planet | Animals including Humans (offspring)<br><br>Living things and their habitats Food chains<br><br>Plants (Harvest and Cook) | Animals including Humans (offspring)<br><br>Living things and their habitats Food chains<br><br>Plants (Harvest and Cook) | Light<br><br>Earth and Space | Light<br><br>Earth and Space |