



# Skelton School

## Science - Curriculum Vision and Overview

*Creating, confident, capable scientists in a caring community*

At Skelton School it is our *intent* to provide a high-quality science education where children are inspired and challenged, whilst being equipped with the knowledge and skills to design and interpret science experiments, understand scientific concepts and use appropriate key vocabulary through science conversation. We aim to enable our pupils to think critically, develop a good understanding of the subject and to understand how science and investigation are both a key part of the curriculum. We believe a coherently planned and sequenced curriculum allows children to revisit, secure and build upon previous knowledge, skills and vocabulary.

### As scientists we will demonstrate:

- The ability to use equipment safely and appropriately during science lessons. We will also demonstrate how to care for and store science equipment safely and transport equipment around school in an appropriate manner.
- An excellent attitude to learning.
- The ability to manage risks exceptionally well to manufacture products safely and hygienically.
- A thorough knowledge of which pieces of equipment, tools and materials are required to build safe scientific experiments.
- Careful questioning to deepen knowledge and understanding around scientific concepts.
- The use of interesting science vocabulary using working word walls and the could use, should use and must use approach to key words.
- The awareness and understanding of what it means to carry out a fair test.
- The ability to make scientific predictions in relation to experiments and investigations.
- Conclusions that fully evaluate the scientific learning objective in relation to an experiment that shows what can be done to evaluate practice.
- Health and safety being a top priority during experiments and investigations.

### Breadth of Study - EYFS

- Hot and cold
- Materials
- The body
- Forces
- Plants
- Seasons
- States of matter

### Breadth of Study – KS1

- Plants- Identify, classify and describe their basic structure. Observe and describe growth and conditions for growth.
- Habitats - Look at the suitability of environments and at food chains.
- Animals and humans - Identify, classify and observe. Look at growth, basic needs, exercise, food and hygiene.
- All living things Investigate differences.

### Breadth of Study - KS2

- Plants - Look at the function of parts of flowering plants, requirements of growth, water transportation in plants, life cycles and seed dispersal
- Evolution and inheritance Look at resemblance in offspring. Look at changes in animals over time. Look at adaptation to environments. Look at differences in offspring. Look at adaptation and evolution. Look at changes to the human skeleton over time.
- Animals and humans Look at nutrition, transportation of water and nutrients in the body, and the muscle and skeleton system of humans and animals. Look at the digestive system in humans.

		<p>Look at teeth. Look at the human circulatory system</p> <ul style="list-style-type: none"><li>• All living things Identify and name plants and animals Look at classification keys. Look at the life cycle of animals and plants. Look at classification of plants, animals and micro-organisms. Look at reproduction in plants and animals, and human growth and changes. Look at the effect of diet, exercise and drugs.</li><li>• Rocks and fossils Compare and group rocks and describe the formation of fossils.</li><li>• States of matter Look at solids, liquids and gases, changes of state, evaporation, condensation and the water cycle</li><li>• Materials Examine the properties of materials using various tests. Look at solubility and recovering dissolved substances. Separate mixtures. Examine changes to materials that create new materials that are usually not reversible.</li><li>• Light Look at sources, seeing, reflections and shadows. Explain how light appears to travel in straight lines and how this affects seeing and shadows</li><li>• Sound Look at sources, vibration, volume and pitch</li><li>• Electricity Look at appliances, circuits, lamps, switches, insulators and conductors. Look at circuits, the effect of the voltage in cells and the resistance and conductivity of materials.</li><li>• Forces and magnets Look at contact and distant forces, attraction and repulsion, comparing and grouping materials. Look at poles, attraction and repulsion. Look at the effect of gravity and drag forces. Look at transference of forces in gears, pulleys, levers and springs</li><li>• Earth and space Look at the movement of the Earth and the Moon Explain day and night.</li></ul>
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**Threshold Concepts:**

**Work Scientifically** - learning the methodologies of the discipline of science.

**Biology**

**Understand plants** –become familiar with different types of plants, their structure and reproduction.

**Understand animals and humans** –become familiar with different types of animals, humans and the life processes they share.

**Investigate living things** –become familiar with a wider range of living things, including insects and understanding life processes.

**Understand evolution and inheritance** –understanding that organisms come into existence, adapt, change and evolve and become extinct.

**Chemistry**

**Investigate materials** – become familiar with a range of materials, their properties, uses and how they may be altered or changed.

**Physics**

**Understand movement, forces and magnets** – understand what causes motion.

**Understand the earth's movement in space** – understand what causes seasonal changes, day and night.

**Investigate light and seeing** – understand how light and reflection affect sight.

**Investigate sound and hearing** – understand how sound is produced, how it travels and how it is heard.

**Understand electrical circuits** – understand circuits and their role in electrical applications.