

Adlington St Paul's Primary School

Science Knowledge & Skills Progression

Curriculum Intent

At St Paul's, science teaching inspires pupils to develop curiosity and a deep respect for the natural world. Through observation, investigation and reasoning, pupils build secure scientific knowledge and the skills to question, test and explain phenomena. Science is taught as both substantive knowledge (scientific facts and concepts) and disciplinary knowledge (how scientific knowledge is generated). Through science, pupils develop awe and wonder in creation, responsibility for the environment and a commitment to truth and evidence.

Curriculum Implementation

Science is taught through carefully sequenced units from Year 1 to Year 6, ensuring knowledge builds cumulatively. Practical enquiry is at the heart of learning. Pupils observe, classify, measure, test and record findings using appropriate equipment and vocabulary. Working Scientifically skills are explicitly taught and revisited across all units. Vocabulary is introduced progressively and revisited regularly to secure understanding. Links are made across biology, chemistry and physics to help pupils see science as an interconnected discipline.

Curriculum Impact

By the end of Year 6, pupils have secure scientific knowledge across biology, chemistry and physics. They can plan and carry out fair tests, take accurate measurements, record and interpret data, and use evidence to explain scientific ideas. Pupils communicate findings using precise scientific vocabulary and evaluate the reliability of results. They leave St Paul's prepared for secondary science and equipped with curiosity, integrity and respect for evidence and truth.

Key Disciplinary Concepts

Observation • Classification • Pattern Seeking • Fair Testing • Measurement • Data Representation • Scientific Evidence • Explanation • Evaluation • Scientific Vocabulary • Environmental Responsibility

Progressive Science Vocabulary Spine

Phase	Core Vocabulary
EYFS	observe, change, same, different, grow, alive, not alive, hot, cold, wet, dry
Y1	plant, animal, human, senses, material, object, weather, season, spring, summer, autumn, winter, temperature, property
Y2	living, dead, habitat, survival, food chain, offspring, material, suitable, bend, twist, squash, stretch

Y3	nutrition, skeleton, muscle, rock, soil, fossil, force, magnet, attract, repel, light, shadow
Y4	digestive system, teeth, solid, liquid, gas, evaporation, condensation, circuit, conductor, insulator, vibration, sound
Y5	life cycle, reproduction, puberty, dissolve, mixture, reversible, irreversible, gravity, orbit, Earth, moon, space
Y6	evolution, inheritance, adaptation, circulatory system, heart, blood, current, voltage, resistance, reflection, refraction

Biology Progression

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Explore the natural world through play and observation. Talk about living and non-living things. Notice growth in plants and animals.	Identify and name common animals and plants. Identify parts of the human body linked to senses. Recognise animals and plants as living things.	Distinguish living, dead and never-alive things. Describe habitats and survival needs. Construct simple food chains. Understand that offspring grow into adults.	Identify skeletons and muscles and their functions. Understand human nutrition. Describe plant structure and requirements for growth.	Describe functions of the digestive system. Identify types of teeth and their functions. Recognise that environments can change and impact living things.	Describe life cycles of mammals, amphibians, insects and birds. Understand reproduction in plants and animals.	Describe evolution and inheritance. Recognise variation and adaptation. Describe the circulatory system and its functions

Chemistry Progression

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Explore materials through sensory play. Sort objects by simple properties. Notice changes when mixing or heating materials.	Distinguish objects and materials. Identify and name everyday materials. Describe simple physical properties.	Compare suitability of materials for particular uses. Explore how materials change shape through force.	Compare different types of rocks. Describe how fossils form. Recognise soils are made from rock and organic matter.	Compare solids, liquids and gases. Observe changes of state. Understand evaporation and condensation in the water cycle.	Compare materials based on properties. Understand dissolving and solutions. Separate mixtures using filtering and evaporation. Distinguish reversible and irreversible changes.	Apply understanding of materials in complex investigations. Evaluate evidence for material use and chemical change

Physics Progression

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Explore light, dark, sound and movement through play. Notice seasonal and weather changes.	Observe seasonal changes. Describe weather patterns and day length.	Explore simple forces through pushes and pulls.	Explore forces and magnets. Investigate light and shadow.	Investigate sound and vibration. Construct simple electrical circuits	Explain gravity, friction and resistance. Describe Earth, moon and solar system.	Investigate electrical circuits in depth. Explain light reflection and refraction.

Working Scientifically

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ask questions about the world. Explore materials and objects through play. Observe and talk about changes.	Ask simple questions. Make observations. Perform simple tests. Record data.	Plan simple tests. Identify and classify. Gather and record results.	Ask relevant questions. Set up fair tests. Take accurate measurements. Record findings in tables and charts.	Make systematic observations. Record data precisely. Report findings.	Plan enquiries recognising variables. Record increasing complexity of data. Report findings with explanations.	Design complex fair tests. Interpret data patterns. Evaluate methods and reliability. Present conclusions clearly.

Breadth of Study

Across all year groups, science teaching at St Paul's:

Encourages curiosity and questioning

Develops hands-on investigation skills

Builds precise scientific vocabulary

Promotes logical thinking and evidence-based reasoning

Develops environmental responsibility

Christian Ethos & Global Responsibility

Across all year groups, science teaching at St Paul's:

Encourages awe and wonder at creation

Promotes care for living things and the environment

Develops honesty in recording results

Encourages perseverance and cooperation

Reflects on ethical responsibilities of science in society

Values truth and respect for evidence

Year 7 Transition Summary

By the end of Year 6, pupils:

Have secure scientific knowledge across biology, chemistry and physics

Use accurate scientific vocabulary

Plan and carry out fair tests independently

Measure, record and interpret data confidently

Use evidence to explain scientific ideas

Evaluate reliability of investigations

Show curiosity, integrity and responsibility toward the natural world