



NEWTON BLUECOAT CE PRIMARY SCHOOL



Science

Progression of Key Learning

Nursery to Year 6 • 2026–27

QUESTION • INVESTIGATE • OBSERVE • EXPLAIN • DISCOVER

“Shine from the inside out”

Purpose

This document makes the progression from EYFS exploration of the natural world into Newton Bluecoat’s Science curriculum explicit. It shows how children build increasingly connected knowledge across biology, chemistry and physics while developing Working Scientifically from curiosity, observation and simple comparison to increasingly independent enquiry, control of variables, precise measurement and evaluation of evidence.

Progression at a glance

EYFS foundation. Children explore the natural world through first-hand experiences. They notice similarities, differences, patterns and change; ask questions; use their senses; talk about plants, animals, materials, weather and their bodies; and begin to explain what they observe.

Key Stage 1 foundations. Pupils ask simple questions, observe closely, perform simple tests, classify and compare, gather basic data and use observations to suggest answers while building secure knowledge of plants, animals, habitats, materials, seasons and health.

Lower Key Stage 2 development. Pupils ask relevant questions, select enquiry approaches, make systematic observations, use standard units, set up practical enquiries and simple fair tests, record evidence in tables/diagrams/charts and draw supported conclusions.

Upper Key Stage 2 depth. Pupils plan increasingly independent investigations, recognise and control variables, select equipment for precision, repeat readings where appropriate, choose effective ways to present data, explain patterns and causal relationships and evaluate reliability and trust.

The scientific enquiry journey

QUESTION	PREDICT	PLAN	OBSERVE	INTERPRET	EVALUATE
What do we want to know?	What do we think and why?	How will we find out?	Measure & record	What does the evidence show?	How strong is our evidence?

Working Scientifically: questions & enquiry

Stage	Key learning
Nursery	Show curiosity about objects, living things and events; ask simple 'what', 'why' and 'how' questions during play and first-hand exploration.
Reception	Ask questions about the natural world and suggest simple ways to find out; make simple predictions based on what they already know or notice.
Year 1	Ask simple questions and recognise that they can be answered in different ways; make simple predictions and take part in observing over time, pattern seeking, grouping, comparison and simple tests.
Year 2	Ask increasingly purposeful questions; choose from familiar enquiry approaches with support and explain what they are trying to find out.
Year 3	Ask relevant scientific questions; select an appropriate enquiry approach and use secondary sources appropriately where needed.
Year 4	Ask relevant questions with increasing independence; set up practical enquiries, comparative tests and simple fair tests linked clearly to scientific knowledge.
Year 5	Ask scientific questions independently; choose and justify enquiry types; plan comparative and fair tests and identify variables that may need controlling.
Year 6	Frame precise scientific questions; plan investigations with increasing independence; recognise/control variables and make reasoned decisions about samples, duration, repeat readings and secondary sources.

Observation, measurement, recording & data

Stage	Key learning
Nursery	Use senses to notice and describe; compare size, texture, colour, sound and change; use simple tools and represent observations through talk, drawings or photographs.
Reception	Observe closely and use simple equipment with support; compare and sort; record findings through drawings, photographs, simple marks, models or oral explanations.
Year 1	Observe closely using senses and simple equipment; begin to measure; record using drawings, photos, simple tables, pictograms, tally charts and block graphs.

Stage	Key learning
Year 2	Make careful observations and measurements with growing consistency; record findings in simple tables, diagrams and charts and begin to use standard units where appropriate.
Year 3	Make systematic observations, use standard units and a wider range of equipment; record using scientific diagrams, tables, bar charts and classification approaches.
Year 4	Select appropriate equipment from a familiar range, measure with increasing accuracy and organise evidence clearly in tables, diagrams, charts and classification formats.
Year 5	Select equipment for increasing precision; take repeat readings where useful; choose suitable tables, graphs, diagrams and classification keys to present evidence.
Year 6	Take increasingly accurate and precise measurements; repeat readings appropriately; select and justify effective ways to record/present evidence, including tables, classification keys and bar, line or scatter graphs where appropriate.

Evidence, patterns, conclusions & evaluation

Stage	Key learning
Nursery	Talk about what happened and what they noticed; identify simple similarities, differences or changes.
Reception	Describe what they notice, make simple comparisons and offer an explanation using their experiences and developing knowledge.
Year 1	Use observations and ideas to suggest answers; identify simple patterns and say what happened in a test or observation.
Year 2	Use results to answer a question; identify similarities, differences and simple patterns and begin to say whether results matched a prediction.
Year 3	Use evidence to answer questions, identify similarities/differences/patterns and draw simple conclusions; suggest improvements to an enquiry.
Year 4	Explain findings using evidence; identify patterns and relationships and recognise when results do not fit the expected pattern.
Year 5	Explain patterns and emerging causal relationships; identify anomalies; evaluate methods and suggest how evidence could be made more trustworthy.

Stage	Key learning
Year 6	Explain patterns and causal relationships; identify anomalous results; evaluate method, accuracy, precision, sources and degree of trust; explain how evidence supports or refutes ideas.

Living things, habitats & classification

Stage	Key learning
Nursery	Notice plants and animals in the immediate environment; name familiar living things; understand that living things need care and begin to notice where they live.
Reception	Explore plants, animals and habitats through outdoor learning; notice similarities/differences and seasonal change; begin simple grouping by observable features.
Year 1	Identify and name common animals; distinguish broad animal groups; understand basic needs and care for the planet; observe plants and seasonal changes across the year.
Year 2	Explore living things and habitats; identify how habitats provide basic needs; observe plants and animals locally throughout the year; understand survival and growth.
Year 3	Develop knowledge of animals including humans and plant growth; use observable features to compare living things and connect organisms to their environments.
Year 4	Recognise that environments can change and affect living things; group and classify organisms in local habitats using increasingly specific characteristics.
Year 5	Describe life cycles of plants and animals and observe them in the local environment across the year; develop understanding of reproduction and habitat relationships.
Year 6	Classify living things at greater depth using observable characteristics and classification keys; connect variation, adaptation, inheritance and evolution to survival in environments.

Plants

Stage	Key learning
Nursery	Explore seeds, flowers, leaves and growing things; notice that plants change and need care.
Reception	Observe growth and seasonal change; name common plant parts in familiar contexts; plant seeds and talk about what helps them grow.
Year 1	Identify and name common wild/garden plants and basic structures; observe plant growth and seasonal change; grow plants and connect growth with simple needs.
Year 2	Observe and describe how seeds and bulbs grow; investigate conditions needed for healthy plant growth.
Year 3	Explain functions of roots, stems, leaves and flowers; investigate requirements for growth and understand pollination and seed dispersal.
Year 4	Revisit plants through local habitats and environmental observation, applying prior knowledge to classification and changes in habitat.
Year 5	Observe plant life cycles in the local environment and connect reproduction and life cycles with prior knowledge of structures and growth.
Year 6	Apply plant knowledge when classifying living things and explaining adaptation/evolution; connect characteristics with environmental conditions.

Animals including humans, health & the body

Stage	Key learning
Nursery	Name familiar body parts; explore movement and senses; notice growth from baby to child; talk about simple healthy choices.
Reception	Know key external body parts and senses; talk about growth, exercise, food, hygiene and what helps us stay healthy.
Year 1	Name body parts and senses; identify common animals; understand basic needs and simple ways to care for the body and other living things.
Year 2	Understand that animals including humans need food, water and air; explore growth, survival, exercise, hygiene and healthy choices.

Stage	Key learning
Year 3	Understand nutrition, skeletons and muscles and how they support health and movement.
Year 4	Understand teeth, digestion and the digestive system, connecting structures to their functions.
Year 5	Develop understanding of animal and human life cycles, with human life cycles linked appropriately to PSHE as identified in the curriculum.
Year 6	Explain the circulatory system and effects of exercise; connect diet and lifestyle with health and body function.

Materials & states of matter

Stage	Key learning
Nursery	Explore everyday materials through touch and play; describe simple properties such as hard, soft, rough, smooth, bendy or waterproof.
Reception	Compare and sort materials by observable properties; talk about which materials might suit a simple purpose.
Year 1	Identify and name everyday materials; describe simple physical properties; compare/group materials and begin to connect properties with uses.
Year 2	Compare suitability of materials for particular uses; explore how some solid objects can change shape by squashing, bending, twisting or stretching.
Year 3	Develop relevant material knowledge through rocks: compare and group rocks by appearance/properties and understand simply how fossils/soil form.
Year 4	Compare solids, liquids and gases; understand changes of state and the role of heating/cooling in melting, freezing, evaporation and condensation.
Year 5	Test material properties; understand dissolving, separation and material changes; distinguish reversible and irreversible changes.
Year 6	Apply knowledge of material properties and change where relevant within broader scientific explanations and enquiry, using precise vocabulary and evidence.

Forces, magnets & mechanisms

Stage	Key learning
Nursery	Explore pushes, pulls, rolling, sliding and how objects move during play.
Reception	Notice that pushes and pulls can change movement; compare how objects move on different surfaces and explore simple magnets informally where encountered.
Year 1	Develop everyday understanding of pushes, pulls and movement through practical experiences and simple observation.
Year 2	Apply simple ideas about movement and forces through practical comparisons where relevant to materials and everyday phenomena.
Year 3	Compare how things move on different surfaces; understand that forces act between objects; investigate magnets, attraction/repulsion and magnetic materials.
Year 4	Apply force ideas where relevant within practical enquiry and physical phenomena; make careful comparisons and measurements.
Year 5	Investigate gravity, friction, air resistance and water resistance; understand how mechanisms such as levers, pulleys and gears can affect force and movement.
Year 6	Apply prior force knowledge when interpreting evidence and explaining physical phenomena, making increasingly precise causal explanations.

Light, sound, Earth & space

Stage	Key learning
Nursery	Notice daylight, darkness, shadows, weather sounds and other sensory features of the environment.
Reception	Explore light/dark, shadows, sound and seasonal/weather changes through first-hand experiences and talk.
Year 1	Observe seasonal changes throughout the year, including weather and sunlight; develop simple language for light and environmental change.
Year 2	Continue longitudinal observation of the local environment and weather; use evidence to describe change over time.
Year 3	Understand that light is needed to see, investigate shadows and reflective surfaces; develop astronomy knowledge alongside the light unit.

Stage	Key learning
Year 4	Understand how sounds are made through vibration and how pitch/volume can change; apply observation and testing to sound phenomena.
Year 5	Explain movement of Earth and planets relative to the Sun and the Moon relative to Earth; understand day/night and develop knowledge of Galileo's contribution.
Year 6	Explain that light appears to travel in straight lines; use this to explain seeing, shadows and reflection, building on earlier light knowledge.

Electricity

Stage	Key learning
Nursery	Explore battery-operated toys and simple cause-and-effect devices safely as part of play where available.
Reception	Notice that some devices need electricity/power to work; use simple electrical equipment safely with adult support.
Year 1	Develop everyday awareness of electrical devices and safety; electricity is not a discrete Year 1 unit in the supplied curriculum.
Year 2	Develop everyday awareness of electrical devices and safety; electricity is not a discrete Year 2 unit in the supplied curriculum.
Year 3	Build on everyday experiences of electricity where relevant; discrete curriculum study begins in Year 4.
Year 4	Construct simple series circuits; identify common components; recognise whether a circuit will work and explore conductors and insulators.
Year 5	Apply prior circuit understanding where relevant; discrete electricity is revisited formally in Year 6.
Year 6	Use recognised circuit symbols; compare and give reasons for variations in component function, including brightness, loudness or on/off effects, by changing components within circuits.

Evolution, inheritance & scientific ideas over time

Stage	Key learning
Nursery	Notice that babies grow and that living things can be similar to or different from one another.
Reception	Talk about growth and similarities/differences between living things and family members in age-appropriate ways.
Year 1	Recognise simple similarities and differences between animals and plants and observe change over time.
Year 2	Understand that young animals grow into adults and plants grow from seeds/bulbs; compare life stages and survival needs.
Year 3	Learn about Mary Anning in the context of rocks/fossils and recognise that evidence from the past helps scientists develop ideas.
Year 4	Recognise that scientific explanations are based on evidence and may be refined through further observation and enquiry.
Year 5	Encounter Galileo Galilei and Isaac Newton; understand that scientific knowledge develops through observation, testing, reasoning and new evidence.
Year 6	Explain inheritance, variation, adaptation and evolution; learn about Charles Darwin and Alfred Russel Wallace and revisit Mary Anning; understand that scientific ideas can change when new evidence becomes available.

Scientific vocabulary & communication

Stage	Key learning
Nursery	Use everyday words to describe body, animals, plants, weather, materials, movement and what they notice.
Reception	Use increasingly specific vocabulary such as plant, animal, grow, change, season, material, hard/soft, light/dark, healthy and senses.
Year 1	Use observe, question, test, compare, classify, identify, material, property, plant, seed, root, stem, leaf, animal, habitat, healthy, senses and season in context.
Year 2	Use KS1 scientific vocabulary with increasing accuracy when describing tests, materials, plants, habitats, growth, survival and health.

Stage	Key learning
Year 3	Use enquiry, evidence, measurement, standard unit, fair test, pattern, prediction, conclusion, force, magnet, reflection, skeleton and nutrient appropriately.
Year 4	Use variable, vibration, circuit, conductor, insulator, digestion and state of matter alongside increasingly precise enquiry language.
Year 5	Use accuracy, repeat reading, reversible, irreversible, dissolve, solution, friction, air resistance, orbit and related unit vocabulary accurately.
Year 6	Use precision, sample, causal relationship, anomaly, reliability, credibility, classification key, adaptation, inheritance, evolution and circulation precisely in oral and written explanations.

Year-by-year Science journey

Year 1: The Human Body • Everyday Materials • Animals • Caring for the Planet • Plants • Growing and cooking • plants and seasonal changes observed throughout the year, including sunlight and weather links.

Year 2: Health: Animals including Humans • Uses of Everyday Materials • Plants: Growing plants • Living Things & Habitats • Animals including Humans: survival & growth • local plants and animals observed throughout the year.

Year 3: Light & Astronomy • Health: Animals including Humans • Forces & Magnets • Rocks • Animals including Humans: skeletons & movement • Plants: functions & growth • scientist: Mary Anning.

Year 4: Electricity • Sound • Animals including Humans: Teeth & Digestion • States of Matter • Living Things & Habitats • local environment used throughout the year to observe habitat change.

Year 5: Properties & Changes: testing • material changes • reversible/irreversible changes • Earth & Space • Forces • Living Things & Habitats • local life-cycle observations • scientists: Galileo Galilei and Isaac Newton.

Year 6: Evolution & Inheritance • Light • Living Things & Habitats: classification • Electricity • Animals including Humans: circulation & exercise • Health: diet & lifestyle • scientists: Charles Darwin, Alfred Russel Wallace and Mary Anning.

Five enquiry approaches

Observing over time • Pattern seeking • Identifying, classifying and grouping • Comparative and fair testing • Research using secondary sources

End-of-phase expectations

By the end of Nursery: Children are curious about the natural world, notice and describe simple changes and differences, explore through their senses, ask questions and talk about familiar plants, animals, materials, weather, movement and their bodies.

By the end of Reception: Children explore and describe the natural world, make simple comparisons, observe change, ask questions, use simple equipment with support and communicate what they notice through talk, drawings, photographs or models.

By the end of Key Stage 1: Pupils ask simple questions, observe closely, perform simple tests, compare/classify, gather and record basic data, use observations to suggest answers and communicate using developing scientific vocabulary.

By the end of Lower Key Stage 2: Pupils ask relevant questions, select enquiry approaches, make systematic observations, use standard units, conduct practical enquiries and simple fair tests, record evidence appropriately and draw evidence-based conclusions.

By the end of Key Stage 2: Pupils plan increasingly independent enquiries, recognise/control variables, measure with accuracy and precision, select effective data presentation, explain patterns and causal relationships, identify anomalies and evaluate reliability and degree of trust.

Thinking like a scientist

- What do I notice?
- What do I already know that might help?
- What is my scientific question?
- What do I predict, and why?
- What evidence will I need?
- Which enquiry approach will help me answer the question?
- Which variables matter and what should I control?
- How accurately should I observe or measure?
- Is there a pattern or causal relationship in the evidence?
- Does the evidence support my idea?
- Are there any anomalous results?
- How confident am I in the result and how could the evidence be improved?
- What should I investigate next?