SCIENCE: PROGRESSION OF VOCABULARY

Bredbury Green Primary School | Nursery-Year 6 curriculum companion | National Curriculum aligned

Purpose and principles

At Bredbury Green, we recognise that a secure understanding of scientific vocabulary is essential in helping children to develop their knowledge and understanding of the world around them. Vocabulary is taught explicitly and revisited regularly so that children are increasingly able to use scientific language accurately when talking, reading and writing about science.

This document supports our Science curriculum and identifies the key vocabulary children should know and understand as they move through school. It includes both Tier 2 vocabulary, which supports thinking and learning across the curriculum, and Tier 3 vocabulary, which is specific to scientific concepts and topics. Vocabulary has been carefully sequenced so that children build upon what they already know, revisit important language in different contexts and develop increasingly precise scientific explanations.

The vocabulary identified reflects the content of our Science curriculum and the requirements of the National Curriculum for Science. Working Scientifically vocabulary is developed alongside substantive scientific knowledge, enabling children to ask questions, observe, compare, classify, measure, record, interpret evidence and draw conclusions with increasing independence.

In EYFS, vocabulary development begins through first-hand experiences, exploration, talk and carefully modelled language. Nursery provision has a strong focus on developing children's spoken language and understanding, informed by WellComm, while Reception builds upon these foundations and prepares children for the scientific language and concepts they will encounter in Year 1.

Whole-school conceptual vocabulary

Concept	Early language (EYFS-Y2)	Developing language (Y3-Y6)	Retrieval thread
Living things and life processes	alive, plant, animal, grow, food, water	organism, habitat, reproduction, nutrition, classification, adaptation, evolution	Build from recognising and naming living things to explaining life

			processes, interdependence, classification and change over time.
Structure and function	part, body, root, leaf, shape	structure, function, skeleton, digestive system, circulatory system, vessel	Repeatedly connect what a structure is like with the job it performs.
Materials and matter	material, hard, soft, bend, change	property, solid, liquid, gas, solution, mixture, reversible, conductivity	Move from sensory descriptions to measurable properties, states and explanations of material change.
Forces, energy and physical processes	push, pull, light, sound, move	force, friction, magnetic, vibration, electricity, gravity, resistance	Progress from observable effects to increasingly abstract explanations of physical processes.
Earth and environment	weather, season, day, night, Earth	environment, water cycle, solar system, rotation, planet, sustainability	Connect local observation to larger Earth systems and space.
Scientific enquiry	notice, question, test, measure, record	enquiry, variable, prediction, evidence, conclusion, accuracy, precision, causal relationship	Develop disciplinary vocabulary alongside substantive science in every year.

Vocabulary progression by year group and unit

The lists below are priority teaching vocabulary, not exhaustive glossaries. National Curriculum science-specific terminology from the statutory requirements has been included at the relevant year/phase. Where the National Curriculum allows phase flexibility, the vocabulary is positioned to match Bredbury Green's year-by-year curriculum.

Nursery | WellComm-informed scientific foundations

Curriculum concept: Foundations across science

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
same, different, big, small, more, less, change, notice, find, because	plant, animal, body, water, light, hot, cold, wet, dry, push, pull

Retrieval and progression: Use first-hand exploration and adult modelling. Prioritise action, describing, comparing and positional/concept language. Children notice changes, name familiar living things/body parts/materials and answer simple 'what?' and 'why?' questions.

Reception | Exploring the natural world

Curriculum concept: Foundations across science

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
observe, compare, sort, change, question, predict, explain, record	living, dead, plant, animal, seed, root, stem, leaf, material, season, weather, force

Retrieval and progression: Retrieve Nursery noticing/comparison language. Encourage children to observe closely, sort by simple features, talk about change and make simple predictions. Bridge explicitly into Year 1 plants, animals, materials and seasonal change.

Year 1 | Seasonal Changes

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
observe, describe, change, compare, vary	season, spring, summer, autumn, winter, weather, day length

Retrieval and progression: Retrieve Reception weather/change. Use repeated observations across the year so season, weather and day length become connected concepts.

Year 1 | Plants

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
identify, name, describe, structure, compare	wild plant, garden plant, deciduous, evergreen, flowering plant, root, stem, leaf, flower, tree

Retrieval and progression: Retrieve EYFS plant/root/stem/leaf. Introduce statutory plant groups and structures and use them when identifying and comparing specimens.

Year 1 | Animals (Classification)

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
identify, name, group, describe, compare	fish, amphibian, reptile, bird, mammal, carnivore, herbivore, omnivore, animal, structure

Retrieval and progression: Retrieve animal/same/different. Secure statutory animal groups and diet groups; explain grouping using observable structures and what animals eat.

Year 1 | Materials

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
object, material, property, compare, group	wood, plastic, glass, metal, water, rock, physical property

Retrieval and progression: Retrieve sensory describing words. Distinguish object from material and group materials using physical properties.

Year 1 | The Human Body and Senses

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
identify, label, associate, sense, explore	head, neck, arm, elbow, leg, knee, face, ear, eye, hair, mouth, teeth, sight, hearing, smell, taste, touch

Retrieval and progression: Retrieve familiar body-part language and formalise links between body parts/sense organs and the five senses.

Year 2 | Habitats and Food Chains

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
living, dead, depend, source, suitable	habitat, microhabitat, food chain, animal, plant, survival, food source

Retrieval and progression: Retrieve Y1 plants/animals. Distinguish living, dead and never alive; explain how habitats meet needs and how simple food chains show feeding relationships.

Year 2 | Observe a Plant Grow

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
observe, mature, condition, healthy, survive	seed, bulb, plant, water, light, temperature, growth

Retrieval and progression: Retrieve Y1 plant structures. Observe change over time and connect water, light and suitable temperature to healthy plant growth.

Year 2 | Properties of Materials

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
suitable, purpose, change, compare, shape	wood, metal, plastic, glass, brick, rock, paper, cardboard, solid object, squash, bend, twist, stretch

Retrieval and progression: Retrieve Y1 object/material/property. Explain suitability for particular uses and describe statutory ways solid objects can change shape.

Year 2 | Survival and Offspring

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
offspring, adult, need, survival, grow	animal, human, water, food, air, reproduction, growth

Retrieval and progression: Retrieve living/grow. Use offspring/adult and basic-needs vocabulary precisely while keeping reproduction at an age-appropriate level.

Year 2 | Exercise and Health

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
healthy, importance, amount, strong, hygiene	exercise, food, diet, nutrition, hygiene, health

Retrieval and progression: Retrieve body/survival. Explain how exercise, appropriate food and hygiene contribute to health.

Year 3 | Flowering Plants and their Functions

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
function, requirement, transport, formation, dispersal	root, stem, trunk, leaf, flower, air, light, water, nutrient, soil, pollination, seed formation, seed dispersal, life cycle

Retrieval and progression: Retrieve Y1-2 plant vocabulary. Progress from naming structures to explaining function, requirements, water transport and reproductive processes.

Year 3 | Rocks and Fossils

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
appearance, property, compare, preserve, evidence	rock, fossil, soil, organic matter, physical property

Retrieval and progression: Retrieve materials/property. Explain fossil formation and soil composition using precise geological vocabulary.

Year 3 | Light and Shadow

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
absence, reflect, dangerous, protect, pattern	light, dark, reflection, surface, Sun, shadow, light source, opaque

Retrieval and progression: Retrieve light/dark from EYFS. Explain seeing, reflection and shadow formation and identify patterns in shadow size.

Year 3 | Forces and Magnets

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
contact, distance, attract, repel, predict	force, surface, magnetic force, magnet, magnetic material, pole, north pole, south pole

Retrieval and progression: Retrieve push/pull. Distinguish contact and non-contact forces and explain attraction/repulsion in relation to magnetic poles.

Year 3 | Movement and Survival

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
support, protect, movement, amount, survive	nutrition, skeleton, muscle, animal, human

Retrieval and progression: Retrieve Y2 health and food. Connect nutrition to survival and skeletons/muscles to support, protection and movement.

Year 4 | Classification and Environments

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
classify, identify, environment, change, danger	classification key, living thing, vertebrate, invertebrate, flowering plant, non-flowering plant

Retrieval and progression: Retrieve Y1 animal groups/Y2 habitats. Use keys and increasingly precise characteristics to classify living things and consider environmental change.

Year 4 | Food Chains

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
construct, interpret, role, depend, relationship	food chain, producer, predator, prey

Retrieval and progression: Retrieve Y2 food chain. Introduce producer/predator/prey and interpret feeding relationships more precisely.

Year 4 | The Water Cycle

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
rate, temperature, change, cycle, process	water cycle, evaporation, condensation, water vapour

Retrieval and progression: Retrieve weather/water and connect temperature to rates of evaporation and condensation within a cycle.

Year 4 | States of Matter

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
state, heat, cool, temperature, measure	solid, liquid, gas, change of state, degrees Celsius, melting, boiling, evaporation, condensation

Retrieval and progression: Retrieve materials/properties. Classify states and explain changes caused by heating/cooling, using °C accurately.

Year 4 | Electricity

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
complete, component, connect, control, flow	electricity, appliance, series circuit, cell, wire, bulb, lamp, switch, buzzer, battery, conductor, insulator, metal

Retrieval and progression: Introduce statutory circuit vocabulary through construction. Explain complete loops, switches, conductors and insulators.

Year 4 | The Digestive System

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
function, process, break down, system, organ	digestive system, mouth, tongue, teeth, oesophagus, stomach, small intestine, large intestine

Retrieval and progression: Retrieve body structures. Connect named digestive parts to their simple functions and the movement/processing of food.

Year 4 | Our Teeth

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
type, function, damage, protect, compare	tooth, teeth, incisor, canine, premolar, molar

Retrieval and progression: Retrieve carnivore/herbivore and digestion. Name tooth types and connect shape/function to breaking down food.

Year 4 | Sound

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
pattern, strength, distance, quieter, travel	sound, vibration, medium, ear, pitch, volume, sound source

Retrieval and progression: Use vibration as the central explanatory concept; connect pitch to features of the source and volume to vibration strength.

Year 5 | Life Cycles

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
cycle, reproduce, compare, stage, difference	life cycle, mammal, amphibian, insect, bird, reproduction, sexual reproduction, asexual reproduction, pollination, seed formation, seed dispersal

Retrieval and progression: Retrieve Y2 offspring and Y3 plant reproduction. Compare life cycles and distinguish ways plants/animals reproduce.

Year 5 | Materials and States of Matter

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
evidence, separate, recover, property, reversible	hardness, solubility, transparency, conductivity, electrical conductivity, thermal conductivity, magnetism, dissolve, solution, substance, mixture, filtering, sieving, evaporating, solid, liquid, gas, reversible change, burning, acid, bicarbonate of soda, new material

Retrieval and progression: Retrieve Y4 states/electricity. Use evidence from tests to compare properties, separate mixtures and distinguish reversible from usually irreversible changes.

Year 5 | Earth and Space

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
relative, movement, approximately, apparent, rotate	Earth, Sun, Moon, planet, solar system, spherical body, rotation, day, night

Retrieval and progression: Retrieve Y1 day length and Y3 light. Use relative movement and rotation to explain day/night and apparent solar movement.

Year 5 | Forces

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
effect, unsupported, resistance, mechanism, greater	force, gravity, air resistance, water resistance, friction, lever, pulley, gear

Retrieval and progression: Retrieve Y3 forces. Explain named forces and how mechanisms can alter the effect of a force.

Year 5 | Human Development

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
develop, stage, physical, emotional, mental	human life cycle, birth, childhood, adolescence, puberty, adulthood, old age

Retrieval and progression: Retrieve Y2 offspring/adult. Describe changes as humans develop to old age, including puberty, using respectful scientific language.

Year 6 | Classification and the Linnaean System

Curriculum concept: The Planet

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
characteristic, similarity, difference, subdivide, reason	classification, classification key, micro-organism, plant, animal, vertebrate, invertebrate, fish, amphibian, reptile, bird, mammal, Carl Linnaeus

Retrieval and progression: Retrieve Y4 classification. Classify into broad groups and subdivisions and justify decisions using specific observable characteristics.

Year 6 | Evolution and Inheritance

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific

evidence, inherit, variation, identical, adapt	fossil, offspring, characteristic, adaptation, environment, evolution, species

Retrieval and progression: Retrieve Y3 fossils and Y5 reproduction. Use fossils as evidence of change over time and connect inherited variation/adaptation to evolution.

Year 6 | Light and the Eye

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
straight, reflect, source, shape, explain	light, light source, reflection, eye, shadow, object

Retrieval and progression: Retrieve Y3 light. Use the straight-line model of light to explain seeing, reflection and shadow shape.

Year 6 | Electricity and Circuits

Curriculum concept: Discoveries

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
variation, function, represent, reason, depend	series circuit, lamp, buzzer, cell, voltage, component, bulb, switch, circuit symbol, circuit diagram

Retrieval and progression: Retrieve Y4 circuits. Relate cell number/voltage to component output and represent series circuits using recognised symbols.

Year 6 | The Circulatory System

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
transport, function, structure, remove, system	circulatory system, heart, blood vessel, artery, vein, capillary, blood, oxygen, nutrient, waste product

Retrieval and progression: Retrieve digestive/nutrition vocabulary. Explain how heart, blood and vessels transport substances around the body.

Year 6 | Lifestyle and the Body

Curriculum concept: The Body

Tier 2: academic / transferable	Tier 3: scientific / topic-specific
impact, choice, function, health, harmful	diet, exercise, drug, lifestyle, nutrient, water, circulatory system

Retrieval and progression: Retrieve Y2/Y5 health vocabulary. Explain how lifestyle affects body function and how nutrients/water are transported.

Working Scientifically: vocabulary progression

Phase	Priority disciplinary vocabulary	Progression expectation
EY / Nursery-Reception	notice, look, ask, question, same, different, sort, group, test, try, measure, count, record, explain, predict	Build oral enquiry language through first-hand exploration; adults model complete sentences and causal language.
KS1 / Years 1-2	question, observe, equipment, simple test, identify, classify, compare, group, observation, answer, data, gather, record, measure	Directly reflects the school's EY/KS1 disciplinary progression and the statutory KS1 Working Scientifically requirements.
LKS2 / Years 3-4	scientific question, enquiry, practical enquiry, comparative test, fair test, systematic observation, accurate measurement, standard unit, thermometer, data logger, classify, present, labelled diagram, key, bar chart, table, finding, result, conclusion, prediction, improvement, evidence	Use these terms through substantive units; pupils should increasingly choose and explain methods rather than simply follow instructions.
UKS2 / Years 5-6	scientific enquiry, variable, control variable, measurement, scientific equipment, accuracy, precision, repeat reading, scientific diagram, classification key, scatter graph, bar graph, line graph, test result, prediction, comparative test, fair test, conclusion, causal relationship, degree of trust, scientific evidence, support, refute, evaluate	Directly reflects the school's UKS2 disciplinary progression and statutory Working Scientifically requirements; vocabulary should support independent planning, analysis and evaluation.

National Curriculum statutory vocabulary

This table records the principal science-specific terminology contained in the statutory KS1/KS2 requirements. Words used only as illustrative examples in non-statutory notes and guidance are not treated as statutory, although some are included elsewhere where they support Bredbury Green's curriculum.

Stage	Statutory science-specific terminology covered
Year 1	plants: wild, garden, deciduous, evergreen, flowering plant; animals: fish, amphibians, reptiles, birds, mammals, carnivores, herbivores, omnivores; materials: object, material, wood, plastic, glass, metal, water, rock, physical properties; seasonal changes: seasons, weather, day length; body and senses.

Year 2	living, dead, never alive, habitat, microhabitat, basic needs, food chain, food source; seeds, bulbs, mature plants, water, light, suitable temperature; offspring, adults, survival, water, food, air, exercise, food amounts/types, hygiene; suitability, wood, metal, plastic, glass, brick, rock, paper, cardboard, solid objects, squashing, bending, twisting, stretching.
Years 3-4	plant functions, roots, stem/trunk, leaves, flowers, air, light, water, nutrients, soil, pollination, seed formation, seed dispersal; nutrition, skeletons, muscles; rocks, fossils, soils, organic matter; light, dark, reflection, Sun, shadows, light source, opaque; force, contact, magnetic force, magnets, attract, repel, magnetic materials, poles; classification keys, environments; digestive system, teeth, food chains, producers, predators, prey; solids, liquids, gases, change of state, temperature, degrees Celsius, evaporation, condensation, water cycle; sound, vibration, medium, pitch, volume; electricity, appliances, series circuit, cells, wires, bulbs/lamps, switches, buzzers, battery, complete loop, conductors, insulators.
Years 5-6	life cycles, mammal, amphibian, insect, bird, reproduction; human development/old age; hardness, solubility, transparency, electrical/thermal conductivity, magnets, dissolve, solution, substance, solids/liquids/gases, mixtures, filtering, sieving, evaporating, comparative/fair tests, reversible changes, burning, acid, bicarbonate of soda, new materials; Earth, planets, Sun, solar system, Moon, spherical bodies, rotation, day/night; gravity, air resistance, water resistance, friction, levers, pulleys, gears; classification, micro-organisms, plants, animals, characteristics; circulatory system, heart, blood vessels, blood, diet, exercise, drugs, lifestyle, nutrients, water; fossils, offspring, variation, adaptation, evolution; light sources, reflection, eye, shadows; lamp, buzzer, cells, voltage, components, bulbs, switches, recognised circuit symbols.

UNCRC connections

Science provides meaningful opportunities to connect learning with children's rights where the link supports the scientific content.

- **Article 12 - respect for children's views:** Pupils ask questions, make predictions, discuss evidence and communicate conclusions.
- **Article 13 - freedom of expression:** Pupils communicate scientific ideas through talk, writing, diagrams, tables, graphs and presentations.
- **Article 17 - access to information:** Pupils use appropriate secondary sources and learn to distinguish evidence from unsupported claims.
- **Article 24 - health:** Human biology, nutrition, exercise, hygiene, puberty and lifestyle units develop knowledge relevant to health and wellbeing.
- **Article 28 - right to education:** A coherent science curriculum gives all pupils access to powerful scientific knowledge and disciplinary practices.

- **Article 29 - goals of education:** Science develops curiosity, reasoning, respect for the natural world and pupils' capacities and talents.

Suggested retrieval routines

- **Every lesson: 2-minute retrieval:** Recall 2-3 previously taught terms and require pupils to use at least one in a complete scientific explanation.
- **Beginning of a new unit:** Retrieve prerequisite vocabulary from earlier years, particularly recurring concepts such as structure, function, property, force, habitat, evidence and change.
- **During practical work:** Name the disciplinary action explicitly: observe, measure, classify, control, record, compare, conclude or evaluate. Expect pupils to use the same language.
- **Across year groups:** Increase precision rather than simply replacing words: notice -> observe -> systematic observation; fair -> fair test -> control variables; answer -> conclusion -> evidence-based conclusion.
- **End of unit:** Check recognition, accurate definition-in-context, application to an example, and use within an explanation or scientific argument.

What progression should look like

- **Nursery:** Use functional oral language to notice, name, compare and describe familiar natural phenomena, materials, living things and body parts.
- **Reception:** Observe, sort, compare, predict and explain simple changes using increasingly precise vocabulary from the natural world.
- **Years 1-2:** Name and classify common phenomena and materials, describe observable properties and changes, and use simple scientific enquiry language to answer questions.
- **Years 3-4:** Use precise scientific terms to explain functions, processes and relationships; measure and record systematically; draw simple conclusions using evidence.
- **Years 5-6:** Use increasingly abstract scientific vocabulary to explain systems and causal relationships, plan enquiries, control variables, analyse data and evaluate evidence with accuracy and precision.

Implementation notes

- Teach vocabulary through the scientific concept or enquiry in which it has meaning; avoid isolated word-list learning.
- Make morphology and etymology explicit where useful, for example micro-habitat, in-vertebrate, evapor-ation, conduct-ivity and circul-atory.
- Require accurate spoken language before expecting extended written explanations; sentence stems can support pupils to connect vocabulary causally.
- Working Scientifically must be embedded through substantive science rather than taught as a disconnected unit.
- Revisit high-value concepts repeatedly across the curriculum: structure/function, cause/effect, change, system, classification, evidence and interdependence.

- Nursery and Reception are complementary foundations. Nursery vocabulary is deliberately WellComm-informed, prioritising comprehension, action words, concepts, describing and comparison.