

## Nursery (Ages 3–4)

| Term     | Theme / Focus                 | Science-Related Learning Opportunities   | Working Scientifically Skills   |
|----------|-------------------------------|--|---|
| Autumn 1 | All About Me & My Environment | Explore senses; body parts; discuss feelings; simple observations of the environment.                    | Explore with senses; ask simple questions; notice patterns.                           |
| Autumn 2 | Seasonal Changes (Autumn)     | Collect leaves, observe weather, compare day lengths.  | Observe and describe changes; record simple observations through drawings or photos.  |
| Spring 1 | Animals & Pets                | Identify pets and wild animals; explore diet and habitats; caring for animals (class pets if available). | Classify animals; observe behaviors; ask questions about needs.                       |
| Spring 2 | Plants & Growth               | Plant seeds, observe growth; explore textures, colours, smells.  | Make predictions; observe changes over time; record observations with drawings.       |
| Summer 1 | Water, Sand, and Materials    | Explore floating/sinking, mixing materials, properties of sand/water.                                    | Test floating/sinking; mix substances and observe changes; talk about results.        |
| Summer 2 | Seasonal Changes (Summer)     | Observe summer weather, plant growth, mini-beasts in outdoor area.                                       | Record observations; compare with previous seasons; ask questions about what is seen. |

## Reception (Ages 4–5)

| Term     | Theme / Focus                  | Science-Related Learning Opportunities  | Working Scientifically Skills   |
|----------|--------------------------------|---|---|
| Autumn 1 | All About Me & My Body         | Explore body parts, senses, health and hygiene; basic human needs.                        | Ask questions; observe differences between people; record observations through drawings/labels.     |
| Autumn 2 | Seasonal Changes (Autumn)      | Explore leaves, weather, night/day, clothing choices; nature walks.                       | Make observations and comparisons; record changes using drawings or tally charts; discuss patterns. |
| Spring 1 | Animals, Habitats & Diet       | Identify animals, where they live, what they eat; classify animals; simple life cycles.   | Compare animals' diets and habitats; observe life cycles; ask why/how questions.                    |
| Spring 2 | Plants & Growth                | Grow seeds/beans; explore different plants; explore needs of plants.                      | Make predictions; record changes over time; observe differences.                                    |
| Summer 1 | Materials & Forces             | Explore everyday materials (wood, metal, fabric); test properties; push/pull experiments. | Investigate materials' properties; perform simple push/pull experiments; discuss results.           |
| Summer 2 | Seasonal Changes & Mini-Beasts | Observe summer plants, insects, pond life; seasonal comparisons.                          | Collect and record observations; ask questions; compare seasons using simple charts.                |



## Y1/2 Year A

| Term            | Topic   | Knowledge (NC Statements)   | Working Scientifically  |
|-----------------|---|---|---|
| <b>Autumn 1</b> | Animals including Humans (Animals & Offspring)    | Identify and name common animals including fish, amphibians, reptiles, birds and mammals; identify carnivores, herbivores and omnivores; describe and compare structures of animals; notice that animals, including humans, have offspring which grow into adults; find out about basic needs; describe importance of exercise, diet and hygiene. | Identify and classify animals using keys/pictures; observe changes in baby → adult animals; ask questions about diet and survival.                    |
| <b>Autumn 2</b> | Seasonal Changes (Autumn/Winter)                  | Observe changes across the four seasons; describe weather associated with the seasons; notice and describe how day length varies.   | Make regular weather observations; record day length using pictograms or charts; ask questions about seasonal change.                                 |
| <b>Spring 1</b> | Everyday Materials (Properties)                   | Distinguish between an object and the material from which it is made; identify and name a variety of everyday materials; describe their simple physical properties; compare and group materials.  | Sort and classify objects by material; perform simple tests to compare material properties (e.g. waterproofing); gather and record results in tables. |
| <b>Spring 2</b> | Plants (Growth & Structure)                       | Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees; identify and describe the basic structure of flowering plants and trees.   | Observe closely and sketch labelled plants; identify and classify wild vs. garden plants; use magnifiers to look at plant structures.                 |
| <b>Summer 1</b> | Living Things and Their Habitats (Local Habitats) | Explore and compare differences between living, dead, and things that have never been alive; identify habitats and describe how they provide for basic needs; identify and name a variety of plants and animals; describe simple food chains.   | Ask questions about what lives where; collect data from habitat surveys; construct simple food chains; record observations with tally charts.         |
| <b>Summer 2</b> | Seasonal Changes (Spring/Summer)                  | Observe changes across the four seasons; describe weather associated with the seasons; notice and describe how day length varies.   | Compare seasonal data with Autumn; make simple line graphs/pictograms of weather; ask and answer comparative questions.                               |



## Year 1/2 Year B

| Term            | Topic   | Knowledge (NC Statements)   | Working Scientifically   |
|-----------------|---|---|--|
| <b>Autumn 1</b> | Seasonal Changes (Autumn, Revisit)                | Observe changes across the four seasons; describe weather associated with the seasons; notice and describe how day length varies.   | Record weather data over time; compare with Year A Autumn records; ask questions about patterns in seasons.  |
| <b>Autumn 2</b> | Animals including Humans (Ourselves & Senses)     | Identify, name, draw and label the basic parts of the human body; say which part of the body is associated with each sense.   | Use simple tests to explore senses (taste, smell, hearing tests); record results in tables; identify patterns in sense responses.                                      |
| <b>Spring 1</b> | Uses of Everyday Materials                        | Identify and compare suitability of everyday materials (wood, metal, plastic, glass, brick, rock, paper, cardboard); find out how shapes of solid objects can be changed.                 | Plan and carry out simple tests (e.g. best material for umbrella, strongest material); record results using tables; use results to suggest answers.                    |
| <b>Spring 2</b> | Plants (Seeds & Bulbs)                            | Observe and describe how seeds and bulbs grow into mature plants; find out and describe how plants need water, light and suitable temperature to grow and stay healthy.                   | Plant seeds/bulbs under different conditions; make predictions and observe over time; record growth in drawings/measurements; use results to suggest what plants need. |
| <b>Summer 1</b> | Living Things and Their Habitats (World Habitats) | Identify habitats to which living things are suited; describe how habitats provide for needs; identify and name a variety of plants and animals in habitats; describe simple food chains. | Compare world habitats using pictures/films; classify animals by habitat; construct simple food chains; ask and answer questions about survival needs.                 |
| <b>Summer 2</b> | Seasonal Changes (Summer, Revisit)                | Observe changes across the four seasons; describe weather associated with the seasons; notice and describe how day length varies.   | Complete full year's set of weather records; make comparisons across all four seasons; present findings in graphs/charts; use evidence to explain patterns.            |



## Y3/4 Year A

| Term     | Topic                                   | Knowledge (NC Statements)   | Working Scientifically  |
|----------|---|---|---|
| Autumn 1 | Sound                                   | Identify how sounds are made by vibrations; explore sound travel; find patterns in pitch and volume.  | Investigate sound with tuning forks/rubber bands; measure volume/distance effects; ask questions about materials that muffle sound. |
| Autumn 2 | Animals inc. Humans (Digestion & Teeth) | Describe digestive system; identify teeth types and functions; construct simple food chains.  | Create models of digestive system; observe tooth decay investigation; classify animals as producers, predators, prey.               |
| Spring 1 | States of Matter                        | Compare solids, liquids, gases; observe changes of state when heated/cooled; identify evaporation/condensation in water cycle.                  | Measure melting/evaporation rates; record results in tables; use data loggers; ask comparative questions.                           |
| Spring 2 | Plants (Functions & Transport)          | Identify functions of roots, stem, leaves, flowers; explore water transport; explore plant life cycle including pollination and seed dispersal. | Set up practicals on water transport; observe and record over time; dissect flowers; sequence life cycle.                           |
| Summer 1 | Light                                   | Recognise light is needed to see; notice reflection; recognise dangers of sunlight; investigate shadows.  | Make predictions about shadow length; collect and record data; use torches/mirrors to explore reflection; draw simple conclusions.  |
| Summer 2 | Seasonal Investigation (Plants/Light)   | Revisit plant growth/light topics to consolidate.   | Plan longer-term investigations; record results systematically; present data as line graphs.  |



**Year 3/4 Year B**

| <b>Term</b>     | <b>Topic</b>                                | <b>Knowledge (NC Statements)</b>   | <b>Working Scientifically</b>  |
|-----------------|---|--|--|
| <b>Autumn 1</b> | Rocks                                       | Compare and group rocks based on appearance and properties; describe how fossils are formed; recognise soils are made from rocks and organic matter. | Observe and classify rocks; use hand lenses/microscopes; record similarities/differences in tables; ask questions about fossil evidence. |
| <b>Autumn 2</b> | Animals inc. Humans (Nutrition & Skeletons) | Identify that animals need nutrition; identify skeletons and muscles for support, protection, movement.  | Research diets of animals; compare skeleton types; classify food types; use secondary sources.   |
| <b>Spring 1</b> | Forces & Magnets                            | Notice forces as pushes/pulls; compare friction; observe magnetic attraction/repulsion; group materials as magnetic/non-magnetic.                    | Test surfaces for friction; measure distance objects slide; explore magnets; predict and test attraction/repulsion.                      |
| <b>Spring 2</b> | Electricity (Simple Circuits)               | Identify appliances using electricity; construct simple circuits; recognise conductors/insulators.   | Build and test circuits; record diagrams with symbols; investigate which materials conduct.  |
| <b>Summer 1</b> | Living Things & Habitats (Classification)   | Recognise living things can be grouped; explore classification keys; recognise dangers from environmental change.                                    | Use keys to classify local plants/animals; construct classification keys; collect data from fieldwork.                                   |
| <b>Summer 2</b> | Seasonal/Extended Investigation             | Apply states of matter knowledge to water cycle and habitats; observe across seasons.  | Collect rainfall/temperature data; compare seasonal changes; present results as bar/line graphs.   |



## Year 5/6 Year A

| Term            | Topic   | Knowledge (NC Statements)   | Working Scientifically   |
|-----------------|---|---|--|
| <b>Autumn 1</b> | Seasonal/Extended Investigation                   | Apply knowledge across topics.<br>e.g. Biscuit Bonanza  | Carry out independent enquiries; present findings in multiple formats.                         |
| <b>Autumn 2</b> | Earth & Space                                     | Describe Sun, Earth, Moon movements; explain day/night; describe planets in solar system.                   | Model Earth–Moon–Sun; record shadow lengths; research planetary facts.                         |
| <b>Spring 1</b> | Light   | Recognise light travels in straight lines; explain seeing by reflection; explain shadows by straight light. | Investigate shadow size/shape; use torches/mirrors/periscopes; draw conclusions from patterns. |
| <b>Spring 2</b> | Properties & Changes of Materials (Reversible)    | Compare properties: hardness, solubility, conductivity, magnetism; understand reversible changes.           | Plan fair tests on solubility; record data; use sieving/filtering/evaporation.                 |
| <b>Summer 1</b> | Living Things & Habitats (Classification Systems) | Describe how living things are classified; give reasons for classifying plants, animals, microorganisms.    | Use and create classification keys; observe samples; research microorganisms.                  |
| <b>Summer 2</b> | Animals inc. Humans (Changes to Old Age)          | Describe changes as humans develop to old age.  | Create timelines; use secondary sources; ask questions about growth.                           |

## Year 5/6 Year B

| Term            | Topic  | Knowledge (NC Statements)  | Working Scientifically  |
|-----------------|--|--|---|
| <b>Autumn 1</b> | Forces   | Explain gravity, air/water resistance, friction; recognise levers, pulleys, gears.                                   | Test parachutes/paper spinners; collect and compare results; use Newton meters.               |
| <b>Autumn 2</b> | Electricity (Complex Circuits)                   | Associate brightness/volume with number of cells; use symbols to represent circuits.                                 | Build circuits with switches, bulbs, buzzers; record using circuit diagrams; plan fair tests. |
| <b>Spring 1</b> | Properties & Changes of Materials (Irreversible) | Explain irreversible changes (burning, rusting, chemical reactions).   | Carry out chemical reaction demos; observe and record evidence of change.                     |
| <b>Spring 2</b> | Evolution & Inheritance                          | Recognise offspring vary; identify adaptation; recognise fossils provide evidence.                                   | Compare fossils to modern species; investigate adaptations; ask questions about inheritance.  |
| <b>Summer 1</b> | Animals inc. Humans (Circulatory System)         | Identify circulatory system functions; recognise transport of nutrients, water, oxygen; recognise lifestyle impacts. | Measure pulse before/after exercise; record and present results; research lifestyle effects.  |
| <b>Summer 2</b> | Seasonal/Extended Investigation                  | Apply knowledge across topics.<br>e.g. water cycle project, electrical toy project                                   | Carry out independent enquiries; present findings in multiple formats.                        |

## Science Vocabulary

| Group     | Term / Theme                   | Key Vocabulary  |
|-----------|--------------------------------|---|
| Nursery   | All About Me                   | body, head, hands, feet, eyes, ears, mouth, nose, sense, touch, smell, taste, see, hear |
| Nursery   | Seasonal Changes (Autumn)      | leaf, tree, weather, wind, rain, cold, warm, day, night, season, autumn                 |
| Nursery   | Animals & Pets                 | animal, pet, wild, fur, feather, scales, feed, eat, drink, move, habitat                |
| Nursery   | Plants & Growth                | seed, plant, soil, water, sun, grow, root, leaf, stem, flower                           |
| Nursery   | Water, Sand, Materials         | float, sink, mix, hard, soft, wet, dry, heavy, light                                    |
| Nursery   | Seasonal Changes (Summer)      | sun, hot, warm, shade, insect, flower, garden   |
| Reception | All About Me & My Body         | skeleton, bones, muscles, pulse, exercise, hygiene                                      |
| Reception | Seasonal Changes (Autumn)      | leaf, bare, weather, frost, windy, cloudy   |
| Reception | Animals, Habitats & Diet       | herbivore, carnivore, omnivore, home, nest, pond, forest, life cycle                    |
| Reception | Plants & Growth                | germinate, sprout, bloom, grow, roots, stem, leaf, flower, seed dispersal               |
| Reception | Materials & Forces             | material, wood, metal, fabric, push, pull, hard, soft, bend, twist                      |
| Reception | Seasonal Changes & Mini-Beasts | insect, bug, antenna, legs, summer, pond, soil  |

**KS1 (Year 1–2)**

| <b>Year</b> | <b>Term / Topic</b>      | <b>Key Vocabulary</b>  |
|-------------|--------------------------|--|
| Y1          | Seasonal Changes         | season, autumn, winter, spring, summer, day, night, weather, temperature     |
| Y1          | Animals including Humans | human, animal, offspring, senses, eye, ear, nose, mouth, body parts          |
| Y1          | Everyday Materials       | wood, metal, plastic, glass, rock, water, hard, soft, waterproof, flexible   |
| Y1          | Plants                   | root, stem, leaf, flower, tree, petal, trunk, deciduous, evergreen           |
| Y1          | Living Things & Habitats | habitat, living, dead, never alive, microhabitat, food chain, predator, prey |
| Y2          | Animals including Humans | carnivore, herbivore, omnivore, adult, baby, diet, exercise, hygiene         |
| Y2          | Uses of Materials        | stretch, squash, bend, twist, shape, suitable, unsuitable                    |
| Y2          | Plants                   | seed, bulb, grow, water, light, temperature, healthy                         |
| Y2          | Living Things & Habitats | adaptation, environment, survival, pond, woodland, desert, ocean             |



**LKS2 (Year 3–4)**

| <b>Year</b> | <b>Term / Topic</b>      | <b>Key Vocabulary</b>   |
|-------------|--------------------------|---|
| Y3          | Rocks                    | rock, soil, fossil, sedimentary, igneous, metamorphic, grain, hard, soft  |
| Y3          | Animals inc. Humans      | nutrition, skeleton, muscles, bones, vertebrate, invertebrate, diet       |
| Y3          | Forces & Magnets         | push, pull, friction, magnet, attract, repel, force, surface              |
| Y3          | Plants                   | root, stem, leaf, flower, pollination, seed dispersal, water transport    |
| Y3          | Light                    | light, dark, shadow, reflect, sunlight, opaque, transparent, translucent  |
| Y4          | States of Matter         | solid, liquid, gas, melting, freezing, evaporation, condensation          |
| Y4          | Animals inc. Humans      | digestive system, teeth, herbivore, carnivore, omnivore, prey, predator   |
| Y4          | Sound                    | vibration, pitch, volume, wave, soundproof                                |
| Y4          | Electricity              | battery, bulb, wire, switch, circuit, conductor, insulator                |
| Y4          | Living Things & Habitats | classify, environment, vertebrate, invertebrate, microhabitat, food chain |



**UKS2 (Year 5–6)**

| <b>Year</b> | <b>Term / Topic</b>               | <b>Key Vocabulary</b>  |
|-------------|-----------------------------------|--|
| Y5          | Earth & Space                     | Sun, Earth, Moon, orbit, rotation, planet, solar system, day, night, shadow                  |
| Y5          | Forces                            | gravity, air resistance, water resistance, friction, lever, pulley, gear, force              |
| Y5          | Properties & Changes of Materials | solubility, conductivity, reversible, irreversible, hardness, magnetism                      |
| Y5          | Living Things & Habitats          | classify, kingdom, phylum, genus, species, adaptation, environment, evolution                |
| Y5          | Animals inc. Humans               | growth, life cycle, old age, puberty, development  |
| Y6          | Light                             | light, straight line, reflection, shadow, opaque, transparent, translucent                   |
| Y6          | Electricity                       | series circuit, parallel circuit, current, voltage, bulb, switch, cell, conductor, insulator |
| Y6          | Properties & Changes of Materials | chemical reaction, rusting, burning, irreversible, dissolve, mixture                         |
| Y6          | Evolution & Inheritance           | adaptation, offspring, inheritance, variation, fossils, evolution                            |
| Y6          | Animals inc. Humans               | circulatory system, heart, blood, pulse, nutrients, oxygen, lifestyle, diet, exercise        |

## Science Skills Progression Map: Working Scientifically

| Skill Area                           | EYFS (Nursery & Reception)                                     | KS1 (Y1–2)  | LKS2 (Y3–4)  | UKS2 (Y5–6)   |
|--------------------------------------|--|---|--|---|
| <b>Observing</b>                     | Explore with senses; notice patterns; simple drawings & photos | Observe closely; use simple equipment; describe what they see | Observe in more detail; take accurate measurements; sketch with labels | Make systematic observations; use precision instruments; annotate diagrams          |
| <b>Asking Questions</b>              | Ask “what” and “why” questions; wonder about the world         | Ask simple questions to find answers; predict outcomes        | Pose relevant questions; make predictions based on evidence            | Develop testable questions; justify predictions; refine hypotheses                  |
| <b>Comparing &amp; Classifying</b>   | Sort objects by obvious features (size, color, texture)        | Compare and group materials, animals, plants                  | Classify animals/plants in more detail; use criteria                   | Use classification keys; identify patterns and relationships                        |
| <b>Planning &amp; Testing</b>        | Simple “what happens if” explorations; try ideas               | Perform simple tests; observe outcomes; change one variable   | Plan fair tests; control variables; repeat experiments                 | Design detailed investigations; control variables rigorously; anticipate errors     |
| <b>Measuring &amp; Recording</b>     | Use non-standard units (hands, cubes)                          | Record using drawings, tally charts, pictograms               | Measure using rulers, thermometers, scales; tables and charts          | Record with precision; use line/bar graphs, tables, scientific diagrams             |
| <b>Interpreting &amp; Explaining</b> | Talk about what happened; simple reasoning                     | Begin to describe patterns; draw conclusions from results     | Identify patterns and relationships; begin to explain scientifically   | Analyse data; draw conclusions; explain using scientific language and evidence      |
| <b>Communicating Findings</b>        | Share observations verbally or in drawings                     | Present results orally or with simple diagrams                | Present results using tables, diagrams, simple graphs                  | Present results using scientific notation, charts, graphs, and written explanations |