

Progression Pathway Science Curriculum year 2

Science milestones								
Topic	1	2	3	4	5	6	7	8
Working Scientifically Skills	Selects objects by their function, property or part	Answers a question based on their observations	Discusses what they are going to do, including how and why in simple terms	Includes a range of scientific words related to topic	Takes simple measurements and records data using simple measurements	Reaches a simple conclusion	Suggests a variable that could be tested	Describes and evaluates their own and other people's scientific ideas related to topics
	Uses a single word, sign, or symbol to name an object	Records their activity and results, e.g. selects the correct picture in a sequence	Gives a simple explanation why something will and then has happened	Identifies some of the equipment they will need to complete task	Extracts basic information from appropriate secondary sources	Selects and uses equipment they will need to research or investigate,	Collates and organises scientific information	(including ideas that have changed over time) using evidence from a range of sources
	Shows some basic awareness of cause-and-effect	Uses simple measuring equipment with assistance, e.g. thermometer	Labels a simple diagram	Observes and makes simple comments about obvious changes over time	Explains their findings in relation to their experiment or research	Tests their scientific hypothesis	Draws simple conclusions based on their findings	Raises further questions that could be investigated, based on their data and observations using appropriate scientific language
	Helps to carry out simple test	Communicates simple related ideas and observations using simple phrases	Contributes to the planning and evaluation of simple comparative tests	Communicates about what they think may happen	Records their observations, e.g. drawings, photographs or notes	Uses different types of scientific enquiry to gather and record data, using simple equipment where appropriate to answer questions	Interprets and presents discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	Creates a simple classification key,
	Anticipates the end result of an activity, e.g. that some objects will float or sink	Indicates that changes have occurred due to their actions	Considers their own safety during experiments	Records ideas using drawing or information and communication technology	States a simple prediction	Asks their own questions about what they notice using appropriate scientific language	Classifies using a range of simple methods, e.g. Venn diagram, lists	
	Notices obvious changes, e.g. leaves changing colour	Sorts objects by a given criteria when contrasts are obvious	Identifies similarities and differences and can sort objects into groups.	Can fill in a chart showing results.	Carries out simple directed comparative tests with some support			
	Observes an experiment							
Core Vocab	Look, see, hear,	Sort, what, where, when, group, test	Diagram, why, same, different, safety	Why, how, results, chart, guess, changes, experiment,	Predict, record, observe, measure, compare, similarities and differences	Equipment, research, hypothesis, enquiry, investigate, graph	Classify, venn-diagram, present, data, variable, conclusion, collate	Hypothesis, evaluation, interpret, key, classification

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Plants	Points to or shows interest in plants - flowers, grass and trees	Notifies that plants change over time e.g. it is bigger.	Orders simple pictures of a plant growing (seed – root – shoot – leaves and flowers)	Describes seasonal changes in trees using words – colour, leaves, branches, change.	Records how plants change across the seasons.	Identify different plants in different environments.	Describes the parts of the plant.	Knows that plants use sunlight to make their own food (photosynthesis).
	Matches leaf, flower and stem.	Watches plants grow with adult support.			Explains what the main parts of a plant do -roots take in water, stem holds the plant up, leaves help the plant grow, flowers make seeds.	Knows the benefits of habitats for plants to survive.	Explains the functions of different plants with basic language.	Explains how seeds spread and why this helps plants grow in new places.
	May use gestures or single words – leaf, flower,	Waters plants with adult support.	Talks about what happens first and next with visual support	With support, can record seed growth using drawings, photos or simple charts. (e.g. Drawing the same plant weekly to show change)		Sorts/matches plants to their habitat conditions (e.g. a cactus to desert picture).	Names and labels different stages of a plant life cycle.	
	Looks at and touches different leaves/flowers	Looks at different plants, leaves, or flowers with interest.	Knows that some plants are food		Understands that seeds start to grow and observes plants growth over time.	Learn that plants make new plants.	Uses tools like a magnifying glass to observe plants independently.	Describes how light, water and temperature affect plant growth.
	Uses simple describing words like “big/small” or “same/different” when exploring two contrasting plants	Uses describing words such as big, small, long, round to describe plants and flowers.	Groups plants by simple features (flowers/no flowers, big/small)	Identifies and names the main parts of a plant consistently when looking at different types of plants - root, stem, leaves, flower, petals.	Observes and draws plants at different stages of growth.	Compare how plants make new plants.	Uses what they have seen to help them answer a scientific question.	Uses this knowledge to predict before a scientific enquiry.
	Recognises familiar food plants -apple, carrot.	Sorts or matches leaves/flowers that look the same or different	Compares two plants simply by describing size or colour	Lists what plants need to grow - water, light and warmth.		Knows that water moves through plants.	Predicts conditions needed for seed growth.	Describes plant parts and what they do.
	Identify the following fruit and veg: apple, orange, banana, carrot, peas, broccoli.	Uses basic language like “same” and “different”	Names basic needs like water, sunlight, and soil	Investigates what happens when plants to not get enough light, water or warmth.	Names what plants need to survive including: water, light, air, nutrients and space.	Joins in with a scientific enquiry with adult support.	Explains how seeds move to new places (seed dispersal).	Creates a simple classification key.
	Copies actions like watering plants after modelling	Identifies familiar fruits and vegetables	Understands plants will not grow well without these.	Identify similarities and differences of different plants like flowers, leaves, height, fruit or vegetables.	Compares how plants grow in different conditions.	Records findings using drawing, photos to support.	Classify/ groups plants by what they look like.	Explains how plants change to survive in different places.
		Joins in caring for plants (e.g. watering)	Uses a magnifying glass to observe plants.	Begins to describe plant growth using simple scientific vocabulary - “grow, taller, roots, stem”	Begins to know that plants make their own food using light.	Describes the basic needs of plants to survive.	Knows that insects help plants make seeds (pollination).	Knows why plants are important for people, animals and the planet.
		With support, suggests simple ideas like “give water” or “put in sun”	Describes what they can see - colour, shape and texture.	Begins to describe plant growth using simple scientific vocabulary - “grow, taller, roots, stem”	Can order the plant life cycle and explain each part in detail -		Knows that plants make new plants.	
		Can say what plants need to grow (e.g. water, sun) with support	Finds simple facts about plants from books, pictures or videos.	Knows soil provides nutrients for plants.				
				Can order the plant lifecycle.				
Suggested working scientifically focus:	Demonstrates curiosity in the outside world Looks at collection of similar objects and may give a property to classify them, e.g. different coins are all money, etc.	Communicates simple related ideas and observations using simple phrases, e.g. the seed didn't grow because it had no water	Finds information from a secondary source.	Observes and makes simple comments about obvious changes over time	Extracts basic information from appropriate secondary sources	Uses different types of scientific enquiry to gather and record data, using simple equipment where appropriate to answer questions: Groups and classifies	Observes closely using a magnifying glass or microscope to help give a detailed view or answer to a scientific question	Creates a simple classification key, e.g. using leaves from their environment
Core vocab	plant, flower, grass, tree, leaf, leaves, stem, touch, look, big, small, same, different, match, apple, orange, banana, carrot, peas, broccoli, fruit, vegetable, water, grow, green	grow, bigger, smaller, change, sunlight, sun, soil, leaf, flower, fruit, , same, different, big, small, long, round, roots, stem, care, healthy, dry, wet, tall, short, needs, sort	seed, root, shoot, stem, petals, food, colour, shape, texture, first, next, lifecycle,	season, spring, summer, autumn, winter, branches, colour, growth, , nutrients, light, warmth, healthy, taller, then, last, compare, chart, drawing, photo, observe, investigate	survive, make seeds, baby plant, plant food, air, space, help, change, stage, measure, record, draw, explain, compare, light, dark, warm, cold, healthy, dying,	habitat, desert, forest, pond, garden, environment, survive, adapt, cactus, rainforest, wet, dry, shade, sunlight, water movement, transport, spread, new living, conditions, test, record, draw, photo, results, need, support, benefit	evaporation, plant parts, function, job, stage, answer, prediction, condition, dispersal, spread, wind, animals, insects, pollination, bee, classify, group, sort, independent, science, results	photosynthesis, dispersal, temperature, job, key, observe, importance, planet

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Properties and changes of materials	Explores different materials using hands and senses – touching, holding, looking.	Explores different materials using sight and touch.	Explores different materials using hands and simple tools.	Names a range of everyday materials using sight and touch.	Names a range of everyday materials and describes their properties.	Explores a wide range of everyday materials and describes their properties in detail.	Compares materials using more than one property including strength, flexibility, transparency, absorbency	Compares materials using key properties including hard/soft, strong/weak, transparent/opaque, absorbent/waterproof.
	Shows interest in different textures - soft, hard, smooth, rough	Notifies that materials can look and feel different.	Describes simple material properties- hard, soft, rough, bendy.	Describes simple material properties- hard, soft, shiny, dull, rough, bendy, heavy, light, sticky, wet, dry.	Groups materials based on simple features - hard/soft, shiny/dull, rough/smooth.	Groups materials using multiple properties such as hard, waterproof, flexible, transparent.	Recognises that some materials can change into new materials.	Groups materials based on shaped properties.
	Notifies that materials feel different from each other.	Begins to describe simple properties - hard, soft, wet, dry	Notifies that some materials can be changed by bending or cutting.	Sorts objects by a single property - colour, texture or material type.	Identifies that some materials can be changed and some cannot.	Selects and uses appropriate methods to separate simple mixtures - filtering, sieving, evaporating.	Describes simple ways materials can be separated and recovered.	Identifies and describes reversible changes in materials.
	Matches objects that go together - cup and spoon, sock pairs, blocks.	Sorts objects by one simple property with support – colour or size.	Uses simple actions like bending, squeezing or pulling materials with support.	Begins to group objects made from the same material -wood, plastic, metal, glass.	Observes simple changes in materials during practical activities including melting, dissolving and mixing.	Explains why a chosen method is used to separate a mixture.	Selects and uses basic methods to separate mixtures - filtering, sieving, evaporating.	Identifies and describes irreversible changes in materials.
	Sorts simple materials by one obvious feature - soft/hard, big/small	Explores simple reactions in materials- dissolving, sticking, changing.	Observes what happens when materials are changed during activities – squashing dough, mixing sand and water, wetting and drying paper, stretching and bending materials.	Recognises that some changes cannot be undone once materials are changed.	Understands the difference between reversible and irreversible changes.	Tests materials to see if they dissolve in water and records results simply.	Tests and records material properties such as solubility, strength, or absorbency.	Explains simple processes of dissolving in water.
	Explores objects with a magnet with adult support.	Uses simple tools with support to help sort or separate items using a spoon and sieve.	Uses a magnet to explore objects and notices what sticks or does not stick.	Observes simple irreversible changes - burning, cooking, tearing, melting chocolate.	Tests whether materials dissolve in water with support.	Identifies and describes reversible changes - melting, dissolving	Suggests simple ways to make a substance dissolve faster -stirring, heating, crushing.	Uses basic methods to separate mixtures including filtering, sieving, evaporating and describes what happens.
	Notifies that some things stick to a magnet and some do not.	Begins to group and separate materials based on what they notice.	Sorts objects using simple features such as texture, size or whether they are magnetic.	Separates simple mixtures using basic methods - sieving, filtering, picking out.	Uses simple scientific words to describe what they see including change, dissolve, mix, and separate.	Identifies and describes irreversible changes -burning, cooking, rusting.	Explains findings using simple scientific vocabulary about materials and changes.	Uses key vocabulary such as <i>soluble</i> and <i>insoluble</i> to describe materials and test results.
	Watches simple changes in materials during play or experiments - mixing, pouring.		Begins to understand basic safety rules when using tools and materials such as scissors and magnets.	Describes what happens when materials are changed – different, changed or not the same.	Explains simple choices of materials for a purpose e.g. “because it is strong/waterproof /soft”	Uses scientific vocabulary to explain observations about materials and changes.		
	Notifies that some materials can mix to make something new.			Classifies everyday objects based on what they are made from.				
Working scientifically suggested focus:	Names a single property of an object e.g. hot or cold Selects objects by their function, property or part	Independently explores objects, finding and communicating simple differences they find	Makes simple comparisons, e.g. between materials	States what they found out through experiment	Records their observations, e.g. drawings, photographs or notes	Uses different types of scientific enquiry to gather and record data, using simple equipment where appropriate to answer questions: observes changes over time	Plans a practical enquiry to test their idea after discussion with a member of staff	Records observations in a variety of ways
Core vocab	touch, feel, look, see, big, small, soft, hard, rough, smooth, same, different, in, out, on, off, stick, not, water, mix, pour, change, new, play	colour, size, wet, dry, change, mix, stick, spoon, sieve, group, sort, look, see, sand, cup, bowl, pour, empty, full	Material, tools, hands, bend, squeeze, pull, cut, squash, stretch, dry, dough, paper, object, safe, danger, scissors, magnet, metal, plastic, wood, rough, smooth, explore, observe, group, same, different	hard, soft, shiny, dull, rough, bendy, heavy, light, sticky, wet, dry, colour, texture, group, burning, cooking, tearing, melting, chocolate, mix, separate, sieve, filter, pick, object, classify, I	property, shiny, dull, waterproof, absorbent, dissolve, separate, reversible, irreversible, heat, test, strong, purpose, use, explain, observe	flexible, transparent, opaque, , evaporate, burning, cooking, rust,	Flexibility, absorbency, recovered, solubility	Chemical change, evaporation.