

PROGRESSION OF SKILLS AND KNOWLEDGE IN SCIENCE



	RECEPTION	AREAS OF STUDY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
			Animals including humans Everyday materials Plants Seasonal changes	Animals including humans Living things Plants Materials	Animals including humans Animals Forces and magnets Light Plants Rocks	Animals including humans Electricity Sound States of matter	Forces Earth and space Materials Living things Animals including humans	Electricity Animals including humans Light Evolution and inheritance Living things
	Ask questions about the world around them. Predict what might happen	Asking questions Progression of Science skills	 Ask simple questions when prompted. Suggest ways of answering a question. 	 Ask simple questions. Recognise that questions can be answered in different ways. 	 Ask relevant questions when prompted. Set up simple and practical enquiries, comparative and fair tests. 	 Ask relevant questions. Set up different types of scientific enquiries to answer questions. Set up simple and practical enquiries, comparative and fair tests. 	 With prompting, plan different types of scientific enquiries to answer questions. With prompting, recognise and control variables where necessary. 	 Plan different types of scientific enquiries to answer questions. Recognise and control variables where necessary.
Science	Explore the natural world around them. Describe what they see, hear and feel whilst outside. Explore a range of materials, including natural materials	Measuring and recording Progression of Science skills	 Make relevant observations. Conduct simple tests, with support. With prompting, suggest how findings could be recorded. Recognise findings. Gather and record data. 	 Observe closely, using simple equipment. Perform simple tests. Record and communicate their findings in a range of ways and begin to use simple scientific language. Gather and record data to help answer questions 	 Make systematic observations, using simple equipment. Use standard units when taking measurements. Record findings in various ways. With prompting, use various ways of recording, grouping and displaying evidence 	 Make systematic and careful observations using a range of equipment, including thermometers and data loggers. Take accurate measurements using standard units, where appropriate. Record findings using simple scientific language, drawings and labelled diagrams. Record findings using keys, bar charts, and tables. Gather, record, classify and present data in a variety of ways to help to answer questions. 	 Select, with prompting, and use appropriate equipment to take readings. Take precise measurements using standard units. Take and process repeat readings. Record data and results. Record data using labelled diagrams, keys, tables and charts. Use line graphs to record data. 	 Take measurements using a range of scientific equipment. Take measurements with increasing accuracy and precision. Take repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar charts. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar charts. Record data and results of increasing complexity using line graphs.
	the effect of changing seasons on the natural world around them. Vocab: Microscope, magnifying glass, pipette, magnet, investigate, explore, observe	Concluding Progression of Science skills	Use observations to suggest answers to questions.	Identify and classify Use their observations and ideas to suggest answers to questions.	 With prompting, suggest conclusions from enquiries, suggest how findings could be reported, gather and record data about similarities, differences and changes. 	 Report on findings from enquiries, including oral and written explanations, of results and conclusions. Report on findings from enquiries using displays or presentations. Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support their findings. 	 Report and present findings from enquiries, including conclusions and, with prompting, suggest causal relationships. With support, present findings from enquiries orally and in writing With prompting, identify that not all results may be trustworthy. Suggest how evidence can support conclusions. 	 Report and present findings from enquiries, including conclusions and causal relationships Report and presents findings from enquiries in oral and written forms such as displays and other presentation Report and present findings from enquiries, including explanations of, and degree of, trust in results Identify scientific evidence that has been used to support or refute ideas or arguments

	Evaluating Progression of Science skills			 With prompting, suggest conclusions that can be drawn from data. With prompting, suggest possible improvements or further questions to investigate 	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Suggest further comparative or fair tests.	Use test results to make predictions to set up further comparative and fair tests.
RECEPTION	AREAS OF STUDY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Name and describe animals that live in different habitats. Describe different habitats Describe people who are familiar to them Learn about how to take care of themselves	Animals including humans Science knowledge	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Notice that animals, including humans, have offspring which grow into adults. • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. (Y2 - Living things and their habitats)*	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food – they get nutrition from what they eat. • Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Describe the simple functions of the basic parts of the digestive system in humans. • Identify the different types of teeth in humans and their simple functions. • Construct and interpret a variety of food chains, identifying producers, predators and prey.	Describe the changes as humans develop to old age. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats) • Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)*	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans. Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. (Y6 - Living things and their habitats) Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)*
Hibernating, nocturnal, calf, kid, foal, lamb, cocoon, chrysalis, habitat, desert, jungle, grassland, endangered, extinct	Animals including humans Vocabulary	Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves Names of animals experienced first-hand from each vertebrate group Parts of the body Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue	Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta)		Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	Puberty – the vocabulary to describe sexual characteristics	Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle

Explore the plants in the surrounding natural environment • Explore the animals in the surrounding natural environment • Explore plants and animals in a contrasting natural environment	Plants Science knowledge	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats)*	. Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • Investigate the way in which water is transported within plants. • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats) • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats) • Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)*	Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. (Y6 - Living things and their habitats) • Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)*
Shoot, root, stem, seed, bulb	Plants Vocabulary	Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud Names of trees in the local area Names of garden and wild flowering plants in the local area	As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy	Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)			
RECEPTION	AREAS OF STUDY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Explore a range of materials, including natural materials • Make objects from different materials, including natural materials • Observe, measure and record how materials change when heated and cooled • Compare how materials change over time and in different conditions	Everyday Materials Science knowledge	Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. • Describe the simple physical properties of a variety of everyday materials. • Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 - Rocks) • Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks) • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. (Y3 - Forces and magnets)*	States of Matter Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. Recognise some common conductors and insulators, and associate metals with being good conductors. (Y4 - Electricity)*	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. • Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. • Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	

Melting, freezing, floating, sinking, delicate, fragile	Everyday Materials Vocabulary	Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching		Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material	
RECEPTION	AREAS OF STUDY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Play and explore outside in all seasons and in different	Seasonal Changes Science	Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies.		Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light)*		Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and space)*	
weather Observe living things throughout the year	knowledge						

Explore the plants in the surrounding natural environment Explore the animals in the surrounding natural environment Explore plants and animals in a contrasting natural environment	Living things and their habitats Science knowledge	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants) • Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants) • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans) • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans) • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals, including humans) • Observe changes across the four seasons. (Y1 - Seasonal change)*	Explore and compare the differences between things that are living, dead, and things that have never been alive. • Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. • Identify and name a variety of plants and animals in their habitats, including microhabitats. • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	including pollination, seed	Recognise that living things can be grouped in a variety of ways. • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. • Recognise that environments can change and that this can sometimes pose dangers to living things.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Describe the life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. • Give reasons for classifying plants and animals based on specific characteristics. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (Y6 - Evolution and inheritance) • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Y6 - Evolution and inheritance)*
	Living things and their habitats Vocabulary		Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed Names of local habitats e.g. pond, woodland etc. Names of micro-habitats e.g. under logs, in bushes etc.		Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate	Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non- flowering
RECEPTION	AREAS OF STUDY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Explore the natural world around them. (Reception – Living things and their habitats) • Describe what they see, hear and feel whilst outside. (Reception – Living things and their habitats*	Rocks Science knowledge	Distinguish between an object and the material from which it is made. (Y1 - Everyday materials) • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials) • Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials) • Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials)*	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)*	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Describe in simple terms how fossils are formed when things that have lived are trapped within rock. • Recognise that soils are made from rocks and organic matter.			Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (Y6 - Evolution and inheritance)*

	Rocks Vocabulary			Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil			
Explore shadows Explore rainbows	Light Science knowledge	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans) Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials)		Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.			Recognise that light appears to travel in straight lines. • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
	Light Vocabulary			Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous			As for Year 3 - Light, plus straight lines, light rays
RECEPTION	AREAS OF STUDY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Listen to sounds outside and identify the source Make sounds	Sound Science knowledge				Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound		

	Sound Vocabulary				Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation		
Explore how to change how things work • Explore how the wind can move objects • Explore how objects move in water	Forces and Movement Science knowledge		Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials)*	Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.		Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	
	Forces and Movement Vocabulary			Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole		Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears	
RECEPTION	AREAS OF STUDY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Learn about the Earth, Sun, Moon, planets and stars Learn about space travel	Earth and Space Science knowledge	Observe changes across the four seasons. (Y1 – Seasonal changes) Observe and describe weather associated with the seasons and how day length varies. (Y1 – Seasonal changes)*				Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. • Describe the movement of the Moon relative to the Earth. • Describe the Sun, Earth and Moon as approximately spherical bodies. • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.	
Names of the planets	Earth and Space Vocabulary					Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets	

	Electricity Science knowledge				Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Recognise some common conductors and insulators, and associate metals with being good conductors.		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. • Use recognised symbols when representing a simple circuit in a diagram.
	Electricity Vocabulary				Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol		Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage
Recognise some environments that are different to the one in which they live. (Reception – Living things and their habitats)*	AREAS OF STUDY Evolution and Inheritance Science knowledge	YEAR 1	YEAR 2 Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. (Y2 - Living things and their habitats) Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)*	PEAR 3 Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks) • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)*	sometimes pose dangers to living things. (Y4 - Living	PEAR 5 Describe the life process of reproduction in some plants and animals. (Living things and their habitats - Y5)*	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Evolution and Inheritance Vocabulary	Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils
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^{*} National Curriculum statements in red are from other linked science topics. These are not specifically taught in the year groups shown but this knowledge will feed into later topics.