Science Knowledge Progression Map

National Curriculum statements in blue are from other linked topics.

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	-Use all their senses in hands-on exploration of natural materials. -Explore collections of materials with similar and/or different properties. -Plant seeds and care for growing plants. -Understand the key features of the life cycle of a plant and an animal. -Begin to understand the need to respect and care for the natural environment and all living things.	-Draw information from a simple map. (Reception – Living things and their habitats). -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) -Recognise some environments that are different to the one in which they live. (Reception – Living things and their habitats)	-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	-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)

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		-Understand the effect of changing seasons on the natural world around them. (Reception – Seasonal changes)			formation and seed dispersal.			
Living things and their habitats	-Use all their senses in hands-on exploration of natural materials. -Explore collections of materials with similar and/or different properties. -Begin to understand the need to respect and care for the natural environment and all living things.	-Draw information from a simple map. -Explore the natural world around them. -Describe what they see, hear and feel whilst outside. -Recognise some environments that are different to the one in which they live.	-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	-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	-Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)	-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. -Construct and interpret a variety of food chains, identifying	-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,

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			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)	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. - Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals including humans)		producers, predators and prey. (Y4 - Animals, including humans)		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)

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Animals including humans	-Use all their senses in hands-on exploration of natural materials. -Begin to make sense of their own life-story and family's history. -Understand the key features of the life cycle of a plant and an animal. -Begin to understand the need to respect and care for the natural environment and all living things.	-Talk about members of their immediate family and community. -Name and describe people who are familiar to them. -Recognise some environments that are different to the one in which they live.	-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	-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

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				things and their habitats)				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)
Evolution and inheritance	-Begin to understand the need to respect and care for the natural environment and all living things. (Nursery – Living things and their habitats)	Recognise some environments that are different to the one in which they live. (Reception – Living things and their habitats)	NA	-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	-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)	-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. (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

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				and their habitats) -Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans)				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.
Seasonal change	-Understand the key features of the life cycle of a plant and an animal. (Nursery – Plants & Animals, excluding humans)	-Explore the natural world around them. -Describe what they see, hear and feel whilst outside. -Understand the effect of changing seasons on the natural world around them.	-Observe changes across the four seasons. -Observe and describe weather associated with the seasons and how day length varies.	NA	-Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light)	NA	-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)	NA
Materials	-Use all their senses in hands-on exploration of natural materials. -Explore collections of materials with	-Explore the natural world around them. -Describe what they see, hear and feel whilst outside.	-Distinguish between an object and the material from which it is made.	-Identify and compare the suitability of a variety of everyday materials, including wood,	-Compare and group together different kinds of rocks on the basis of their appearance and simple physical	-Compare and group materials together, according to whether they are solids, liquids or gases.	• Compare and group together everyday materials on the basis of their properties, including their	NA

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	similar and/or different properties. -Talk about the differences between materials and changes they notice.		-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.	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.	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)	-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)	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,	

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							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.	
Rocks	-Use all their senses in hands-on exploration of natural materials. (Nursery – Living things and their habitats) -Explore collections of materials with similar and/or different properties.	-Explore the natural world around them. (Reception – Living things and their habitats) -Describe what they see, hear and feel whilst outside. (Reception –	-Distinguish between an object and the material from which it is made. (Y1 - Everyday materials) -Identify and name a variety of 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.	-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	NA	NA	-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 -

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	(Nursery – Living things and their habitats)	Living things and their habitats)	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)	(Y2 - Uses of everyday materials)	things that have lived are trapped within rock. -Recognise that soils are made from rocks and organic matter.			Evolution and inheritance)
Light	-Explore how things work. -Talk about the differences in materials and changes they notice.	-Describe what they see, hear and feel whilst outside.	-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)	NA	-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	NA	-Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and	-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

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			-Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials)		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.		thermal), and response to magnets. (Y5 - Properties and changes of materials)	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.
Forces	-Explore how things work. -Explore and talk about different forces they can feel. -Talk about the differences between materials and changes they notice.	-Explore the natural world around them. -Describe what they see, hear and feel whilst outside	NA	-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.	NA	-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.	NA

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					-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.		-Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	
Sound	-Explore how things work.	-Describe what they see, hear and feel whilst outside.	-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)	NA	NA	-Identify how sounds are made, associating some of them with something vibrating. -Recognise that vibrations from sounds travel through a medium to the ear.	NA	NA

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						-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 source increases.		
Electricity	-Explore how things work.	NA	NA	NA	NA	-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	NA	-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

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						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.		loudness of buzzers and the on/off position of switches. -Use recognised symbols when representing a simple circuit in a diagram
Earth and space	NA	-Explore the natural world around them. -Describe what they see, hear and feel whilst outside	-Observe changes across the four seasons. (Y1 – Seasonal changes) -Observe and describe weather associated with the seasons and how day length varies. (Y1 –	NA	NA	NA	-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	NA

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			Seasonal changes)				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.	