

Science Curriculum Progression Overview

Knowledge and Understanding by Topic

Note: red italic statements are linked from other topic areas.

Plants

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Know about similarities and differences in relation to places, objects, materials and living things.</p> <p>Talk about features of their environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p><i>Identify and name a variety of plants and animals in their habitats, including microhabitats. (YR2 – Living things and their habitats)</i></p>	<p>Identify and describe functions of parts of flowering plants.</p> <p>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary between plants.</p> <p>Investigate the way in which water is transported within plants.</p> <p>Explore the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p><i>Recognise that living things can be grouped in a variety of ways. (YR4 – Living things and their habitats)</i></p> <p><i>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (YR4 – Living things and their habitats)</i></p> <p><i>Recognise that environments can change and that this can sometimes pose dangers to living things. (YR4 – Living things and their habitats)</i></p>	<p><i>Describe the life process of reproduction in some plants and animals. (YR5 – Living things and their habitats)</i></p>	<p><i>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. (YR6 – Living things and their habitats)</i></p> <p><i>Give reasons for classifying plants and animals based on specific characteristics. (YR6 – Living things and their habitats)</i></p>

Animals

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Know about similarities and differences in relation to places, objects, materials and living things.</p> <p>Talk about features of their environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p>	<p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Notice that animals, including humans, have offspring which grow into adults.</p>	<p>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.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p><i>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (YR5 – Living things and their habitats)</i></p> <p><i>Describe the life process of reproduction in some plants and animals. (YR5 – Living things and their habitats)</i></p>	<p>Describe the ways that nutrients/water are transported within animals and humans.</p> <p><i>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. (YR5 – Living things and their habitats)</i></p> <p><i>Give reasons for classifying plants and animals based on specific characteristics. (YR5 – Living things and their habitats)</i></p>

Humans

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Know about similarities and differences in relation to places, objects, materials and living things.</p> <p>Talk about features of their environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p>	<p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>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.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and functions.</p>	<p>Describe the changes as humans develop to old age.</p>	<p>Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way bodies function.</p> <p>Describe the ways that nutrients/water are transported within humans.</p>

Living Things and Their Habitats

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Know about similarities and differences in relation to places, objects, materials and living things.</p> <p>Talk about features of their environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p>	<p><i>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (YR1 – Plants)</i></p> <p><i>Identify and describe the basic structure of a variety of common flowering plants, including trees. (YR1 – Plants)</i></p> <p><i>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (YR1 – Animals including humans)</i></p> <p><i>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (YR1 – Animals including humans)</i></p> <p><i>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (YR1 – Animals including humans)</i></p> <p><i>Observe changes across the four seasons. (YR1 – Seasonal changes)</i></p>	<p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>Identify that most living things live in habitats to which they are suited and describe how habitats provide for the basic needs of animals and plants, and how they depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats (including micro-habitats).</p> <p>Describe how animals obtain their food from plants and other animals using a simple food chain and identify and name different sources of food.</p> <p><i>Notice that animals, including humans, have offspring which grow into adults. (YR2 – Animals including humans)</i></p>	<p><i>Explore the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (YR3 – Plants)</i></p>	<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p> <p><i>Construct and interpret a variety of food chains, identifying producers, predators and prey. (YR4 – Animals including humans)</i></p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p>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.</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>

Materials

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Know about similarities and differences in relation to places, objects, materials and living things.</p> <p>Talk about features of their environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p>	<p>Everyday Materials</p> <p>Distinguish between an object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>Uses of Everyday Materials</p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Compare how things move on different surfaces.</p>	<p>Rocks (YR 3)</p> <p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p> <p><i>Recognise that living things have changes over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (YR6 – Evolution and inheritance)</i></p>	<p>States of Matter</p> <p>Compare and group materials together according to whether they are solids, liquids or gases. (<i>Changing materials</i>)</p> <p>Identify the part played by evaporation and condensation in the water cycle: associate the rate of evaporation with temperature. (<i>Changing materials</i>)</p>	<p>Properties and Changes of Materials</p> <p>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.</p> <p>Give reasons for the particular uses of everyday materials, including metals, wood and plastic.</p>	

Changing Materials

		<p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>		<p>Observe that some materials change state when heated or cooled, and measure or research the temperature at which this happens in degrees Celsius.</p>	<p>Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible</p>	
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Evolution and Inheritance

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Talk about features of their environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p>		<p><i>Identify that most living things live in habitats to which they are suited and describe how habitats provide for the basic needs of animals and plants, and how they depend on each other. (YR2 – Living things and their habitats)</i></p>	<p><i>Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (YR3 – Rocks)</i></p>	<p><i>Recognise that environments can change and that this can sometimes pose dangers to living things. (YR4 – Living things and their habitats)</i></p>		<p>Recognise that living things have changes over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but normally vary and are not identical to their parents.</p> <p>Identify how animals and plants are adapted to suit their environment in different ways that adaptation may lead to evolution.</p>

Seasonal Changes

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Know about similarities and differences in relation to places, objects, materials and living things.</p> <p>Talk about features of their environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p>	<p>Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>		<p><i>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (YR – Light)</i></p>		<p><i>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (YR5 – Earth and Space)</i></p>	

Light

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Know about similarities and differences in relation to places, objects, materials and living things.</p> <p>Talk about features of their environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p>	<p><i>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (YR1 – Animals including humans)</i></p>		<p>Recognise that we need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that sun rays can be dangerous and that there are ways to protect eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>Find patterns in the way that the size of shadows change.</p>			<p>Recognise that light appears to travel in straight lines.</p> <p>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.</p> <p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then eyes.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>

Forces

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Make observations of and explain why some things occur, and talk about changes.</p>		<p><i>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (YR2 – Uses of everyday materials)</i></p>	<p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>Group everyday materials on the basis of whether they are attracted to a magnet, and identify magnetic materials.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>		<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys, gears, allow a smaller force to have a greater effect.</p>	

Sound

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Look closely at similarities, difference, patterns and change e.g. exploring instruments.	<i>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (YR1 – Animals including humans)</i>			<p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of sounds and features of the objects that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as distance from source increases.</p>		

Electricity

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Know about similarities and differences in relation to places, objects, materials and living things.</p> <p>Talk about features of their environment and how environments might vary from one another.</p> <p>Make observations of animals and plants and explain why some things occur and talk about changes.</p>				<p>Identify common appliances that run on electricity.</p> <p>Make simple series circuit - cells, wires, bulbs, switches and buzzers.</p> <p>Identify if a lamp will light in a simple circuit, based on being part of a complete loop with a battery.</p> <p>Recognise that a switch opens/closes a circuit and associate this with whether or not a lamp lights in a series circuit.</p> <p>Recognise conductors & insulators.</p>		<p>Associate the brightness of a lamp or volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>Compare/give reasons for variations in how components function, including brightness of bulbs, loudness of buzzers and on/off position of switches.</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p>

Earth and Space

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Talk about features of their environment and how environments might vary from one another.	<p><i>Observe changes across the four seasons. (YR1 - Seasonal Changes)</i></p> <p><i>Observe and describe weather associated with the seasons and how day length varies. (YR1 – Seasonal changes)</i></p>				<p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>Describe the movement of the Moon relative to the Earth.</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	