

# Science Curriculum Pathway

Secondary School

**Living Things and their Habitats**  
Describe how living things are classified into 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.

**UKS2 Working Scientifically**  
Children will understand that scientific ideas change over time and will select the most appropriate ways to answer questions using different enquiries. This will include observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information.

**Evolution and Inheritance**  
How humans and animals have adapted over time. Know how fossils provided information about living things that inhabited the Earth. Understand that living things produce offspring but they are not identical to their parents.

**Animals including Humans**  
Understand that humans and other animals have skeletons and muscles for support, protecting and movement.

**LKS2 Working Scientifically**  
Children will ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information.

**Seasonal Changes (Throughout Year 1)**  
Observe changes across the four seasons. Observe and describe the weather associated with the seasons. Discuss how day length changes according to the seasons.

**Animals including Humans**  
Know different common animals including fish, amphibians, reptiles, birds and mammals, and learn their structures. Understand the difference between carnivores, herbivores and omnivores.

**The Seaside**  
Explore objects that float and sink. Explore magnets and magnetism.

**The Farm**  
Understand the different seasons and what they look like on a farm. Exploring animals on a farm and life cycles.

**Beware the Bear!**  
Recognising differences and making comparisons. Understanding weather changes.

**Me and My Community**  
Use senses to explore the school. Learn different body parts.

**Year 1**

**Year 2**

**Year 3**

**Year 4**

**Year 5**

**Year 6**

**Year R**

**Evolution and Inheritance**  
Understand that living things produce offspring but they are not identical to their parents. Understand how humans and animals have adapted over time. Understand how fossils provided information about living things that inhabited the Earth.

**Electricity**  
Explore the brightness of a lamp or the volume of a buzzer with the number and voltage of cells; understand how components function; use symbols when representing a simple circuit in a diagram.

**Animals, including Humans**  
Identify the main parts of the human circulatory system and describe the function of the heart, blood vessels and blood.

**Earth and Space**  
Describe the movement of the Earth and other planets; describe the movement of the Moon; understand the Sun, Earth and Moon as approximately spherical bodies; understand day and night in relation to the Earth's and the Sun's positioning in the sky.

**Forces**  
Understand gravity and the relationship between Earth and a falling object; explore air resistance, water resistance and friction.

**Light**  
Understand that light travels in straight lines; know objects are seen because they give out or reflect light into the eye; understand we see things because light travels from light sources into our eyes or to objects and then to our eyes; use this knowledge to understand and explore shadows.

**Living Things and their Habitats**  
Understand reproduction in plants and animals; describe the differences in life cycles of a mammal, an amphibian, an insect and a bird.

**Animals including Humans**  
Describe the changes as humans develop to old age.

**Properties and Changes of Material**  
Compare and group materials on the basis of their properties; explore solvents, solutions and solids; explore filtering, sieving and evaporation; understand reversible and irreversible changes. Recap states of matter and water cycle.

**Electricity**  
Understand what appliances use electricity; make simple electrical circuits; understand the components of a circuit and their purposes; identify conductors and insulators, and research good conductors. Apply knowledge of electricity to make torches.

**Living Things and Their Habitats -**  
Group living things in a variety of ways. Understand how environments change

**Animals, including Humans**  
Research the digestive system; identify different types of teeth and their simple functions; interpret food chains and food webs.

**States of Matter**  
Compare and group materials into solids, liquids and gases; observe the changing of state when they are heated or cooled, and measure the temperature at which this happens (°C); understand the different parts of the water cycle.

**Sound**  
Understand how sounds are made, associating them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Investigate pitch and volume of a sound, and understand that sounds get fainter as the distance from the sound source increases.

**Light and Shadows**  
Recognise light is needed to see things, dark is the absence of light; light is reflected from surfaces; light from the sun can be dangerous and protection is needed; shadows are formed when the light from a light source is blocked by an opaque object; and find patterns in the way sizes of shadows change.

**Rocks and Soils**  
Group rocks based on their appearance and physical properties. Understand how fossils are formed. Recognise what soil is made from.

**Forces and Magnets**  
Compare how things move on surfaces; understand contact and non-contact forces; and explore magnets and magnetism.

**Animals, including Humans**  
Know 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

**Plants**  
Describe different functions of parts of a flowering plants; understand what they need for life and growth; understand how water is transported within plants; explore the life cycle of flowering plants.

**Use of Everyday Materials**  
Identify and compare the suitability of a variety of different materials. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

**Living Things and their Habitats**  
Know the differences between things that are living, dead and things that have never been alive. Understand that living things live in habitats that are suited to them. Understand how different habitats provide for the basic needs of living things. Identify and name a variety of plants and animals in their habitats.

**Animals, including Humans**  
Understand that animals have offspring which grow into adults. Describe the basic needs of animals for survival (food, water and air).

**Plants**  
Identify the features of common flowering plants, including trees. Name a variety of common wild and garden plants, including deciduous and evergreen trees..

**KS1 Working Scientifically**  
Children will be curious and ask questions. They will answer these questions by observing changes over time, notice patterns, group and classify things, carry out simple comparative tests and find information through secondary sources like books, photographs and videos.

**Everyday Materials (With DT)**  
Know the difference between an object and its material. Name different materials that are used everyday and their properties. Compare and group materials based on their properties.

**Animals, including Humans**  
Identify, name, draw and label different parts of the human body and know which part is associated with each sense.

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**Year R Objectives:**

- Explore the natural world around them, making observations and drawing pictures of animals and plants.
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

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**Electricity**  
Understand what appliances use electricity; make simple electrical circuits; understand the components of a circuit and their purposes; identify conductors and insulators, and research good conductors. Apply knowledge of electricity to make torches.

**Living Things and Their Habitats -**  
Group living things in a variety of ways. Understand how environments change

**Animals, including Humans**  
Research the digestive system; identify different types of teeth and their simple functions; interpret food chains and food webs.

**States of Matter**  
Compare and group materials into solids, liquids and gases; observe the changing of state when they are heated or cooled, and measure the temperature at which this happens (°C); understand the different parts of the water cycle.

**Sound**  
Understand how sounds are made, associating them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Investigate pitch and volume of a sound, and understand that sounds get fainter as the distance from the sound source increases.

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**Rocks and Soils**  
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**Forces and Magnets**  
Compare how things move on surfaces; understand contact and non-contact forces; and explore magnets and magnetism.

**Animals, including Humans**  
Know 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

**Plants**  
Describe different functions of parts of a flowering plants; understand what they need for life and growth; understand how water is transported within plants; explore the life cycle of flowering plants.

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Identify and compare the suitability of a variety of different materials. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

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**Animals, including Humans**  
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Compare and group materials into solids, liquids and gases; observe the changing of state when they are heated or cooled, and measure the temperature at which this happens (°C); understand the different parts of the water cycle.

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**Year R**

**Evolution and Inheritance**  
How humans



