

#### **Science**

Curriculum Map 2021-2022

#### **EYFS**

#### Understanding the World - Birth to 5 matters

#### Range 1

Looks around with interest when in a room, garden, balcony or park, visually scanning the environment for novel, interesting objects and events.

#### Range 2

Closely observes what animals, people and vehicles do.

Watches toys being hidden and tries to find it, watches intently where a spider has scuttled away under leaves.

Looks for dropped objects.

Becomes absorbed in combining objects e.g. banging two objects or placing objects into containers.

Knows things are used in different ways e.g. a ball for rolling or throwing, a toy car for pushing.

#### Range 3

Is curious and interested to explore new and familiar experiences in nature: grass, mud, puddles, plants, animal life.

Explores objects by linking together different approaches: shaking, hitting, looking, feeling, tasting, mouthing, pulling, turning and poking. Remembers where objects belong.

Matches parts of objects that fit together e.g. puts lid on teapot.

#### Range 4

Notices detailed features of objects in their environment.

Can talk about some of the things they have observed such as plants, animals, natural and found objects.

Enjoys playing with small world reconstructions, building on first-hand experiences, e.g. visiting farms, garages, train tracks or walking by a river or lake.

#### Range 5

Shows interest in different occupations and ways of life indoors and outdoors.

Comments and asks questions about aspects of their familiar world, such as the place where they live or the natural world.

Talks about why things happen and how things work.

Developing an understanding of growth, decay and changes over time.

Shows care and concern for living things and the environment.

Begin to understand the effect their behaviour can have on the environment.

#### Range 6



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	Looks closely at similarities and differences, patterns and change in nature.  Knows about similarities and differences in relation to places, objects, materials and living things.  Talks about the features of their own immediate environment and how environments might vary from one another.  Makes observations of animals and plants and explains why some things occur and talks about the changes.	
	AUTUMN 1 (8 WEEKS)	AUTUMN 2 (7 WEEKS)
YEAR 1	<ul> <li>Introduce the names and images of wild and garden plants.</li> <li>Introduce the names and images of evergreen and deciduous trees.</li> <li>Introduce the names and images of birds, fish, amphibians, reptiles, mammals and invertebrates.</li> <li>Introduce parts of the human body and associate parts of the body with the five senses.</li> <li>Observe a variety of sources of sound, noticing we hear with our ears.</li> <li>Introduce a range of everyday materials, including wood, plastic, glass, metal, water and rock.</li> <li>Distinguish between an object and the material from which it is made.</li> <li>Identify and compare the uses of a variety of materials.</li> <li>To research the contribution that people in STEM careers have made to society.</li> </ul>	<ul> <li>Identify common appliances that run on electricity.</li> <li>Observe and name a variety of sources of light.</li> <li>Identify and compare the uses of a variety of materials.</li> <li>Construct a simple series circuit.</li> <li>Observe and name a variety of sources of sound, noticing we hear with our ears.</li> <li>Introduce the structure of flowering plants.</li> <li>To research the contribution that people in STEM careers have made to society.</li> </ul>
YEAR 2	<ul> <li>Recall the names and images of wild and garden plants.</li> <li>Recall the names and images of evergreen and deciduous trees.</li> <li>Recall the names and images of birds, fish, amphibians, reptiles, mammals and invertebrates.</li> <li>Recall parts of the human body and associate parts of the body with the five senses.</li> <li>To research the contribution that people in STEM careers have made to society.</li> </ul>	<ul> <li>Recall a range of everyday materials, including wood, plastic, glass, metal, water and rock.</li> <li>Recall observing and naming a variety of sources of sound, noticing we hear with our ears.</li> <li>Recall observing and naming a variety of sources of light.</li> <li>Recall identifying common appliances that run on electricity.</li> <li>Recall constructing a simple series circuit.</li> <li>Recall the structure of flowering plants.</li> </ul>

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YEAR 3	<ul> <li>Name the functions of different parts of flowering plants.</li> <li>Investigate the way in which water is transported within plants.</li> <li>Identify that humans and some animals have skeletons and muscles for support, protection and movement.</li> <li>Compare and group materials together, according to whether they are solids, liquids and gases.</li> <li>Find patterns in the way that the size of shadows change.</li> </ul>	<ul> <li>Compare and group together different kinds of rocks based on their physical properties.</li> <li>Recognise that light is required in order to see things and that darkness is the absence of light.</li> <li>Identify how sounds are made, associating some of them with something vibrating.</li> <li>Identify common appliances that run on electricity.</li> <li>Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> <li>Construct a simple series electrical circuit, identifying and naming basic parts.</li> <li>To research the contribution that people in STEM careers have made to society.</li> </ul>
YEAR 4	<ul> <li>Recall naming the functions of different parts of flowering plants – roots, stem, leaves and flowers.</li> <li>Recall investigating the way in which water is transported within plants.</li> <li>Recall identifying that humans and some animals have skeletons and muscles for support, protection and movement.</li> <li>Compare and group materials together, according to whether they are solids, liquids and gases.</li> <li>To research the contribution that people in STEM careers have made to society.</li> </ul>	<ul> <li>Recall comparing and grouping together different kinds of rocks based on their physical properties.</li> <li>Recall identifying how sounds are made, associating some of them with something vibrating.</li> <li>Recall recognising that light is required in order to see things and that darkness is the absence of light.</li> <li>Recall identifying common appliances that run on electricity.</li> <li>Recall constructing a simple series electrical circuit, identifying and naming basic parts.</li> <li>Recall exploring the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> <li>Use a range of real flowering plants, locate and name the parts of the flower.</li> <li>Recall describing the movement of the Earth relative to the Sun in the solar system.</li> </ul>



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YEAR 5	Relate knowledge of plants to studies of all living things.	
	Describe the ways in which nutrients and water are	
	transported within plants, animals and humans.	

- Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.
- Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.
- To research the contribution that people in STEM careers have made to society.

- Find patterns between the pitch of a sound and features of the object that produced it.
- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
- 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.
- Understand 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 eyes.
- Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.
- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- Compare and group together everyday materials based on evidence from comparative and fair tests, including hardness, conductivity (electrical and thermal) and response to magnets.



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YEAR 6	<ul> <li>Recall relating knowledge of plants to studies of all living things.</li> <li>Recall describing the ways in which nutrients and water are transported within plants, animals and humans.</li> </ul>	<ul> <li>Recall recognising that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>Recall finding patterns between the pitch of a sound and features of</li> </ul>
	<ul> <li>Recall identifying and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>Recall using knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</li> <li>To research the contribution that people in STEM careers</li> </ul>	<ul> <li>the object that produced it.</li> <li>Recall understanding that light appears to travel in straight lines.</li> <li>Recall using the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes.</li> <li>Recall associating the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>Recall comparing and giving reasons for variations in how</li> </ul>
	have made to society.	components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.  • Recall describing the differences in the life cycles of a mammal, an amphibian, an insect and a bird.

• Recall describing the movement of the Earth, and other planets,

• Recall comparing and grouping together everyday materials based on evidence from comparative and fair tests, including hardness, conductivity (electrical and thermal) and response to magnets.

relative to the Sun in the solar system.

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	SPRING 1 (6 WEEKS)	SPRING 2 (6 WEEKS)
YEAR 1	<ul> <li>To know the groups carnivore, herbivore and omnivore.</li> <li>Describe and compare the structure of birds, fish, amphibians, reptiles, mammals and invertebrates, including pets.</li> <li>Introduce the structure of trees.</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> <li>Describe the offspring and growth of animals and humans into adulthood.</li> <li>Identify how humans resemble their parent in many features.</li> <li>To research the contribution that people in STEM careers have made to society.</li> </ul>	<ul> <li>Investigate and compare the differences between things that are living, that are dead and have never been alive.</li> <li>Investigate and describe the basic needs of animals including humans, for survival (water, food and air).</li> <li>Explain that we see sources of light because the light travels from the source to our eyes.</li> <li>Discriminate between different and similar sounds.</li> <li>Identify that most living things (plants / animals) live in habitats.</li> <li>Explore the concept of microhabitats.</li> </ul>
YEAR 2	<ul> <li>Recall the names and the structure of trees.</li> <li>Recall exploring how different things move [and with magnets].</li> <li>Recall describing the simple properties of a variety of everyday materials.</li> <li>Recall the groups – carnivore, herbivore and omnivore.</li> <li>Recall describing and comparing the structure of birds, fish, amphibians, reptiles, mammals and invertebrates, including pets.</li> <li>Recall the basics of movement and forces.</li> </ul>	<ul> <li>Recall comparing and grouping together a variety of everyday materials on the basis of their simple physical properties.</li> <li>Recall investigating and comparing the differences between things that are living, that are dead and have never been alive.</li> <li>Recall investigating and describing the basic needs of animals including humans, for survival (water, food and air).</li> <li>Recall experimenting with simple series circuits.</li> <li>Recall observing and naming a variety of sources of sound, noticing we hear with our ears.</li> <li>Explain that we see sources of light because the light travels from the source to our eyes.</li> </ul>

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YEAR 3	<ul> <li>Recognise that soils are made from rocks and organic matter.</li> <li>Describe the movement of the Earth relative to the Sun in the solar system.</li> <li>Compare how things move on different surfaces.</li> <li>Observe that some materials change state when they are heated or cooled.</li> <li>Describe the movement of the Moon relative to the Earth.</li> <li>Recognise that living things can be grouped in a variety of ways.</li> </ul>	<ul> <li>Identify how plants and animals, including humans, resemble their parents in many features.</li> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>Recognise that environments can change and that this can sometimes pose dangers to specific habitats.</li> <li>Construct and interpret a variety of food chains.</li> <li>Identify whether or not a lamp will light in a simple series circuit.</li> <li>Recognise that vibrations from sounds travel through a medium to the ear.</li> </ul>
YEAR 4	<ul> <li>Recall recognising that soils are made from rocks and organic matter.</li> <li>Recall observing that some materials change state when they are heated or cooled.</li> <li>Recall comparing how things move on different surfaces.</li> <li>Recall recognising that living things can be grouped in a variety of ways.</li> <li>Recall describing the movement of the Moon relative to the Earth.</li> <li>Recall identifying how plants and animals, including humans, resemble their parents in many features.</li> </ul>	<ul> <li>Recall noticing that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>Recall recognising that environments can change and that this can sometimes pose dangers to specific habitats.</li> <li>Recall constructing and interpreting a variety of food chains.</li> <li>Recall recognising that vibrations from sounds travel through a medium to the ear.</li> <li>Recall identifying whether or not a lamp will light in a simple series circuit.</li> <li>Recall identifying the part played by evaporation and condensation in the water cycle.</li> </ul>



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- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and falling objects.
- Demonstrate that dissolving, mixing and changes of state are reversible changes.
- Identify the effect of drag forces, such as air resistance, and water resistance that act between moving surfaces.
- Describe, in terms of drag forces, why moving objects that are not driven tend to slow down.
- Describe how living things are classified into broad groups according to common observable characteristics.
- 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, oxidisation and the action of acid on bicarbonate of soda.
- Recognise that living things reproduce offspring of the same kind, but normally offspring vary and are not identical to their parents.

- Describe magnets as having two poles.
- Predict whether two magnets will attract or repel each other,
   depending on which poles are facing, using a variety of magnets.
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
- Find patterns between the volume of a sound and the strength of the vibrations that produced it.
- Use recognised symbols when representing a simple circuit in a diagram.
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
- Identify the effect of drag forces.



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- ife process of reproduction in some plants and animals.
- Recall demonstrating that dissolving, mixing and changes of state are reversible changes.
- Recall explaining that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and falling objects.
- Recall describing how living things are classified into broad groups according to common observable characteristics.
- Recall identifying the effect of drag forces, such as air resistance, and water resistance that act between moving surfaces.
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- Recall recognising that living things reproduce offspring of the same kind, but normally offspring vary and are not identical to their parents.

- Recall explaining 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, oxidisation and the action of acid on bicarbonate of soda.
- Recall describing magnets as having two poles.
- Recall identifying how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
- Recall finding patterns between the volume of a sound and the strength of the vibrations that produced it.
- Recall using recognised symbols when representing a simple circuit in a diagram.



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	SUMMER 1 (6 WEEKS)	SUMMER 2 (7 WEEKS)
YEAR 1	<ul> <li>Experiment with simple series circuits.</li> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> <li>Begin to explore the basics of movement and forces.</li> <li>Explore the suitability of a variety of everyday materials.</li> <li>Explore how different things move with magnets.</li> </ul>	<ul> <li>Describe how animals obtain their food from plants and other animals through using the idea of a food chain.</li> <li>Recall the names and images of birds, fish, amphibians, reptiles, mammals and invertebrates.</li> <li>Recall how animals obtain their food from plants and other animals through using the idea of a food chain.</li> <li>Recall that the offspring and growth of animals and humans into adulthood.</li> <li>Identify how humans resemble their parent in many features.</li> <li>Observe the apparent movement of the Sun during the day.</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> <li>To research the contribution that people in STEM careers have made to society.</li> </ul>
YEAR 2	<ul> <li>Recall investigating and describing the basic needs of animals including humans, for survival (water, food and air).</li> <li>Recall identifying that most living things (plants / animals) live in habitats.</li> <li>Recall the concept of microhabitats.</li> <li>Recall how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> <li>Recall observing and naming a variety of sources of sound, noticing we hear with our ears.</li> </ul>	<ul> <li>Recall identifying that most living things (plants / animals) live in habitats.</li> <li>Recall describing how animals obtain their food from plants and other animals through using the idea of a food chain.</li> <li>Recall the basics of movement and forces.</li> </ul>

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YEAR 3	<ul> <li>Identify the part played by evaporation and condensation in the water cycle.</li> <li>Relate the simple physical properties of some rocks to their formation (igneous or sedimentary).</li> <li>Recall observing how magnets attract or repel each other and attract some materials and not others.</li> <li>Recognise that living things have changed over time and fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>Recognise some common conductors and insulators and associate metals with being good conductors.</li> <li>Recall noticing that light is reflected from surfaces.</li> </ul>	<ul> <li>Describe the simple functions of the basic parts of the digestive system in humans.</li> <li>Describe magnets as having two poles.</li> <li>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet or not.</li> <li>Identify how humans and plants are suited to and adapt to their environment in different ways.</li> <li>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> <li>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</li> <li>Identify the different types of teeth in humans and their simple functions.</li> </ul>
YEAR 4	<ul> <li>Recall observing how magnets attract or repel each other and attract some materials and not others.</li> <li>Recall relating the simple physical properties of some rocks to their formation (igneous or sedimentary).</li> <li>Recall recognising some common conductors and insulators and associate metals with being good conductors.</li> <li>Recall recognising that living things have changed over time and fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>Recall describing in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock.</li> <li>Recall noticing that light is reflected from surfaces.</li> <li>Recall describing magnets as having two poles.</li> </ul>	<ul> <li>Recall describing the simple functions of the basic parts of the digestive system in humans.</li> <li>Recall whether two magnets will attract or repel each other, depending on which poles are facing.</li> <li>Recall identifying how humans and plants are suited to and adapt to their environment in different ways.</li> <li>Recall recognising that shadows are formed when the light from a light source is blocked by a solid object.</li> <li>Recall finding patterns in the way that the size of shadows change.</li> <li>Recall identify the different types of teeth in humans and their simple functions.</li> </ul>

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YEAR 5	<ul> <li>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>Understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</li> <li>Describe the movement of the moon relative to the Earth.</li> <li>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.</li> <li>Recognise that sounds get fainter as the distance from the sound increases.</li> <li>To research the contribution that people in STEM careers have made to society.</li> </ul>	<ul> <li>Describe the changes as humans develop to old age.</li> <li>Relate knowledge of plants to studies of evolution and inheritance.</li> <li>Describe the Sun, Earth and Moon as approximately spherical bodies.</li> <li>Give reasons for classifying plants and animals based on specific characteristics.</li> <li>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.</li> </ul>
YEAR 6	<ul> <li>Recall understanding how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</li> <li>Recall giving reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.</li> <li>Describe the movement of the moon relative to the Earth.</li> <li>Recall describing the changes as humans develop to old age.</li> <li>To research the contribution that people in STEM careers have made to society.</li> </ul>	<ul> <li>Recall recognising that sounds get fainter as the distance from the sound increases.</li> <li>Recall describing the Sun, Earth and Moon as approximately spherical bodies.</li> <li>Recall relating knowledge of plants to studies of evolution and inheritance.</li> <li>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.</li> <li>Recall giving reasons for classifying plants and animals based on specific characteristics.</li> </ul>