Science

EYFS	**The Natural World ELG –** Explore the natural world around them, making observations and drawing pictures of animals and plants. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. **Plants Living things and their habitats Animals, including humans Materials**

	The Human body	Everyday materials	Seasonal changes	Animals	Plants	Making connections (Investigating science through stories)
Year 1	Children will identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Children will work scientifically, using their senses to make observations, spot patterns and use data to answer questions.	Children will distinguish between an object and the material from which it is made. Children will identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Children will describe the simple physical properties of a variety of everyday materials. Children will compare and group together a variety of everyday materials on the basis of their simple physical properties. Children will work scientifically by planning tests, making	Children will observe changes across the four seasons. Children will observe and describe weather associated with the seasons and how day length varies. Children will plan and carry out their own weather reports.	Children will identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Children will identify and name a variety of common animals that are carnivores, herbivores and omnivores. Children will describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Children will consider the most effective way to	Children will identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Children will identify and describe the basic structure of a variety of common flowering plants, including trees. Children use investigative skills to record the growth of a plant over time.	Children will identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Children will identify and describe the basic structure of a variety of common flowering plants, including trees. Children will identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Children will identify and name a variety of common animals that are carnivores, herbivores and omnivores. Children will describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Children will distinguish between an object and the material from which it is made.

		observations and recording data. Children will use results to answer questions and sort and group materials based on their properties.		collect data and record their findings in a block chart.		Children will identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Children will describe the simple physical properties of a variety of everyday materials. Children will gather and record data to answer questions.
Year 2	**Habitats**	**Life cycles and health**	**Uses of everyday materials**	**Microhabitats**	**Plant growth**	**Making connections** **(Plant- based materials)**
	Children will explore and compare the differences between things that are living, dead, and things that have never been alive. Children will 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. Children will identify and name a variety of plants	Children will notice that animals, including humans, have offspring which grow into adults. Children will find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Children will describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Children will collect data that allows them to observe changes, while also developing their ability to take measurements and record data.	Children will identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Children will find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Children will gather and record data in tables and block graphs and use their results to answer questions.	Children will 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. Children will identify and name a variety of plants and animals in their habitats, including microhabitats. Children will ask scientific questions and follow a method to investigate.	Children will observe and describe how seeds and bulbs grow into mature plants. Children will find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Children will find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Children will identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Children will use their observational skills and conduct simple tests

	and animals in their habitats, including microhabitats. Children will 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.					
Year 3	**Movement and nutrition**	**Forces and magnets**	**Rocks and soil**	**Light and shadows**	**Plant reproduction**	**Making connections** **(Does hand span affect grip strength?)**
	Children will 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. Children will identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Children will compare how things move on different surfaces. Children will notice that some forces need contact between two objects, but magnetic forces can act at a distance. Children will observe how magnets attract or repel each other and attract some materials and not others. Children will 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.	Children will compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Children will describe in simple terms how fossils are formed when things that have lived are trapped within rock. Children will recognise that soils are made from rocks and organic matter.	Children will recognise that they need light in order to see things and that dark is the absence of light. Children will notice that light is reflected from surfaces. Children will recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Children will recognise that shadows are formed when the light from a light source is blocked by an opaque object.	Children will identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Children will 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. Children will investigate the way in which water is transported within plants. Children will explore the part that flowers	Children will identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Children will 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. Children will identify that humans and some other animals have skeletons and muscles for support, protection and movement. Children will compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Children will analyse data and draw conclusions

		Children will describe magnets as having two poles. Children will predict whether two magnets will attract or repel each other, depending on which poles are facing. Children will write scientific methods and record data as they investigate contact and non-contact forces.		Children will find patterns in the way that the size of shadows change.	play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	
Year 4	**Digestion and food**	**Electricity and circuits**	**States of matter**	**Sound and vibrations**	**Classification and changing habitats**	**Making connections** **(How does the flow of liquids compare?)**
	Children will recognise that living things can be grouped in a variety of ways. Children will describe the simple functions of the basic parts of the digestive system in humans. Children will identify the different types of teeth in humans and their simple functions. Children will construct and interpret a variety	Children will identify common appliances that run on electricity. Children will construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Children will 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. Children will recognise that a switch opens and closes a circuit and	Children will compare and group materials together, according to whether they are solids, liquids or gases. Children will 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). Children will identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Children will identify how sounds are made, associating some of them with something vibrating. Children will recognise that vibrations from sounds travel through a medium to the ear. Children will find patterns between the pitch of a sound and features of the object that produced it. Children will find patterns between the volume of a	Children will recognise that living things can be grouped in a variety of ways. Children will explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Children will recognise that environments can change and that this can sometimes pose dangers to living things. Children will construct and interpret a variety of food chains,	Children will describe the simple functions of the basic parts of the digestive system in humans. Children will compare and group materials together, according to whether they are solids, liquids or gases. Children will recognise that vibrations from sounds travel through a medium to the ear Children will plan and execute an enquiry, considering different ways of representing data to support a conclusion.

	of food chains, identifying producers, predators and prey	associate this with whether or not a lamp lights in a simple series circuit. Children recognise some common conductors and insulators, and associate metals with being good conductors.		sound and the strength of the vibrations that produced it. Children will recognise that sounds get fainter as the distance from the sound source increases.	identifying producers, predators and prey.		
Year 5	**Mixtures and separation**	**Properties and changes**	**Life cycles and reproduction**	**Earth and space**	**Imbalanced forces**	**Human timeline**	**Making connections (Does the size of an asteroid affect the size of its impact crater?)**
	Children will know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Children will use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Children will demonstrate that dissolving, mixing and changes of	Children will 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. Children will give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Children will explain that some changes result in	Children will describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Children will describe the life process of reproduction in some plants and animals. Children will analyse secondary data.	Children will describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Children will describe the movement of the Moon relative to the Earth. Children will describe the Sun, Earth and Moon as approximately spherical bodies. Children will use the idea of the Earth's rotation to explain day and night and	Children will explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Children will identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Children will recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	Children will describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Children will describe the life process of reproduction in some plants and animals. Children will describe the changes as humans develop to old age.	Children will describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Children will explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Children will identify the effects of air resistance, water resistance and friction, that act between moving surfaces.

	state are reversible changes.	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.		the apparent movement of the sun across the sky. Children will explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	Children will plan investigations to further their understanding of the effects of forces.		Children will describe the Sun, Earth and Moon as approximately spherical bodies. Children will experiment, analyse data and draw conclusions.
Year 6	**Classifying**	**Light and reflection**	**Evolution and inheritance**	**Circuits, batteries and switches**	**Circulation and exercise**	**Making connections*** **(Are some sunglasses safer than others?)**	
	Children will use and produce classification keys to sort and identify organisms. Children will 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. Children will give reasons for	Children will recognise that light appears to travel in straight lines. Children will 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. Children will 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. Children will use the idea that light travels in straight lines to explain why shadows have the	Children will recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Children will recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Children will identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	Children will associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Children will 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. Children will use recognised symbols	Children will identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Children will recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Children will describe the ways in which nutrients and water are transported within animals, including humans. Children will devise their own investigation	Children will recognise that light appears to travel in straight lines. Children will 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. Children will 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. Children will recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Children will associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.	

	classifying plants and animals based on specific characteristics.	same shape as the objects that cast them.		when representing a simple circuit in a diagram. Children will design and produce their own practical devices	and analyse secondary data	Children will use recognised symbols when representing a simple circuit in a diagram.

***Making connections brings together learning from multiple Science units**