KNOWLEDGE PROGRESSION SCIENCE

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Animals including humans	Use all their senses in hands-on exploration of natural materials. N Understand the key features of the life cycle of a plant and an animal. N Explore the natural world around them, making observations and drawing pictures of animals and plants. ELG	To know the names of a variety of animals and their groups (fish, amphibians, reptiles, birds and mammals). To know the difference between the different animal groups. To know the difference between carnivores, herbivores, omnivores. To know the features of different animals (body parts). To know the difference between the features of different animals (body parts). To know the names of different body parts and the names of the senses.	To know that animals (including humans) have offspring which grow into adults e.g. kittens into cats, puppies into dogs, babies into adults. To know the basic needs of animals (including humans) e.g. food, water, air. To know the importance for humans of exercise, eating the right amounts of different food and hygiene.	To know that animals (including humans) need the right types and amount of nutrition and that they cannot make their own food; nutrition comes from what they eat. To know that humans and some animals have skeletons and muscles for support and movement.	To know the simple functions of the basic parts of the digestion system in humans To know the different types of teeth in humans (and other animals) and their simple functions. To know a variety of food chains and how the energy flows through a food chain. To know how to correctly draw a food chain. To know some producers, predators and prey.	To know the changes as humans develop into old age. To know the gestation period of other animals and humans.	To know the main parts of the human circulatory system, and the functions of the heart, blood vessels and blood. To know the impact of diet, exercise, drugs and lifestyle on the ways their bodies function. To know the ways in which nutrients and water is transported.

Habitats and living things	Understand the key features of the life cycle of a plant and an animal. N Begin to understand the need to respect and care for the natural environment and all living things. N Describe what they see, hear and feel whilst outside. R Explore the natural world around them, making observations and drawing pictures of animals and plants. ELG 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 ELG	To know what a habitat is (local environment). To know what their local habitat is (Different habitats?). To know specific environments of plants and animals. <u>Everyday materials</u> To know that wood was once a tree and be able to explain whether it is living or dead. <u>Animals, including humans</u> To know carnivore, herbivores and omnivores; and understand that they eat different things.	To know the differences between things that are living, dead and things that have been alive. To know that most living things live in habitats to which they are situated. To know that different kinds of animals and plants depend on each other. To know and name a variety of plants and animals in their habitats including microhabitats. To know 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.	<u>Plants</u> To know types of plants – flowering vs non flowering. <u>Animals inc Humans</u> To know some animals are vertebrates while others invertebrates.	To know key characteristics of plants and animals. To know different ways to group living things eg mammals etc, evergreen etc. To know a variety of living things in their local and wider environment. To know that environments can change and that this can sometimes pose dangers to living things.	To know the differences in the life cycles of a mammal, amphibian, insect and a bird. To know the life process of reproduction in some plants and animals.	To know a range of observable characteristics of animals, microorganisms and plants. To give reasons for classifying plants, animals and microorganisms based on specific characteristics.

Evolution and inheritance	Plant seeds and care for growing plants. N Explore the natural world around them, making observations and drawing pictures of animals and plants. ELG	<u>Plants</u> To know the names of plants. To know the simple structure of some plants. <u>Animals including humans</u> To know the names of a variety of common animals including reptiles, birds, amphibians and mammals. To know the structure of a variety of common animals.	<u>Living things and their habitats</u> To know what a simple food chain is. To know habitats provide basic needs for animals and plants.	<u>Rocks</u> To know how fossils are formed. To know where fossils are found. To know plants and animals can be fossilised. <u>Plants</u> To know plants are grown to produce different fruits and grow better in different environments / conditions.	<u>Rocks</u> To know how fossils are formed. To know where fossils are found. To know plants and animals can be fossilised. <u>Plants</u> To know plants are grown to produce different fruits and grow better in different environments / conditions.	<u>Rocks</u> To know how fossils are formed. To know where fossils are found. To know plants and animals can be fossilised. <u>Plants</u> To know plants are grown to produce different fruits and grow better in different environments / conditions.	To know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. To know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. To know how animals and plants adapted to suit their environment in different ways and that adaptation may lead to evolution.

Earth and Space	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. ELG	<u>Seasonal Changes:</u> To know the four seasons. To know the changes across the four seasons. To know the weather types associated with the four seasons.	<u>Light:</u> To know light from the sun is needed for plants to grow. <u>Materials and their properties:</u> To know some materials are suitable for things like space exploration.	<u>Light:</u> To know that light from the sun is needed for us to be able to see across the planet. To know that shadow length is linked to the sun's apparent movement across the sky.	<u>Sound:</u> To know that sound needs a medium to travel through. To know that there is no medium in space between stars and planets and so there is no sound.	<u>Earth and space</u>: To know the movement of the Earth, and other planets, relative to the sun in the solar system. To know the movement of the moon relative to the Earth. To know the sun, Earth and moon are approximately spherical bodies. To know the Earth rotates. To know night and day is caused by the Earth's rotation. To know and name the planets in the solar system and their order from the sun.	<u>Light:</u> To know that light travels in straight lines and reflects off surfaces which is what helps us see objects in space. Stars, sun, planets etc. To know that some of the starts we see are extinct by the time we see them due to the distance they are away from the Earth.

Electricity	Explore the natural world around them. R	<u>Seasonal Changes</u> To know about weather types e.g. lightning. <u>Materials</u> To know the material an object is made from. To know metal is a material.	<u>Uses of Everyday Materials</u> To know the suitability of a variety of materials. To know a range of metals and discuss their properties.	<u>Light</u> To know that some lights are powered by electricity/batteries.	<u>Electricity</u> To know the names of common appliances that run on electricity. To know what a circuit is. To know the parts/components of a circuit. To know what makes a circuit work. To know how a switch works. To know what conductors and insulators are.	<u>Properties of materials</u> To know which materials conduct electricity and which don't. To know the uses of everyday materials e.g. metal wires (copper) and plastic casing.	To know the number of cells and voltage in the circuit and how it is associated with the brightness of a lamp/bulb or the volume of a buzzer. To know how the use of switches affects a circuit. To know the symbols in an electrical circuit diagram.

Forces and Magnets	Explore and talk about different forces they can feel. N Explore the natural world around them, making observations ELG	<u>Materials</u> To know that some surfaces have friction. <u>Materials</u> To know some materials are magnetic. <u>Seasons</u> To know why you can only fly a kite on a windy day.	<u>Animals and humans</u> To know that during exercise there are balanced and unbalanced forces. <u>Materials</u> To know which materials would make the best fridge magnet.	To know how things move on different surfaces. To know that some forces need contact between two objects, but magnetic forces act at a distance. To know how magnetics attract or repel each other and attract some materials and not others. To know that everyday materials can be compared and grouped on the basis of whether they are attracted to a magnet, and identify some magnetic materials. To know magnets have two poles. To know whether two magnets will attract or repel each other. Depending on which poles are facing.	<u>Sound</u> To know vibrations are caused by force. To know the size of vibration depends on the size of the force. <u>Animals inc humans</u> To know that forces (pushing/ squeezing etc) are needed in digestion.	To know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. To know the effects of air resistance, water resistance and friction that act between moving surfaces. To know that some mechanisms, including pulleys and gears, allow a smaller force to have a greater effect.	<u>Animals inc humans</u> To know that there are forces within the body e.g. heart pumping blood.

Light	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 ELG	<u>Seasons</u> To know that light changes over four seasons <u>Animals inc humans</u> To know that eyes help us to see.	<u>Plants</u> To know that plants need light to grow <u>Living things and their habitat</u> To know that some animals are nocturnal.	To know that light is needed in order to see things and that dark is the absence of light. To know that light is reflected from surfaces. To know that light from the sun can be dangerous and that there are ways to protect their eyes. To know that shadows are formed when the light source is blocked by a solid object. To know that there are patterns in the way that the size of shadows change.	<u>Electricity</u> To know that electricity gives us man-made light sources.	<u>Properties and change of materials</u> To know that materials are either transparent, translucent and opaque. <u>Earth and space</u> To know that it is dangers to look at the sun. To know what makes day and night. To know that sundials use the sun to tell the time.	To know that light appears to travel in straight lines. To know that light travels in straight lines and use this to explain that objects are seen because they give out or reflect light into the eye. To know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. To know that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Materials and properties	Use all their senses in hands-on exploration of natural materials. N Explore collections of materials with similar and/or different properties. N Talk about the differences between materials and changes they notice. N Explore the natural world around them. R Describe what they see, hear and feel whilst outside. R Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. ELG	To know differences between an object and the material from which it is made. To know and name a variety of materials: Wood, plastic, glass, metal, water, rock To know some simple physical properties of a variety of materials. To know how some materials have different properties to others.	To know that some materials are more suitable than others for specific uses. To know how the shape of some solid objects can be changed in different ways.	<u>Magnets</u> To know that some materials are magnetic and non-magnetic. To know that most metals are magnetic. <u>Rocks</u> To know some uses for different rocks.	<u>States of matter</u> To know that some materials are solids, liquids and gases. To know that some materials can change state. <u>Electricity</u> To know which materials are better conductors.	To know the similarities and differences between everyday objects and be able to group them based on their properties and results of testing. To know that some materials will dissolve in liquid to form a solution, and know how to recover a substance from a solution. To know how mixtures might be separated, including through filtering, sieving and evaporating. To know that some materials are more suitable for particular uses than others based on testing and conclusions. To know that dissolving, mixing and changes of state are reversible changes.	

Plants	Plant seeds and care for growing plants. N Understand the key features of the life cycle of a plant and an animal. N Explore the natural world around them, making observations and drawing pictures of animals and plants. ELG	To know a variety of common, wild and garden plants including deciduous and evergreen trees. To know the basic structure of a variety of common flowering plants including trees.	To know how seeds and bulbs grow into mature plants. To know why plants need water, light and a suitable temperature to grow and stay healthy.	To know the functions of different parts of flowering plants. To know the requirements of plants, the life and growth and how they vary from plant to plant. To know the way in which water is transported in plants. To know the part that flowers play in the lifecycle of plants.	<u>Living things</u> To know how to use classification keys to help group, identify and name a variety of living things.	<u>Living things</u> To know the life process of reproduction in some plants. <u>Earth and Space</u> To know that the conditions in space would not be suitable for plant growth.	<u>Living things</u> To know how living things are classified into broad groups. To know the reasons for classifying plants based on specific characteristics. <u>Evolution and Inheritance</u> To know how plants are adapted to suit their environment.
Rocks	Use all their senses in hands-on exploration of natural materials. N Explore collections of materials with similar and/or different properties. N Explore the natural world around them. R Describe what they see, hear and feel whilst outside. R	<u>Materials</u> To know an object is different to the material from which it is made e.g. a statue made of rock. To know names of a variety of everyday materials, including wood, plastic, glass, metal, water and rock. To know physical properties of rock.	<u>Materials</u> To know that particular materials are more suitable for a given purpose including rocks.	To know different kinds of rocks on the basis of their appearance and simple physical properties. To know how fossils are formed when things that have lived are trapped within rock. To know that soils are made from rocks and organic matter.	<u>States of matter</u> To know that some materials change state when they are heated or cooled. To know that when rocks are heated to a very high temperature they change state.	<u>States of matter</u> To know how rock is changed when it is heated and cooled. E.g. Formation of rock - lava (magma under the Earth's surface is melted rock).	<u>Evolution and inheritance</u> To know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.

Seasonal Changes	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. ELG	To know the changes across the four seasons. To know which weather types are associated with the seasons and how the length of 'day' changes. To know how plants change across the four seasons and how some do not appear to change.	<u>Living things and their habitats:</u> To know that things generally live in habitats in which they are suited. Know why some birds migrate for winter. <u>Materials:</u> To know that different materials are more suitable during different seasons due to weather. <u>Animals including humans:</u> To know about Spring and how many animals give birth during this season.	<u>Light:</u> To know that shadow lengths differ at the same time of day in different seasons. <u>Plants:</u> To know that plants have different requirements for growth and as a result different plants grow differently in different seasons.	<u>Living things and their habitats:</u> To know that environments can change by the season and that this affects animal activity. <u>States of matter:</u> To know the role the weather/temperature can play in the water cycle. E.g. to know why we are most likely to have snow during winter.	<u>Earth and space:</u> To know of the Earth's rotation explains day and night. To know that the position of the Earth in its orbit around the sun and the Earth's tilt on its axis produces the seasons.	<u>Evolution and inheritance:</u> To know that animals have adapted to suit their environment and how this links to the seasons. E.g. animals shedding different coats due the seasons.

Sound	Describe what they see, hear and feel whilst outside. R	<u>Animals including humans</u> To know the basic parts of the human body and be able to identify ears and explain they give us the sense of hearing. <u>Seasons</u> To know the different sounds that are heard in different seasons when on seasonal walks. E.g. spring – new birds	<u>Uses of everyday materials</u> To know what materials would be suitable for making a musical instrument. <u>Living things and their habitats</u> To know the importance of nocturnal animals having excellent hearing ability.	<u>Animals including humans</u> To know the role of the bones in the ear for hearing.	To know how some sounds are made – vibrating. To know that vibrations need a medium to travel through to get to the ear. To know that different objects can produce a different pitch. To know that 'stronger' vibrations produce a greater volume. To know that sounds get fainter as the distance from the source increases.	<u>Animals including humans</u> Know that as we develop to old age our hearing begins to deteriorate. As we grow older we struggle to hear different pitches. <u>Earth and space</u> Know that there is no medium for sound to travel.	<u>Light:</u> To know how sounds can also reflect off surfaces just like light and this can lead to echoes. <u>Electricity:</u> To know that when a buzzer becomes louder it is receiving more power which is increasing the strength of vibrations produced. <u>Evolution and inheritance:</u> To know how animals have adapted and evolved to increase hearing ability and why this has led to the species success.

States of matter	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. ELG	<u>Everyday Materials:</u> To know the simple physical properties of different materials (Solids and some exposure to liquids)	<u>Uses of everyday materials:</u> To know that some materials are more suitable for particular uses (solids and water (frozen). To know different uses for ice. Explain why an igloo would not be a suitable structure in different environments.	<u>Plants:</u> To know that plants need oxygen which is a gas. (Carbon dioxide and nitrogen also gases).	To know if an object is a solid, liquid or gases. To know the difference between solids, liquids and gases. To know that some materials change state when heated. To know the part played by evaporation and condensation in the water cycle.	To know and explain the difference between reversible and irreversible changes. To know that dissolving, mixing and changes of state are reversible changes. To know 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.	<u>Light:</u> Know that an object's state can impact how light passes through it. E.g. water and ice.