

Science	Nursery	Reception	Year one	Year two	Year three	Year four	Year five	Year six
Knowledge – by the end of the year pupils should know:								
Autumn One <i>*Non-statutory guidance</i>	Work in progress	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	ANIMALS INC HUMANS identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense <i>(One sense per lesson)</i>	ANIMALS INC HUMANS - notice that animals, including humans, have offspring which grow into adults - find out about and describe the basic needs of animals, including humans, for survival (water, food and air) - describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	ROCKS - compare and group together different kinds of rocks on the basis of their appearance and simple physical properties - describe in simple terms how fossils are formed when things that have lived are trapped within rock - recognise that soils are made from rocks and organic matter. <i>Know that different types of rock can be measured on the hardness scale</i> <i>Know the different types of rock and how they are formed (metamorphic, igneous sedimentary)</i> <i>Know the names of some rocks</i> <i>Know some of the uses of stone e.g. roofs, walls, etc</i>	ANIMALS INC HUMANS - describe the simple functions of the basic parts of the digestive system in humans - identify the different types of teeth in humans and their simple functions	MATERIALS & THEIR PROPERTIES - compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electric and thermal), and response to magnets - give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials including metals, wood and plastic <i>know what soluble means and how to test for it.</i> <i>Know what conductivity means, transparency mean.</i> <i>Know that materials are</i>	LIVING THINGS & HABITATS - 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 - give reasons for classifying plants and animals based on specific characteristics. <i>Know what a germ and bacteria are</i> <i>Know there are many microorganisms</i> <i>Know how they help things to decay, rot and break down</i> <i>Know what a fungus is</i>

							<i>used for different jobs based on their properties.</i>	
Autumn Two <i>*Non-statutory guidance</i>	Work in progress	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	ANIMALS INC HUMANS - identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. - identify and name a variety of common animals that are carnivores, herbivores and omnivores - describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)	MATERIALS & THEIR PROPERTIES identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	PLANTS - identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers - explore the requirements of plants for life and growth (ait, light, water, nutrients from soil, room to grow) and how they vary from plant to plant - investigate the way in which water is transported within plants - explore the part that flowers play in the life cycle of flowering plants including pollination,	SOUND - identify how sounds are made, associating some of them with something vibrating - recognise that vibrations from sounds travel through a medium to the ear - find patterns between the pitch of a sound and features of the object that produced it - find patterns between the volume of a sound and the strength the vibrations that produced it - know that sounds get fainter as the distance from the sound	MATERIALS & THEIR PROPERTIES - Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution - Use knowledge of solids, liquids and gases to decide how mixtures might be separated including through filtering, sieving and evaporating - Demonstrate that dissolving, mixing and changes of state are reversible changes	ANIMALS INC HUMANS - identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood - describe the ways in which nutrients and water are transported within animals, including humans

					seed formation and seed dispersal • <i>Know where plants grow and know that some plants such as air plants, the cactus need less water than other plants.</i>	source increases • <i>understand how sound can be insulated</i>	• Explain that some changes result in the formation of new materials and that this kind of change is not usually reversible, inc changes associated with burning and the action of acid on bicarbonate of soda • <i>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</i> • <i>know that solids, liquids and gases can be separated, including through filtering, sieving and evaporating</i>	
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Spring One <i>*Non-statutory guidance</i>	Work in progress	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	MATERIALS & THEIR PROPERTIES - distinguish between an object and the material from which it is made - identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock <i>Describe how plastic is bad for the environment.</i> <i>How to reduce, reuse and recycle some materials.</i>	MATERIALS & THEIR PROPERTIES - identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses <i>Buoyancy and density</i> <i>Transparency</i>	MAGNETS - observe how magnets attract or repel each other and attract some materials and not others - 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 - describe magnets as having two poles - predict whether two magnets will attract or repel each other, depending on which poles are facing	LIVING THINGS & HABITATS - recognise that living things can be grouped in a variety of ways - explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment ANIMALS INC HUMANS - construct and interpret a variety of food chains, identifying producers, predators and prey <i>Interpret a food web</i> <i>understand the predator prey relationship</i> <i>know that some animals are herbivores, carnivores or omnivores</i>	LIVING THINGS & HABITATS describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	ANIMALS INC HUMANS - recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function (<i>including legal and illegal drugs</i>) (Y5 Materials) <i>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution)</i> <i>demonstrate that dissolving, mixing and changes of state are reversible changes</i> <i>explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes</i>
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						know what vegan and vegetarian mean		associated with burning and the action of acid on bicarbonate of soda.
Spring Two <i>*Non-statutory guidance</i>	Work in progress	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.	MATERIALS & THEIR PROPERTIES - describe the simple physical properties of a variety of everyday materials - compare and group together a variety of everyday materials on the basis of their simple physical properties.	LIVING THINGS & HABITATS <i>(Consolidate Y2 Aut1: explore and compare the differences between things that are living, dead, and things that have never been alive)</i> 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	ANIMALS INC HUMANS - 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 - identify that humans and some other animals have skeletons and muscles for support, protection and movement.	MATERIALS & THEIR PROPERTIES - compare and group materials together according to whether they are solids, liquids or gases - 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)	LIVING THINGS & HABITATS - describe the life process of reproduction in some plants and animals ANIMALS INC HUMANS - describe the changes as humans develop to old age	EVOLUTION AND INHERITANCE - recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago - recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents

		Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter		they depend on each other - identify and name a variety of plants and animals in their habitats, including microhabitats - 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. <i>(Cover one habitat per lesson – wood, rainforest, pond, coast, polar regions, ocean)</i>		- know what a solid is and some types of solid. - know what a liquid is and some different types of liquid - know what a gas is and different types of gas - know the names of some liquids, gases and solids from the periodic table such as neon, hydrogen, nitrogen, methane - know that some materials can be found in all three states such as water		identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Summer One <i>*Non-statutory guidance</i>	Work in progress	Explore the natural world around them, making observations and drawing pictures of animals and plants.	PLANTS identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	MATERIALS & THEIR PROPERTIES find out how the shapes of solid objects made from some materials can be changed by squashing,	LIGHT - recognise that they need light in order to see things and that dark is the absence of light - notice that light is reflected from surfaces	<i>(Consolidate Y3 LIGHT objectives)</i> ELECTRICITY - identify appliances that run on electricity - construct a simple series electrical	FORCES explain that unsupported objects fall towards the Earth because of the force of gravity acting between the	SOUND <i>(Y4 Sound revision:</i> <i>identify how sounds are made, associating some of them with something vibrating</i>

		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	identify and describe the basic structure of a variety of common flowering plants, including trees.	bending, twisting and stretching	- recognise that light from the sun can be dangerous and that there are ways to protect their eyes - recognise that shadows are formed when the light from a light source is blocked by an opaque object - find patterns in the way that the size of shadows change.	circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers - know if 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 - recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit - recognise some common conductors and insulators, and associate metals with being good conductors. - Know what a cell is and its importance in a circuit	Earth and the falling object EARTH AND SPACE - describe the movement of the Earth, and other planets, relative to the Sun in the solar system - describe the movement of the Moon relative to the Earth - describe the Sun, Earth and Moon as approximately spherical bodies - use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. - describe the movement of the Earth, relative to the sun, and how	- recognise that vibrations from sounds travel through a medium to the ear) LIGHT - recognise 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 our eye - 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 - know how light enters the eye. - know the parts of an eye and ear and how they work - understand how different
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							<i>this creates seasons</i>	<i>animals hear and see</i>
Summer Two <i>*Non-statutory guidance</i>	Work in progress	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	SEASONAL CHANGE - observe changes across the four seasons - observe and describe weather associated with the seasons and how day length varies.	PLANTS <i>(Consolidate Y1 parts of a plant)</i> - observe and describe how seeds and bulbs grow into mature plants - find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. LIVING THINGS & HABITATS - explore and compare the differences between things that are living, dead, and things that have never been alive .	FORCES - compare how things move on different surfaces - notice that some forces need contact between two objects, but magnetic forces can act at a distance <i>Know that to make something move you need a force such as push and pull.</i> <i>Say when balanced or unbalanced forces are acting on an object and predict what will happen to the object</i> <i>Know that magnetism is a force that can make things move.</i>	MATERIALS & THEIR PROPERTIES - identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. <i>Linking the water cycle and climate change</i> LIVING THINGS & HABITATS - recognise that environments can change and that this can sometimes pose dangers to living things <i>Natural and human changes to the environment</i> <i>How changes can be beneficial and harmful</i>	FORCES - identify the effects of air resistance, water resistance and friction, that act between moving surfaces - recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	LIGHT - use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them ELECTRICITY - 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 positions of switches - use recognised symbols when



