Progression of skills - science

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Biology Plants	 Observe plants in their natural environment. Identify and observe ways in which a plant can grow. Grow a plant (Jack and the beanstalk) Name parts of a plant Florist role –play (Visit from florist) Outdoor gardening growing strawberries, broad beans, herbs, flowers, wheat for autumn harvest. (Link to harvest) 	 Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees. 	 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. What are the similarities and difference between deciduous and evergreen trees? 	 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 (air, light, water, nutrients from soil, and 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, seed formation and seed dispersal. 	- Explain why a flower that is not pollinated will not reproduce.	- Describe the life processes common to all living things.	
Biology Animals, including humans	 Name basic parts of the face and body. Sing songs head, shoulders, knees and toes Know we have a skeleton inside our body (X-rays Funnybones) know why dental hygiene is important (Visit from dentist) Know why sleep is important (Link to hibernating animals) Try healthy foods (Cooking) Know why exercise is important Know that we have similarities and differences in appearance Know that some animals are nocturnal and some 	-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) - Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	 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. 	- 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.	-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 - Construct and interpret a variety of food chains, identifying producers, predators and prey.	- Describe the changes as humans develop to old age	- Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood - Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function - Describe the ways in which nutrients and water are transported within animals, including humans.

	animals hibernate in winter. -Observe the life cycle of a chick - Show care and concern for living things. (Minibeast hotel) - Know that dinosaurs are extinct and were carnivores, herbivores and omnivores. (Excavation of bones)					
Chemistry Everyday materials	 Using senses to explore how materials feel and using key vocabulary soft, hard, spiky, Investigate which materials is most suitable for a boat (Mr. Gumpy's outing) 	 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. 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. 	 Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 			
Biology Living things and their habitats	- Observe animals/plants in their natural habitats (squirrels collecting nuts from the garden, minibeast in the minibeast hotel, frogs in the pond, insects in the forest school, children use magnifiers to look more closely.	- Observe plants in their natural habitat.	 Explore and compare the differences between things that are living, dead, and things that have never been alive 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 Identify and name a variety of plants and animals in their habitats, including 	-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 -Recognise that environments can change and that this can sometimes pose dangers to living things.	-Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird -Describe the life process of reproduction in some plants and animals.	 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.

			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.			
Chemistry Rocks	-Know what a fossil is (Link to dinosaurs topic) -Digging for fossils in the mud/sand	-Describe the formation of fossils.	- Illustrate the formation of fossils.	 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 		
Physics Light	 Night and day – routines Use torches to explore shadows. Draw around a shadow outside. 	- Name a variety of sources of light.	 Illustrate how light travels from light sources to our eyes. Experiment with ways to block light from reaching our eyes. 	 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 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. 		 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 the 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 Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Physics Forces and magnets	 Investigating magnets – Exploring tray Magnetic fish game Explore through play push and pull both indoors and outdoors. 	- What happens to objects when they are pushed/Pulled? - Observe and describe the movements of a range of things.	- Do heavy and light things move differently? Is there a pattern?	 Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance 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 	 Explain that Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object - Identify the effects of air resistance, water resistance and friction, that act between moving surfaces 	 Apply your knowledge of magnetic poles to create a game that uses the idea that magnets attract or repel each other. Investigate the Aurora Borealis and explain how this (the concept) is linked to magnetism. Apply your knowledge of gear, pulleys and levers to demonstrate and explain how

				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.		- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	a small force can have a greater effect. (pg 261)
Chemistry States of matter	- Baking - Water play - Sand play - Messy play		- To identify a material as a solid.	 Name materials as solids, liquids or gases. Observe and describe the typical properties of solids, liquids and gases. 	 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) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 		
Physics Sound	- Identify what we hear with - sound walk - listen to different sounds and identify the source.	- Name/recognise a variety of sources of sound.	- Observe ow we hear sounds with our ears. - Illustrate that ears allow us to hear sounds.		 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 of the vibrations that produced it Recognise that sounds get fainter as the distance from the sound source increases. 		

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Physics	- Know that electricity	- Observe and hame some	- Categorise electrical	- Identity common	- Experiment with,	- Associate the brightness of a
The statistics	charges objects in the	sources of electricity.	appliances, explain the reasons	appliances that run on	explain and demonstrate	lamp or the volume of a buzzer
Electricity	classroom e.g. Pads,	- Follow Instructions to	for your categories	electricity	the pattern between the	with the number and voltage
	torches,	construct an electrical	- Describe a circuit naming	- Construct a simple series	voltage the voltage of	of cells used in the circuit
	- Know what a plug is.	circuit.	each component.	electrical circuit, identifying	cells and the brightness	- Compare and give reasons for
	-Exploring charging			and naming its basic parts,	of a bulb.	variations in how components
	stations for robots.			including cells, wires, bulbs,		function, including the
				switches and buzzers		brightness of bulbs, the
				 Identify whether or not a 		loudness of buzzers and the
				lamp will light in a simple		on/off position of switches
				series circuit, based on		 Use recognised symbols
				whether or not the lamp is		when representing a simple
				part of a complete loop with		circuit in a diagram.
				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		
Chemistry					- Compare and group	- Relate, citing evidence, your
					together everyday	understanding of solutions to
Properties					materials on the basis of	your understanding of the
and					their properties,	water cycle.
					including their hardness,	- What might happen if a bird
changes of					solubility, transparency,	sits on a live, uninsulated
mataniala					conductivity (electrical	power line? (propose)
muterius					and thermal), and	
					response to magnets	
					Know that some	
					materials will dissolve in	
					iquid to form a solution,	
					from a solution Use	
					knowledge of solids	
					liquids and gases to	
					decide how mixtures	
					might he congrated	
					inglit be separated,	
					filtering cieving and	
					evanorating	
					cvuporating	

Physics Earth and Space Seasonal changes	- Observe the changes in tress across the four seasons - Describe what you should wear for different weather. - Make a pin wheel for a windy day.	 Observe changes across the four seasons Name times of the day. Observe and describe the suns position in the sky at different times of the school day. 	- Compare and contrast weather and day length across the four seasons.	- Describe the movement of the earth relative to the sun.	- Label a diagram of and describe the solar system.	 Give reasons, based on evidence from comparative and fair tests, for the particular - uses of everyday materials, including metals, wood and plastic - Demonstrate that dissolving, mixing and changes of state are reversible changes 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 and the action of acid on bicarbonate of soda. Describe the movement of the Earth, and other planets, relative to the Sun in the solar system 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. 	- Explain and demonstrate how and why a sundial used to tell the time, works.
Biology Evolution and	- LINK to history baby to now		- List the ways that humans may resemble their parents.			- Describe how animals and plants are suited to their environments in different ways.	- Recognise that living things have changed over time and that fossils provide information about living things that

inheritance				inhabited the Earth millions of
mileritunce				years ago recognise that living
				things produce offspring of the
				same kind, but normally
				offspring vary and are not
				identical to their parents
				- Identify how animals and
				plants are adapted to suit their
				environment in different ways
				and that adaptation may lead
				to evolution.