Science Long Term Plan

	Autumn		Spring	Summer	
EYFS	**Living Things – Animals (including humans) and plants** My Body: – Identify, name and talk about different body parts – Explore how different body parts work – Explore five senses and understand their purpose – Understand that humans grow in a sequence – baby / child / teenager / adult. Talk about key changes – taller / developing skills	**Living Things – Animals (including humans) and plants** Animals: – Name and talk about different habitats – Begin to talk about similarities / differences between animals – Know that it is important to take care of animals – feed and take pet to the vets / feed the garden birds / not touch woodland animals Plants: – Know that there are different types of trees, plants and flowers – Know that indoor plants need to be	**Living Things – Animals (including humans) and plants** Animals: – Understand what a wild animal is – Find out about different **wild animals in the wider world** – Name each animal [baby / adult] – Label important features of each animal and know why they are important e.g. xxx – Talk about the sounds each animal makes and how they move – Name and talk about different habitats – Begin to talk about similarities / differences between animals – Name and talk about some animals who **hibernate** and understand why – Talk about how some animals take care of themselves and their young in the wild – Begin to understand that animals need to be protected & respected Plants: – Observe and know that trees, plants and flowers will start to grow quickly in the Spring	**Living Things – Animals (including humans) and plants** Animals: – Continue to find out about **minibeasts** – Name different minibeasts – Label important features of each minibeast – Group minibeasts that have wings – Begin to develop an understanding of the lifecycle of a caterpillar Plants: – Observe and begin to talk about the lifecycle of a seed / plant	**Living Things – Animals (including humans) and plants** Animals: – Find out about different **wild animals in the sea** – Name each animal [baby / adult] – Label important features of each animal and how they are used – Talk about the sounds each animal makes and how they move – Begin to talk about similarities / differences between animals – Talk about how some animals take care of themselves and their young in the wild – Begin to understand that

	Animals: – Find out about **domestic** & some **local animals** – Name each animal [baby / adult], including some nocturnal – Understand that each animal grows like a human, baby to adult – Talk about the sounds each animal makes and how they move	taken care of – water / sun – Observe and talk about autumn changes		– Name what a seed needs to grow – Name key parts of a plant – Know that trees, plants and flowers need to be handled with care	wild animals need to be protected and respected Plants: – Know that trees, plants and flowers need to be handled with care – Know how to look after plants – To observe the changes
	Seasons / Natural Phenomena ▪ Observe, name and talk about different types of weather ▪ Name the four seasons and know autumn comes after summer ▪ Begin to associate different weather with the seasons - Autumn, colder weather, rain, strong wind, fog ▪ Observe and begin to understand the impact the weather has on - Trees, plants and flowers - Animals e.g. *finding warm places before Winter arrives* - Humans e.g. *wearing warm and waterproof clothes*	**Seasons / Natural Phenomena** ▪ Observe and talk about different types of weather in more detail ▪ Name the four seasons and know, spring comes after winter ▪ Begin to associate different weather with the seasons - Winter, cold weather, frost, ice, sometimes snow - Spring, warmer weather, showers, light winds, storm [thunder / lightening] ▪ Observe and begin to understand the impact the weather has on - Trees, plants and flowers, new buds in the Spring	**Seasons / Natural Phenomena** ▪ Observe and talk about different types of weather in more detail ▪ Name the four seasons and know summer comes after spring ▪ Begin to associate different weather with the seasons - Spring, warmer weather, showers, light winds, storms - Summer, hotter weather, less rain, more sunshine ▪ Observe and begin to understand the impact the weather has on - Trees, plants and flowers, lots of growth - Animals explore and play		

	Materials & Processes ▪ Begin to explore different materials using senses, including seasonal - Label and group objects - Describe and compare some properties - Talk about likes / dislikes ▪ Learn to use a magnifying glass Observe food changes during cooking activities	- Animals, in warmer countries / hibernating for the Winter - Humans e.g. *keeping warm inside / eating hot food* ▪ Begin to understand that in the Winter we have shorter days, less day light **Materials & Processes** ▪ Begin to explore and talk about the changing properties of water □ water [warm / cold] □ ice □ snow ▪ Begin to explore materials and find some that are waterproof ▪ Observe and talk about food changes – dry to wet [mixing flour with milk]		- Humans e.g. being sun safe - *wearing sun hat, glasses, sunscreen, drink more water; wear cooler clothes, eating cold food* ▪ Begin to understand that in the Summer we have longer days, more sun ▪ **Materials & processes** ▪ Explore and talk about mixing some materials with water e.g. sand / soil / clay. Begin to make some predictions. ▪ Explore and talk about materials that float and sink.	
	Enrichment opportunities: - New baby visit - Mini first aid training: the importance of safe eating.	**Enrichment opportunities:** - Winter walk	**Enrichment opportunities:** - Dentist visit - Chester Zoo trip	**Enrichment opportunities:** - Mini beast hunt - Ladybirds and caterpillars' life cycles - Planting seeds ready for Summer 2	**Enrichment opportunities:** - Local bus trip
	Game changer:	**Game changer:**		**Game changer:**	
Year 1	**Are all objects made from the same material?** - I know the difference between an object and a material. - I know the names of everyday materials, including wood, plastic, glass, metal, water and rock.	**What are the names for the parts of our bodies?** - I can Identify, name, draw and label the basic parts of	**How can we group animals?** - I know a variety of common animals, including fish, amphibians,	**What plants can I find in our environment?** - I know the names of a variety of common wild plants and garden plants	**What is the difference between evergreen and deciduous trees?** - I know the names of evergreen and deciduous trees. - I know the basic structure of trees.

	- I know what the properties of materials are.		the human body and say which part of the human body is associated with each sense.	reptiles, birds and mammals. - I know a variety of common animals that are carnivores, herbivores and omnivores.	- The basic structure of common flowering plants.	
	Enrichment opportunities: Walk through school and school grounds including forest school.		**Enrichment opportunities:** Mini first aid training: Dealing with bleeding, head bumps and understanding the recovery position (revisit autumn's training). Dogs Trust visit		**Enrichment opportunities:** Spring/Summer walk around park and within school grounds.	
	Game changer: Charles MacIntosh		**Game changer:** Steve Irwin and Guide Dogs UK		**Game changer:** Mesmerising gardens and Dr Percy Julian	
Year 2	**How do all living things work together?** - I know the difference between things that are living, dead and things that have never been alive. - I know a variety of plants in a habitat, including microhabitats. - I know that animals obtain	**What is a life cycle?** - I know the basic stages in a life cycle for animals, including humans e.g., egg, chick, chicken; spawn, tadpole, frog; baby, toddler, child, teenager, adult. - I know the basic needs of animals, including humans, for survival (water, food and air).	**What do plants need to grow?** - I know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers - I know 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 - I can investigate the way in which water is transported within plants - I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.		**How suitable are some materials?** - I know that objects with the same use are made from different materials. - I know that materials are used to make objects with different uses. - I know that squashing, bending and twisting can cause some solid objects to change shape.	

	their food from plants and other animals. - I know what a simple food chain is.					
	Enrichment opportunities: Link to Harvest Day (celebration of crops) Live lesson RSPCA visit Mini First Aid training: Dealing with bleeding, head bumps and understanding the recovery position.		**Enrichment opportunities:** Spring/Summer walk to local park Gulliver's World residential		**Enrichment opportunities:** STEM visitor (bridges)	
	Game changer: David Attenborough	**Game changer:** Maria Sibylla Merian	**Game changer:** Dr Charles Cannon, Botanical Gardens, Singapore		**Game changer:** John Dunlop	
Year 3	**What would happen if there were no bones in our bodies?** - I know what the three key functions of the skeleton are: movement, support and protection. - I know the differences between a vertebrate, invertebrate, endoskeleton	**What can we learn about the world from palaeontologists?** - I know different types of rocks. - I know how to compare and group together different types of rocks on the basis of their appearance and simple physical properties. - I know how fossils are formed when	**How do plants reproduce?** - I know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. - I can investigate the way in which water is transported within plants. - I can explore the part that flowers	**Where do shadows come from?** - I know that I need light in order to see things and that dark is the absence of light. - I know that light is reflected from surfaces. - I know how shadows are formed. - I know that light from the sun can be	**What are magnets?** - I know that some forces need contact between two objects. - I know that magnetic forces can act at a distance. - I know how magnets attract or repel each other and attract some materials and not others - I know magnets have two poles and will attract or	**Can you block a magnetic force?** - I know that some forces need contact between two objects. - I know that magnetic forces can act at a distance. - I know how magnets attract or repel each other and attract some materials and not others - I know magnets have two poles and will attract or

	and exoskeleton. - I know that muscles can cause a movement by shortening and pulling on a bone. - I know some of the seven nutrient groups	things that have lived are trapped within rock	play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	dangerous and that there are ways to protect your eyes.	repel each other, depending on which poles are facing	repel each other, depending on which poles are facing
	Enrichment opportunities: Mini First Aid – dealing with broken bones Healthy Schools' Week	**Enrichment opportunities:** National Careers Week	**Enrichment opportunities:** RHS Bridgewater visit Exploring Plants workshop WWF live lesson – forests (autumn term)	**Enrichment opportunities:** Finding shadows around the school and school grounds	**Enrichment opportunities:** STEM visitor magnets Live lesson - check	**Enrichment opportunities:**
	Game changer: Wilhelm Conrad Rontgen	**Game changer:** Mary Anning	**Game changer:** Dr Jo Elworthy, Eden Project	**Game changer:** Thomas Edison	**Game changer:** MRI scanners, Maglev trains	**Game changer:** Magnes – Greek shepherd
Year 4	**Could we live without electricity?** - I know some common appliances that run on electricity. - I know how to construct a	**How do we hear?** - I know how sounds are made, associating some of them with something vibrating.	**How do we know if a material is a solid, liquid or gas?** - I know how to compare and group materials together, according to	**What will happen if ice caps and glaciers are melting?** - I know how to compare and group materials together,	**How does our digestive system work?** - I know the simple functions of the basic parts of the digestive system in humans.	**How can I group living things?** - I know that simple things can be grouped in a variety of ways - I know how to use classification keys

	simple series electrical circuit. - I know the names of components within a simple series electrical circuit (cells, wires, bulbs, switches and buzzers) - I know that a switch opens and closes a circuit. - I know that metals are good conductors of electricity. - I know how to stay safe around electricity.	- I know that vibrations from sounds travel through a medium to the ear - I know the importance of the hearing aid. - I know and can find patterns between the pitch of a sound and features of the object that produced it.	whether they are solids, liquids or gases. - I know that some materials change state when they are heated or cooled. - I know how to measure or research the temperature at which materials change state using degrees Celsius. - I know the part played by evaporation and condensation in the water cycle.	according to whether they are solids, liquids or gases. - I know that some materials change state when they are heated or cooled. - I know how to measure or research the temperature at which materials change state using degrees Celsius. - I know the part played by evaporation and condensation in the water cycle.	- I know the different types of teeth and their simple functions. - I know how to interpret a variety of food chains, identifying producers, predators and prey.	- I know that environments can change and that this can sometimes pose dangers to living things
	Enrichment opportunities: DT – electric systems	**Enrichment opportunities:** Visit from a staff member who wears hearing aids	**Enrichment opportunities:** Geography learning	**Enrichment opportunities:** VR headsets- polar regions Llandudno residential – zoo visit (link to	**Enrichment opportunities:** VR headsets – digestive system Healthy Schools Week Dentist visit	**Enrichment opportunities:** RHS Bridgewater trip: Who Lives in our Garden workshop Llandudno residential – zoo visit (link to food chains)

				endangered animals ice caps melting)	Dr Farag visit (Smart heart talk)	WWF live lesson - forests
	Game changer: Thomas Edison	**Game changer:** Miller Reese Hutchison	**Game changer:** Greta Thunberg	**Game changer:** David Attenborough	**Game changer:** Dentists	**Game changer:** Wangari Maathai
Year 5	**How and why do objects move?** - I know that unsupported objects fall towards the Earth because of the force of gravity. - I know that the force of gravity acts between the Earth and the falling object. - I know the effect that air resistance has on falling objects. - I know the effect that water resistance has.	**Can we compare animals based on similarities and differences in their life cycles?** - I know the lifecycle of a mammal, amphibian, insect and bird. - I know the lifecycle of a plant and how plants reproduce.	**What are the changes to humans as they develop to old age?** - I know the changes as humans develop to old age.	**What is at the centre of our solar system?** - I know the movement of the Earth, and other planets, relative to the Sun in the solar system - I know the movement of the Moon relative to the Earth - I know the Sun, Earth and Moon as approximately spherical bodies - I know the Earth's rotation to explain day	**How does a cup of salt water change over time?** - I know how to compare and group materials bases on hardness, solubility, transparency, conductivity and response to magnets - I know how to use knowledge of solids, liquids and gases to describe how mixture might be separated, including filtering, sieving and evaporating - I know the particular uses of	**How suitable are everyday materials for particular uses?** - I know that dissolving, mixing and changes of state are reversible changes - I know that some changes result in the formation of new materials, and that this kind of change is not usually reversible. - I know that some materials will dissolve in liquid to form a solution, and describe how to recover a

	- I know the effect that friction has to slow or stop moving objects.			and night and the apparent movement of the sun across the sky	everyday materials, including metals, wood and plastic based on evidence from comparative and fair tests	substance from a solution
	Enrichment opportunities: High school visit to reinforce forces in summer term Swimming and water safety lessons – water resistance	**Enrichment opportunities:** WWF live lesson - forests	**Enrichment opportunities:** Nurse visit Healthy Schools' Week in summer Dementia Friends	**Enrichment opportunities:** VR Headsets – solar system Jodrell Bank trip	**Enrichment opportunities:** Forest school visit – fire, melting and evaporation	**Enrichment opportunities:** DT – food reversible/irreversible changes
	Game changer: Galileo Galilei and Sir Isaac Newton	**Game changer:** Jane Goodall	**Game changer:** Dementia UK charity	**Game changer:** Ptolemy, Alhazen and Copernicus	**Game changer:** Famous salt flats around the world	**Game changer:** Stephanie Kwolek
Year 6	**How do our bodies work?** - I can identify and name the main parts of the human circulatory system. - I can describe the functions of the heart, blood vessels and blood and know their importance in the circulatory system. - I know how nutrients and water are transported within animals, including humans.		**How are living things classified?** - I know how living things are classified into broad groups according to common observable characteristics and	**What is evolution?** - I know how living things are classified into broad groups according to common observable characteristics	**How can I test circuits using common components?** – I know the association of the brightness of a lamp or the volume of a buzzer with the	**How do we see?** – I know that light appears to travel in straight lines. – I know that objects are seen because they give out or reflect

	- I know the impact diet, exercise and drugs has on the way our bodies function.	based on similarities and differences, including micro-organisms, plants and animals. - I can give reasons for classifying plants and animals based on specific characteristics.	- I know how living things are classified based on similarities and differences - I know how micro-organisms, plants and animals are classified - I know reasons for classifying plants and animals based on specific characteristics	number of calls used in the circuit – I know the variations in how components functions, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches – I know the recognised symbols when representing a simple circuit in a diagram	light into the eye. – I 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. – I know why shadows have the same shape as the objects that cast them.
	Enrichment opportunities: Dr Farag visit (Smart heart talk) revisit talk from Y4 talk Healthy Schools Week in summer Mini First Aid Training VR headsets – human body Use of the green screen Link to PE learning	**Enrichment opportunities:** WWF live lesson – forests.	**Enrichment opportunities:** Linking back to Y3 learning on rocks Link to English text about Charles Darwin: Jemmy Button.	**Enrichment opportunities** Eureka museum in Wallasey, 'The Robot Show'	**Enrichment opportunities** Xplore workshops 'light'
	Game changer: William Harvey and Alexander Fleming	**Game changer:** Carl Linnaeus	**Game changer:** Charles Darwin	**Game changer:** William Gilbert Benjamin Franklin Alessandro Volta Micheal Faraday	**Game changer:** Sir Howard Grubb

				Alexander Graham Bell Thomas Edison	