Key Concepts:

EYFS Framework

EYFS			
KEY QUESTIONS			
The EYFS curriculum and progression of skills is currently under review – coming soon! *Click here to see EYFS Curriculum Documents on the website for more information.* ELG: The Natural World Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals and plants; 15 - 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.			

Key Concepts:

Subject National Curriculum KS1

- Recognise that simple 'big' questions can be answered in a variety of ways
- Scientific skills: Observing closely and over time
- Scientific skills: Identifying and classifying
- Using their observations, identifications and classifications to answer questions
- To be able to record data from testing

Year 1	Marvellous me		Time travels		All creatures great and small
KEY QUESTIONS	Plants /Seasons		Animals/ Season changes		Every day materials
Asking simple questions and answering them in different ways.	What different plants have you seen and where have you seen them grow? (history link) Local trips, even around our school. The different environments and where	Give a known simple question that has multiple answers relating to the topic. Also getting the children to create their own	Can some animals eat both plants and meat	What changes do you notice about the seasons when we compare it before Christmas?	What is the name of this item and material is it made from?

	they have been. Hot holidays, cold holidays	Why do we wear different clothes at different times of the year?			
		What flowers do we see at this time of year? Autumn Watching different videos about different weather. Time lapse of the same place going through the different seasons and weathers	What are mammals	What do you notice about the trees and wildlife now?	What material is best for… (testing too)
Observing	How plants grow throughout the year using time lapse videos to show the changes		Looking at how animals look and what they have: EG: fish have tails and lions have sharp teeth.	Also the same leaf through the different stages of the year. How do you know what time of year it is? (use pictures of different plants EG: bare tree = winter etc. and time lapse videos.)	See any similarities and differences between different materials. EG: glass and brick are both hard
		Matching games between the trees characteristics and their names.		Different lengths of the day and night	
Recording and testing		Tests between heat and amount of sun and how big the tree is. What do you notice about the growth of this plant?	Looking at different human body parts and labelling them. Also identifying their roles		Which is the best material for… EG: umbrella > plastic EG: mirror > shiny material

			and related senses		
		What do you notice about the trees outside throughout the year? (pics throughout the year)			
Identifying and classifying	. Can you group these different leaves and petals from the plants they come from? (Variety of different leaves and petals, EG: red leaves = autumn. Also How are these plant petals different? (use of different petals and magnifying glasses)	Experiment – get the class to bring in plants and trees from their gardens or parks and also have examples from the playground and compare, colours, petals etc. Can you group these different leaves and petals from the plants they come from? (Variety of different leaves and petals, EG: red leaves = autumn. Also How are these plant petals different? (use of different petals and magnifying glasses)	Identifying a variety of common animals and their classes.	Why is it hotter in the spring when compared to the winter?	Group materials through reasoning. EG: These are all shiny
	Can your group these plant parts into their different groups? Identify the basic parts first: trunk, stem, petals, leaves, buds.		Also looking into different names for animals such as: herbivore, carnivore and omnivore.	Similarities and differences between the two seasons.	Identify the properties of these materials. Soft, hard, bendy, stiff
KEY VOCABULARY	Seasons, plants, trees, flowers, seed, stem, leave, petals, spring, summer, autumn, winter Herbivore, carnivore, omnivore, food, plants, body parts Materials, shiny, soft, hard, bendy, rough, smooth				

Year 2	Where do we belong?	Diary of a London kid	Journeys into the unknown	
KEY QUESTIONS	Living things	Materials	Animals and human/plants	
Asking and answering questions	If something moves is it alive? How do you know what is alive and dead? Using science vocabulary in questions and in answers	Looking at can the same item be made from different materials	What do animals and humans need to survive?	Can plants grown without soil?
	How can living things survive in their habitat? Compare different animals and what they have in common and are there any differences. Food – meat and plants Habitats Water	Looking at the same materials and all the different things that can be made from it.	What is a good diet?	Identifying the basic aspects that animals need to survive
	Why do different living things live in different places (what is a habitat)? Adaptations		If chocolate is bad for us. Should we ever eat it?	What does regular exercise do for us?

	What adaptations do they have to make them successful in their habitat			
• Similarities and differences and characteristics	Compare a host of different things. EG: • Animals in different habitats • Different habitats • Animals in the same habitat What do these animals have that makes them suit this habitat? (would you expect animal X to live in habitat Y?)	Looking at some materials and do they share any properties.	What happens when we do/don't exercise?	How are some plants different? EG: cactus, ferns and flower plants
	• To look at what makes a habitat and what is included within a habitat. • Can the same living thing live in different habitats? What makes a micro-habitat? Are there any in the playground/garden? (what would live where?)	Which ones can be bent and squished? Are they similar?	Comparing different diets of different people	Similarities and differences between what plants need and what animals need
			Looking at whether all animals need this balance too?	
Identifying and classifying • Comparison	Plant focus: identifying different plants (local area) Animal focus: (living and non-living.) What do you notice about the animals that live in this habitat?	Looking at the different properties of different materials	Different food types when it comes to diet	What all plants need to grow and survive

	Food chains, primary, secondary consumer, predator and prey. Learn new vocabulary about specific names of the different stages of a food chain. Bigger animals have to eat more/bigger food What is a food chain? (what eats what?)	Looking at different ones we use every day.	Looking at what good hygiene is	Comparing results of beansprout experiment.
Observing/testing	What habitat will the insect choose to live in? (box with four different habitats, leave overnight for insect to choose. Each group does the experiment to show fair testing)	Comparative the effectiveness of an item depending on what it is made of. EG: bouncy ball test. Test other materials on how well they bounce.	Humans have offspring and they look like their parent.	Looking at the life of plants. From seed/bulb to full grown plants. Time lapse video
		Handling different objects and using descriptions to give them properties.		Beansprout experiment. Taking away one aspect of what plants need and see what the outcome is.
KEY VOCABULARY	Insects, mini-beats, habitat, micro-habitat, living, non-living, environments, characteristics, natural, ocean, forest, desert, producer, consumer predator. Materials, plastic, wood, metal, bend, squash, press, twist, stretching, Plants, ferns, cactus, flowers, water, sunlight, soil, survival, Animals, humans, sunlight, water, food, nutrients, shelter, exercise			

Subject National Curriculum LOWER KS2

- To develop own ideas and thought and using learning to form these
- To notice pattern between groups and within information
- To draw up conclusions from their: observations, testing, research and classifying
- To perform tests with thought of fair testing and predicting outcomes.
- To record data from testing accurately and fairly
- To use previous and current scientific knowledge to form answers and questions in variety of different ways: EG: written, orally and using their findings as supports

Year 3	**The Dawn of Mankind**		**Wild at Heart**		**Do Machines Dream of Electric Sheep?**
KEY QUESTIONS	**Rocks/ Living things**		**Plants/ light and shadow**		**Magnets and forces**
Identifying and classifying	Introduce new vocabulary of the three new types of rocks Sedimentary Metamorphic Igneous How many different kinds of rock are they and how are they different from each other?	That humans and some animals are made up for the following: skeletons and muscles. To help with movement, protection and support.	Identify the different aspects of a plant. EG: roots, stem/trunk, leaves and flowers	That shadows and darkness are produced when there is an absence of light	What are the two different polesf a magnet and what interaction happens when they come into contact with other poles
	Look at the World's different layers and what is in the middle	That different foods have different nutritional value and this can impact our health	Also Identify that plants can produce their own food through photosynthesis.	Identify that objects in front of the source will cause a shadow behind the given object.	Identify different items, whether they are magnetic or not.
	Where these types of rocks are found, and looking at their characteristics				

Research	ipads/laptops Introduce that fossils are made from creatures and plants dying millions of years ago, but how do they turn into fossils.	That different parts of the body have different functions. EG organ systems.	What do all plants need? Build on from previous learning: sun, water, nutrients from the soil, room to grow	Look into what happens to shadows when the source and object distance changes.	Research that some forces need contact between two objects, but magnetic forces can act at a distance.
	Ipads/laptops Get ideas from the class about what soil is. They can use previous knowledge and get some soil from outside. Then research further.	Plants can create their own food whereas humans and most animals cannot. What do they do instead.	Look at the necessities that plants need and compare this between varieties of plants. EG: seaweed and oak trees		Research into what what is produced when forces are acting.
	Have real sedimentary, Metamorphic and igneous rocks. Which is the strongest? How do we determine this? Use ipads/laptops to research further	Looking at different animals and how they are grouped into: skeleton or no skeleton.			
Pattern seeking	Looking at the properties of the layers of the Earth.	Look into the same animal but has different diets. EG: a pet dog and a wild wolf. Or a pet bird and pigeon.	Looking at the cycle with plants. Including: pollination, seed dispersal and seed formation.	Recognise that there are patterns between shadow size and formation and source and blocking objects.	Through testing: Using iron filings on a magnets and see how the filings and magnets interact with one another and record data.
				Through testing: Look into that light can be reflected of surfaces.	How items travel differently on different surfaces and what forces are being created.
Predicting and conclusions	Using previous knowledge on rocks which would you use to make a house and why.	Look at the impact of diet. A diet of X would cause…	With previous learning what animals will help with seed dispersal?	Look into the dangers of light and what do we need to protect	Create predictions and conclusions on what will happen we put two of the same poles together

				ourselves from the sun.	
	Do you think there will ever be another layer on the earth on top of the crust?	Once there is an understanding of diet. Class design their own balanced diet.			
KEY VOCABULARY	Rocks, layers, crust, mantle, inner and outer core, soil, igneous, sedimentary, metamorphic, magma. Diet, nutrients, health, skeleton, muscle, support, humans animals Plants, nutrients, sunlight, soil, roots, growth, photosynthesis, seeds, dispersal, pollination. Light shadow, opaque, transparent, reflective, sun. Magnetics, friction, forces, north pole and south pole, heat, distance, surfaces				

Year 4	**The Revolting People of Planet Earth**	**The Age of Empire**		**Tales of the Bearly Believable**	
KEY QUESTIONS	**Digestion**	**Electricity/ states of matter**		**Living things/sound**	
Research and answering	Looking at the system as a whole and individual parts and their roles (ipads and research) What does each part of the digestion system do?	Looking at the different components of circuits and how to assemble them	Looking into states of matter that are more than one. EG Water Smoke Cornflour mix	Researching unusual animals like platypuses. What do they most resemble	How are their different sounds?
	Research into what waste is What is waste?	When we use different circuits in everyday life	Looking at what can cause a state of matter to change	What do animals have to help them in their environment?	Research into how how voices are made
		Looking at the different scientific diagrams for the components of a circuit			
Identifying and classifying	Different organs within the digestions system.	Identifying what makes a series circuit	Identifying the three main states of matter and their properties	Looking at specific vocabulary and the different subclasses of vertebrates and their properties	Identify what causes sound
		Appliances that are battery powered and	Looking at the four main sections of the	Looking at specific vocabulary and the	Looking at the difference

		ones that run off the mains.	water cycle and the names for each	different subclasses of invertebrates and their properties	between volume and pitch and how they can be changed.
Testing and recording •	Class create their own digestion system What does food look like at the end of each digestion stage?	Making series and testing how to make bulbs brighter	Create our own small water cycle	Going to local areas and finding minibeasts	Using rice on drums and tuning forks to show test that sound is vibration
•	What liquid most impacts the teeth? Use eggs Testing: Water, coke, squash, juice, lemonade	Test what makes a good material for switches. Which is the best conductor	Create data on the melting point of ice and the boiling point of water.		
Predicting and conclusions •	Linked to testing – use of previous knowledge Which liquids do you think will cause the most damage to teeth and why?	Predicting which material is best for a switch before testing. Using knowledge of insulators and conductors		Before going to local area predicting what they will find and why?	Looking at different sources of sound and which will cause the loudest/ highest pitch sound.
• Using data – reasoning	Look into drawing conclusions into what causes damage to teeth and what is in the different liquids What can we tell that X has in it that causes this damage to our teeth?		Using data to draw up graphs about boiling and melting points	Understanding why they found what minibeasts they did. What was in the habitat?	
• Using data – reasoning	Lesson on moderation. Thinking about if there is a lot of sugar/fat how often should we eat it				
Pattern Seeking • Previous knowledge/ use of data	What do you notice able the amount of sugar in drinks and the damage it causes?	Between the different types of energy sources.	Using data to see if there is any correlation between water and the temperature		Is there any correlation between how hard the drum is hit and how high the rice jumps

• Data and observations	Take notes and photos during testing lesson and analyse it here. What do you notice about the consistency of food as it makes its way through the body?			Observing where the different minibeasts are in the local areas shaded or in the sun or in the soil.	Pattern between volume and strength of vibrations.
•					Pattern between pitch and the object that made the sound.
KEY VOCABULARY	Digestion, waste, organs, stomach, intestines, oesophagus, rectum, anus, energy, nutrients, nutrition, diet, health. Circuits, wires, bulbs, lamps, cells, batteries, motors, switches, generator, turbine, series and parallel circuits. Renewable energy, solar, fossil fuels, oil, coal, wind. Condensation, perspiration, evaporation, transpiration, cyclic, temperature, heat. Animals, vertebrates, invertebrates, mammals, birds, fish, reptiles, amphibians, insects, molluscs, annelids, crustaceans, anemones				

Subject National Curriculum UPPER KS2

- Deepen understanding of scientific topics, through exploring, discussions and testing.
- To create their own questions based on previous knowledge and to form insightful questions based on why are currently learning.
- To have an understanding of more abstract concepts
- To use scientific vocabulary, results observations and patterns to support answers.
- To use evidence to justify discussions and ideas.
- To draw up in depth and conclusions using previous knowledge, data, observations and patterns. Also include what would make the testing fairer next time.

Year 5	**The Great Invaders**	**Clash of the Titans**		**The Adventures of My Other Self**	
KEY QUESTIONS	**Forces**	**Space/Living things**		**Animals and humans/ Properties of materials**	
Abstract concepts – research	Looking at different forces. Gravity occurs between two objects. Friction, water resistance, and air resistance occurs between two surfaces	Research and answer the different bodies in space. What's the difference between stars, planets and moon?	Look into can plants been grown from different parts of the plant. EG: leaf, blub, petal, stem.	SRE	What properties certain household items have and why they are best suited for their jobs. EG: wooden spoon because of poor heat conduction.
	Looking where these forces occur in our world. Have they experienced any of these	Look at the different properties of planets, stars and satellites			
		Look at gravity and how things move in space.			
Pattern seeking	What do we notice about the surface area of an object and the about of resistance it produces.	Look at the relationship between the earth spinning on its axis and the 24 hour cycle	Look at patterns in life cycles. Are there an differences in animals and their cycles	SRE Looking at how long the gestation period takes in a variety of different animals.	Comparing a variety of everyday objects and the properties they have. hardness, solubility, transparency, conductivity (electrical and

					thermal), and response to magnets
	Gravity: Dropping to different objects of a similar shape fall at the velocity.	The relationship between a year and how long it takes for the earth to move around the sun	How a frog's life cycle differs from a mammal's – similarities and differences	Look into changes of matter and solutions. Some changes or irreversible and some are reversible and the processes of how they change	
		Combining these two concepts, as they occur at the same time	Similarities and differences between a plant's and animal's life cycle		
Identifying and classifying	Identifying: Pulleys, gears and levers and how they impact the effectiveness of a force.	Looking at a variety of bodies and grouping them into their different groups and reasoning their choices	The different stages of a life cycle. Especially in frogs.	SRE Stages of life and what happens later in life.	To understand the terms dissolve, soluble and insoluble
	Using photos and videos to show forces at work can the class identify them.		The different stages of a life cycle. Especially in birds.		
Testing and presenting	Creating own pulleys and levers and observing forces in action.	Class react small models on the earth moon and sun, presenting the day aa month and year. With relevant space between all three.	What life cycles occur in our local environment?	SRE	What substances are soluble and insoluble
	Testing falling objects: EG: parachutes and umbrellas. Also look at friction between objects. What is made as a result.				Does heat of the solvent impact the solubility
					To think about how to separate mixtures and the

					processes it may include.
KEY VOCABULARY	Force, gravity, resistance, air, water, surfaces, pulleys, gears, levers, velocity. Space, bodies, stars, planets, moons, satellites, gravity, orbit, force, time, year, day , axis, rotation, speed Life cycle, mammals, bird, reptiles, amphibians, plants, environment, habitat, plants				

Year 6	**The Unexplained**	**Into the Forest**		**Battles That Have Shaped Our World**	
KEY QUESTIONS	**Light**	**Circulation/living things**		**Evolution/electricity**	
Observation	Looking into that light cannot travel round corners and that it only travels in straight lines	How the heart and blood works/travels in the circulatory system	Some classifications are observable	That things change over time, but there are links to piece together ancestor	What do you notice about the brightness of a bub and the volume of the buzzer when the lamp is swapped out? (also comparing)
	Observe that we see things due to light being reflected off other items and then that light into our eyes.	Differences in what exercise does to the system and body as a whole	Some of these animals are observable in our local environment	What happens with cross breeds in dogs? What do you notice?	The conductors we are using prevents the electricity from jumping over gaps
Identifying and classifying	Identifying different light sources. EG: natural of man made	Which vessels and organs do what jobs and how are they suited.	That living things have many different classifications and that these can be further sub divided	Group together fossils and older animals to modern day ones with similarities and differences	Identify the a variety of different scientist diagrams in relation to circuits
Testing and recording	Test that light travels in straight lines and that shadows are cast because of this.	Create own circulatory system on the playground		That over time that animals have adapted	Working systematically on why a

		with chalks and the children are the blood they through the system and drop of O2 and CO2 at the relevant places.		to their surroundings as best as they can. EG: giraffes.	circuit does not work, only changing one aspect of the circuit at a time.
	Also record the sizes of the shadow when moving the object closer and further from the source.			Research into Charles Darwin and what he discovered about the birds in Galapagos islands	Using a variety of switches, buzzers, speaker and lamps to test effectiveness
Comparing	How light interacts with water. EG in rainbows and in bubbles.	The different vessels and how they are suited for their jobs	Looking at different animals and creatures and how they may be categorised by their characteristics	Compare ancestors and that parents pass down the best traits to their offspring	What do you notice about the brightness of a bulb and the volume of the buzzer when the lamp is swapped out? (also comparing)
	How things look different (bent) underwater and out of water.	How different substances impact the system and its potential long lasting impact		Investigate and compare what happened to similar animals that did not have the best traits	Comparing self-made circuits to ones we use every day. EG: circuit with buzzer and doorbell circuit at home
	Explanations of the above not needed just observations and comparison				
KEY VOCABULARY	Light, shadow, distance, reflective, opaque, translucent transparent source, natural, manmade. Circulation, blood, haemoglobin, oxygen, carbon dioxide, lungs, heart organs, vessels, veins, arteries, capillaries, diet, health, substances, drugs, muscles Living things, species, breeding, classification, kingdoms, diversity, habitat, and environment.				

	Evolution, adaption, Charles Darwin, suited, traits, ancestors, fossils, parent offspring Electricity, components, diagrams, wires, lamps, cells, batteries, speaker, buzzer, switch