Science Learning Sequence

National Curriculum	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Biology	The most relevant early years outcomes for science are taken from: Physical Development Understanding the World Expressive Arts and Design						
Animals Including Humans		-What is an animal? -What types of animal are there? -What is similar and what is different? -What does food tell us about an animal? -Which animals are busy at night? -What makes me an animal?	-Remember: what is an animal? -How do animals change as they mature? -What do all animals need to stay alive? -Do older children have bigger heads? -How can we sort this food? -Keeping healthy: why do we exercise? -Keeping healthy: why do we eat different types of food? -Summary: what do I know about animals, including humans?	-What effect does the food we eat have? -Where is my skeleton and what does it do? -Where are my muscles and what do they do? -Do our bodies affect how well we do things? -How good are we at different activities?	-What teeth do humans have? What do they do? - How do our teeth and mouth help with digestion? What's the process? - Can teeth tell us what animals eat? - What are the parts of the digestive system? - How does digestion work? What's the process? - What are food chains? How to they work? - How do I construct and interpret a food chain? - How are teeth, digestion and food chains connected?	-What is the human timeline? -How do we change into adults? -How does human and animal gestation and lifespan compare?	-What is blood made of and why do we need it? -Why do our bodies need nutrients and how are they transported? -What is our circulatory system? -What is our heart like inside? How does it work? -Who influenced what we know about our circulatory system? - Remember circulation and digestion: how are these two systems connected? - Where are the kidneys and what do they do? -What can we do to keep healthy? -Present and explain what we know about the circulatory system, nutrients and keeping healthy
Plants		-What are the parts of a plant? -What are wild plants and where do you find them? -What are garden plants and where do you find them? -What makes a tree? -What types of tree are there? -What's the difference between trees?	-How do seeds germinate and what happens? -What happens when bulbs sprout? -What do plants need to thrive and be healthy? What can happen if plants don't get the things they need? -What do I notice about plants around school? How are they healthy or unhealthy? -Show what you know	- What are the parts of a flowering plant? - Do all plants need the same things to thrive and grow? - How do leaves make food for the plant? - How does water move through a plant? - Where do new plants come from? - What do flowers do? - What is pollination? - How are seeds dispersed?			

Living Things and Their Habitats			-What is alive and what is not? -What do all living things have in common? -Where do plants and animals live? -What plants and animals live in our local environment? -What are food chains? How are they connected? -Why do plants and animals need each other?		-What are the characteristics of living things? -What animals are vertebrates? -What animals are invertebrates? -What groups are plants classified in? -What is classification? How do I use a key? -What happens if the environment in a habitat changes?	- Life cycles: what's the difference between a mammal and an amphibian? - Life cycles: what's the difference between an insect and a bird? - What is similar and what is different between the life cycle of a mammal, an insect, an amphibian and a bird? - Summer birds: who was Maria Merion and what did she do? - The science of life: how do living things reproduce? - Plants: what's the life process of reproduction?	- Who was the scientist Carl Linnaeus and what did he do? - How do we classify vertebrates? - How do we classify invertebrates we know? - How do we classify invertebrates we DON'T know? - Apply it: what animals can I classify? What animals and plants exist in my local environment? - What else is living besides plants and animals? - How can you grow your own micro-organisms?
Seasonal Changes		-What are the four seasons? -What's the weather like in Autumn, Winter, Spring and Summer? -Why does day become night?					
Evolution and Inheritance							-How have living things changed over time? -How has life on Earth changed over time? -What is DNA and what does it do? -Are all offspring identical to their parents? -Darwin and Wallace – what evidence did they share to argue the case for evolution? -Survival of the fittest – how have animals adapted and evolved to suit their environment?
Chemistry							
States of Matter					- What is matter? What does 'state' mean? - What are solids, liquids and gases? - Melting: how do materials change state? - Evaporating: how do materials change state?		

					Condensing: how do materials change state? - Where does rain come from? - Summary: how do materials change their states of matter?		
Materials		-What are materials? -What are things made of in school? -Can the same object be made from different materials? -How can I describe materials? -Which materials are waterproof and which are not? -Which materials are transparent and which are opaque? -What's the best material for the job? Why?	- Revisit materials: Remember it Apply it Prove it - What are materials used for? - What happens when we squash, bend, twist or stretch a material? - What is it made from? - What's the best absorbent material? - What is waterproofing?			-What properties do materials have? How do we use them? -What is a solution and what is a mixture? -How can we separate materials from a mixture? -How can we separate materials from a solution? -Are the changes that happen around us reversible or irreversible? -What changes are reversible? -What changes are irreversible?	
Rocks				-How are rocks formed? -What type of rocks are there? -Are all rocks as hard as one another? -Are all rocks waterproof? -How can I test a rock to identify it as limestone or chalk? -Is soil just dirt? -How are fossils formed? -Elaborate and remember rocks, soils and fossils			
Physics							
Earth and Space						-What are the planets in our solar system? -How does our view of the Moon change in a month? Why does the rotation of the Earth result in night and day? -Why is the Earth's tilt (axis) responsible for the seasons? -Show what you know – retrieve, explain and present	

Electricity					-What sort of appliances use electricity? -What sort of power makes them work? -How can we be safe with electricity? -What are the components in a simple series circuit? -What happens when a circuit is open or closed? -What can we use instead of wires? -What types of material conduct electricity? -How are electrical conductors used? -What are the effects of changing circuit components and batteries?		-What is electricity? How does it work? -What are the components in a series circuit? -What are the effects and consequences of changing circuit components and batteries?
Light				- Do we need light to see things? - What do mirrors do? - How are shadows formed? - What happens to the size of a shadow when the object moves closer to or away from the light source? - Are you safe in the sun?			- What is light and what does it do? - How does light travel? - How can you measure a shadow? - What do we know about changing shadow sizes? - What colour is light made of? - Reflection – how does light help us to see objects? - What surfaces make the best reflectors? - Why do we see objects as particular colours? - What happens to the appearance of objects when placed in water?
Forces				-What is a contact force? -How do surfaces affect the resistance of an object's movement? -How does friction affect moving objects? -What is a non-contact force? -How do magnets attract and repel objects? -Which materials are magnetic?		- How can we measure forces? - When is friction helpful and not helpful? - What's the effect of air resistance? - What's the effect of water resistance? - How do levers help us? - How do pulleys and gears help us? - Who was Galileo Galilei?	

Sound					- What do we know about sound? - What is sound? - How does sound travel? - How can we make a sound louder and quieter? - How do sounds change as we move away from the source? - What is the pitch and loudness of sound?		
Working Scientifically							
Throughout all units							