Science



At the heart of our science curriculum is the desire to build a secure knowledge of the world around us. We do this by systematically building up the students' schema of knowledge about the World. In doing so, we believe we will provide our students with a strong knowledge foundation which will equip them for their future science learning. As well as enabling them to pursue an area of science in which they are particularly interested and give them the tools to meaningfully make progress in this pursuit.

First and foremost, we have used the national curriculum to ensure we covered the core basics. We have carefully sequenced these topics such that they build well at spaced intervals to enable greater retention. As a result, in places the sequence does not follow the National Curriculum but has been designed to be age and stage appropriate. Where it enables a greater understanding of the topic, our science curriculum moves beyond the national curriculum. The terms are roughly split into biology, chemistry and physics topics to begin to set our students with an understanding of those parts of science in preparation for secondary school.

Practical investigation skills are interwoven into the content and are often built into the climax of each topic to enable students to apply the knowledge they have just gained. This also means that the core structure of a science investigation is repeated and reinforced throughout the Key Stage. The year 6 content will both review content from previous years as well as providing a brief introduction to some of the themes present in secondary science. This enables this core content to be reinforced as well as easing the transition of year 6 pupils into science at secondary school.

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	Human Body	Autumn / Animals / Winter		Everyday Materials	Spring / Plants / Summer	
Year 2	Materials	Habitats	Astronomy	Healthy Lifestyles	Plants	Biodiversity – Minibeasts
Year 3	Human Body	Light	Forces and Magnets	Rocks	Plants	Scientists and Inventors
Year 4	Classification of Plants and Animals	States of Matter	Teeth and Digestion	Electricity	Sound	Reduce, Reuse, Recycle
Year 5	Earth and Space	Living things and their habitats – How do different living things reproduce?	Forces	Animals including humans – How do we change as we grow older?	Properties and changes of materials – How do we separate materials?	Scientists and Inventors
Year 6	Living things and their habitats – How can we classify living things into specific groups?	Electricity – How can circuits vary?	Light – How do our eyes work?	Animals including humans – How does an animal's living system work together to maintain a healthy body?	Evolution and inheritance – How have living things evolved over time?	

Progression and Coverage of Key Concepts

	EYFS	1	2	3	4	5	6
Plants 	Explore the natural world making observations and drawing pictures of plants.	Plants	Plants	Plants	Classification of Plants		
Animals including Humans 	Explore the natural world making observations and drawing pictures of animals. Manage their own basic hygiene, understand the importance of healthy food choices.	Human Body Animals	Healthy Lifestyles	Human Body	Classification of Animals Teeth and Digestion	How do we change as we grow older?	How does ana animal's living system work together to maintain a healthy body?
Materials & Matter 	Understand some important processes and changes including changing states of matter.	Everyday Materials	Materials		States of Matter	Properties and changes of materials – How do we separate materials?	
Earth & Space 	Understand the seasons.	Seasons (2 Blocks)	Astronomy	Rock		Earth and Space	
Living Things and their Habitats 	Know some similarities and differences between the natural world around them and contrasting environments.		Habitats Biodiversity: Minibeasts			How do different living things reproduce?	How can we classify living things into specific groups?
Light & Sound 	Describe what they see, hear and feel.			Light	Sound		Light – How do our eyes work?
Forces and Magnets 				Forces and Magnets			
Electricity & Energy 					Electricity		Electricity – How can circuits vary?
Sustainability 					Reduce, Reuse, Recycle		Evolution and Inheritance - How have living things evolved over time?
Science and Inventors				Inge Lehmann Marie Curie George Washington Carver		Eva Crane Margaret Hamilton	

Ellistown Science Knowledge and Skills Progression

Key Concepts in Science

Plants	Animals Including Humans	Materials & Matter	Planet Earth & Space	Animals & Habitats	Light & Sound	Forces & Magnetism	Electricity & Energy	Sustainability
								

	1	2	3	4	5	6
Year 1	**Human Body** 1. What are our body parts called? 2. What are our 5 senses? 3. What did Linda Brown Buck discover? 4. Are all humans the same? 5. Who was Helen Keller and why is she significant?	**Autumn** 1. What is autumn? 2. What is the weather like in autumn? 3. What can we observe on autumn walk? **Animals** 1. What are the different types of animals? 2. What are the differences between animal groups? 3. What are the differences between mammals and birds? 4. How can we compare animals? 5. What diets do different animals eat?	**Winter** 1. What changes can we observe as autumn turns to winter? 2. How do animals adapt in winter? 3. What is the weather like in winter?	**Everyday Materials** 1. What are materials? 2. How can we describe the properties of materials? 3. What is the difference between materials and objects? 4. Which material would be best for an umbrella? 5. How can we group and sort materials?	**Spring** 1. What changes between winter and spring? 2. What weather data can we record? 3. What will we observe on a spring walk? **Plants** 1. What is a plant? 2. What are the parts of a plant called? 3. What plants grow in our local area? 4. Are trees a type of plant? 5. Can we eat plants? 6. How can we group plants?	**Summer** 1. What are the changes between spring and summer? 2. How do daylight hours change? 3. How can we compare the four seasons?
Year 2	**Materials** 1. What uses do different materials have? 2. What material uses can we observe? 3. Which properties make materials suitable or unsuitable for different purposes? 4. Can we investigate the properties of different materials? 5. How can materials be changed?	**Habitats** 1. Is it living, dead or alive? 2. What are our local habitats? 3. What habitats can we find around the world? 4. How do living things adapt to their habitat? 5. What is a food chain?	**Astronomy** 1. What is space and how do we know about it? 2. What are the planets in our solar system? 3. How does the Earth orbit and rotate? 4. What is the moon? 5. What are constellations?	**Health Lifestyles** 1. What did humans need to survive? 2. Do we all grow the same? 3. Do we need to exercise? 4. What is a healthy diet? 5. Why do we need good hygiene?	**Plants** 1. What do plants need to grow? 2. What's inside a seed? 3. What's the lifecycle of a plant? 4. What do plants need to stay healthy? 5. How do plants grow in hot, dry or cold places?	**Biodiversity – Minibeasts** 1. What minibeasts can we find in our school grounds? 2. How can we create a bee-friendly environment? 3. Why are minibeasts important and how can we help them? 4. Why are worms wonderful? 5. How can we help to protect minibeasts?
Year 3	**Human Body** 1. How does our skeleton help us? 2. Do our bones affect what we can do? 3. What do our muscles do? 4. Do all animals have the same skeleton? 5. What types of nutrition do we need?	**Light** 1. What is light? 2. What is reflected light? 3. Is the sun dangerous? 4. What is a shadow? 5. Does moving the light source change the shadow?	**Forces and Magnets** 1. What is a force? 2. How do objects move on different surfaces? 3. How do magnetic forces work? 4. Which materials are magnetic? 5. Are all magnets the same strength?	**Rocks** 1. What are rocks? 2. Are all rocks the same? 3. How are rocks formed? 4. What are the Earth's layers? 5. What are soils? 6. What are fossils?	**Plants** 1. What do plants need to grow well? 2. Do different parts of a plant have a function? 3. How do plants transport water? 4. How do plants reproduce? 5. How are seeds dispersed?	**Scientists and Inventors** • Inge Lehmann • George Washington Carver • Marie Curie

Key Concepts in Science

Plants  | Animals Including Humans  | Materials & Matter  | Planet Earth & Space  | Animals & Habitats  | Light & Sound  | Forces & Magnetism  | Electricity & Energy  | Sustainability 

	1	2	3	4	5	6
Year 4	**Classification of Plants and Animals** 1. What are the seven life processes? 2. How can we classify vertebrates? 3. How can we classify invertebrates in our local area? 4. What is a classification key? 5. How is our environment changing?	**States of Matter** 1. What are the states of matter? 2. What are the properties of gases? 3. How do materials change state? 4. How does water change state? 5. How does water evaporate? 6. What are the stages of the water cycle?	**Teeth and Digestion** 1. What causes tooth decay? 2. What are the different types of teeth? 3. What are the parts of our digestive system? 4. How does the digestion process work? 5. What is a food chain?	**Electricity** 1. Which appliances use electricity? 2. How can I make a simple circuit? 3. Will the bulb light? 4. How can we test if a material is a conductor or an insulator? 5. How do switches affect a circuit?	**Sound** 1. How are sounds made? 2. What is inside your ear? 3. How does the size of the pinnae affect the volume of sound? 4. What is pitch? 5. How can we change the volume of sounds? 6. Which material is best at muffling sound?	**Reduce, Reuse, Recycle** 1. Why do we need to worry about waste? 2. What is a carbon footprint? 3. What is water waste?
Year 5	**Earth and Space** 1. How do we know the Earth is a sphere? 2. What are the names of the planets in the solar system? 3. How long does it take the Earth (and other planets) to orbit the sun? 4. Why is there day and night? 5. How does the moon move and change?	Living things and their habitats – How do different living things reproduce? 1. How do plants reproduce? 2. What is asexual reproduction? 3. How do mammals reproduce? 4. Do all animals reproduce in the same? 5. What is a life cycle? 6. What are the stages in a life cycle of a plant?	**Forces** 1. What is Gravity? 2. What is friction? 3. How can we investigate friction? 4. What is the effect of air resistance? 5. What is the effect of water resistance? 6. What are some simple mechanisms and how can they effect forces?	**Animals including humans – How do we change as we grow older?** 1. How long are different gestation periods? 2. How do humans develop from fertilization to birth? 3. What are the main changes that occur during puberty? 4. How do we change and develop in late adulthood? 5. How do humans change throughout their life?	**Properties and changes of materials – How do we separate materials?**	**Scientists and Inventors**
Year 6	**Living things and their habitats – How can we classify living things into specific groups?** 1. How are animals classified? 2. How can we classify plants? 3. Is yeast a living microorganism? 4. What are the five main groups of microorganisms? 5. Who was Carl Linnaeus?	Electricity – How can circuits vary? 1. How do I draw a scientific diagram of a circuit? 2. How does the voltage in a circuit affect the brightness of a bulb? 3. How do I plan a fair test experiment to investigate variations in how components function? 4. How can I write a conclusion for my investigation? 5. What is renewable and non-renewable energy?	Light – How do our eyes work? 1. How does light travel? 2. Which materials make the best reflectors? 3. How does the eye work? 4. How do shadows change throughout the day? 5. Why do objects look different in water? 6. How do mirrors work?	Animals including humans – How does an animal's living system work together to maintain a healthy body? 1. What is a circulatory system? 2. How does our heart work? 3. How does exercise affact my heart rate? 4. What does the blood transport around the body? 5. How can I live a healthy lifestyle? 6. What can damage our health?	Evolution and inheritance – How have living things evolved over time?	