Hanley St Luke's Church of England Academy

Whole School Science Overview						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer2**
Reception	**What does keeping healthy mean? How can we keep healthy? How can we be safe? Ourselves, Keeping Safe and Healthy** **How does the weather change? What things change with the seasons?** **Light and Ark Firework creating explosions.** **What does nocturnal mean? Why do animals hibernate?**		**Animals and Plants, Growth & Change.** Planting seeds and Beans. Design Your Own Garden. Seasonal changes. Changing states - Freezing/Melting/Food		**Seasonal Changes and Life Cycles.** Habitats and How insects and Minibeasts help us to survive. Natural Outdoor Resources to explore. Life cycles of mini-beasts	
	Children have continual access to a range of Provision including Natural resources such as twigs, stones, blocks, loose Parts, Den Making Equipment, Digging tools in Sand areas, Painting and Creative areas, A Mud Kitchen, A light Box with resources to explore, Water and sand areas with a range of resources – bottles, containers, measuring jugs, buckets, spades, sieves… etc.					
Year 1	**Human Body** **What are the main parts of the human body? What are our five senses? How do we use them?** • Identify, name and label parts of the human body. • Smell • Sight • Taste • Touch • Sight *Focus on each sense and the part of the	**Everyday materials** **What are every day objects made from? What are the properties of wood, plastic, glass, metal, water & rock? Why are objects made of particular materials (e.g. umbrellas-waterproof.)** • Investigating materials. • Exploring properties of materials. • Testing properties of materials.	**Seasonal Changes (Spring)** **What are the four seasons? How do we know its Spring? How does the weather change? (Seasonal changes)**	**Plants and trees** **What is the basic structure of a plant? What does a plant need to grow? What are the differences between wild and garden flowers?** • Plant a sunflower. • Plant diary. • Making observations. • Basic structure of a plant.	**Animals, including humans** **What are mammals? What are fish? What are reptiles? What are amphibians? What are birds? What do animals eat? Can I sort and classify animals?** • Mammals. • Amphibians. • Fish • Birds • Reptiles • Sorting & classifying animals.	**Seasonal Changes (Summer)** **What are the four seasons? How do we know its Summer? How does the weather change? (Seasonal changes)**

	body used. Practical investigations. **Seasonal Changes (Autumn)** **What are the four seasons? How do we know its Autumn? How does the weather change? (Seasonal changes)** Autumn changes in leaves.	• Investigation. **Seasonal Changes (Winter)** **What are the four seasons? How do we know its Winter? How does the weather change? (Seasonal changes)**		• Garden and wild plants. • Deciduous & evergreen.	• What do animals eat? Carnivores, herbivores & omnivores.	
Year 2	**Animals Including Humans Habitats** **Plants and Seeds- Autumn** What are offspring? What are the basic needs of animals and humans? What is a life cycle? Matching different animals and their offspring Correctly ordering animal and human life cycles	**Animals Including Humans Habitats** **Plants and Seeds- Autumn** Identify basic needs of animals and humans Correctly order food chains Identify signs of Autumn. Find evidence of seed dispersal. Identify dead, alive, never been alive.	**Uses of everyday Materials** What purpose do different materials have according to their properties? How can the shape of materials be changed? Identify materials in the environment and their uses. Sort materials according to their properties.	**Uses of everyday Materials** Investigate which materials can change shape and how. Investigate waterproof, absorbency and flammable materials.	**Plants, Living Things and Habitats** **Keeping Healthy** **What is the life cycle of a plant?** **What do plants needs to grow successfully?** Plant beans and observe them growing over time. Plant and investigate bulbs and observe them growing over time. Create grass heads and observe growing over time.	**Plants, Living Things and Habitats** **Keeping Healthy** **How do humans keep themselves healthy?** Importance of sleep, exercise, dental hygiene, healthy food and drinks. Keeping clean.
Year 3	**Animals including humans**		**Forces and Magnets**	**Rocks** Health Education	**Plants**	**Light**

	What type and amount of nutrition does an animal including humans need to maintain a healthy lifestyle? **Can you explain the functions of a skeleton?** Types of nutrients Healthy or unhealthy? Healthy eating journal The skeleton Types of skeletons Muscles Investigating links between height and foot sizes		**How do different surfaces affect the movement of an object?** **Why do magnets repel or attract each other or materials?** Pushes and pulls Friction Scrapyard challenge- investigating materials Magnet strengths Repelling and attracting	**How is a fossil formed?** **What makes us healthy physically, emotionally and mentally?** Types of rocks Grouping rocks Fossils Mary Anning	**What do we mean by the life cycle of a plant?** **How do different elements aid a plant's growth?** Parts of a plant What do plants need to grow? The importance of water Pollination Life cycle of a plant seed Seed dispersal	**Why is light so important?** **How does time affect the length of a shadow?** What is a light source? Reflection UV rays and safety in the sun Investigation: The sun. Hero or villain? How does light make a shadow? What factors change a shadow?
Year 4	**Electricity** **What are the main components that can make up a circuit?** **What are the main energy sources used in the UK?** Electrical appliances vs Non-electrical appliances Electrical components that can be incorporated into a circuit. Symbols used by scientists to draw circuits. Investigations linked	**Sound** **How is sound made?** **How does sound travel to our ears?** **What happens once sound has entered our ear canal?** Vibrations and sound waves Pitch and volume Muffling and amplifying sounds Components of the inner ear.	**States of Matter** **What are the three states of matter?** **Which processes initiate a change in state of matter?** Properties of solids, liquids and gases. Particles of solids, liquids and gases. Examples of solids, liquids and gases. How heating and cooling initiates a change of state. Melting and boiling points.	**Living Things and their Habitats** **British Science Week** **What are the seven life processes that define something as alive?** **What must a habitat provide for the animals that live there?** Life processes including movement, respiration, sensitivity, growth, reproduction, excretion and nutrition.	**Animals, including Humans** **What parts of the body make up the human digestive system?** **Why is dental hygiene important?** **What is a food chain?** Parts of the digestive system (mouth, oesophagus, stomach, small and large intestines, anus) and the functions of each. Comparison of digestive systems (human, cow and bird) Tooth decay and dental hygiene. Balanced diet and active lifestyle. Food chains including producer, consumer and predator and prey.	

	to conductors and insulators.		Stages of the water cycle. Investigating change of state using chocolate.	Classification of animals (mammals, fish, reptiles, amphibians and birds) Vertebrates and Invertebrates. Classification keys.		
Year 5	**Earth and space** **How do the Earth and Moon move in relation to the Sun? Why do we have day and night?** Order the planets from the Sun, describe the Earth's movement around the Sun and the moon's around the Earth and Sun and the rotation of the Earth.	**Forces** **What is the effect of gravity on a falling object on Earth? What are the effects of air resistance, water resistance and friction that act between moving surfaces?**	**Properties and changes of materials** **How do reversible and irreversible changes differ?** **How would you test to select an everyday material for a particular purpose?**		**Health Education SRE**	**Living Things and Their Habitats** **What are the differences in the life cycles of a mammal, an amphibian, an insect and a bird? What is the life process of reproduction in flowering plants, butterflies and frogs?**
Year 6	**Living Things and Their Habitats** **How are living things organised into groups and classified? What are microorganisms?** Classification using common observable characteristics Identifying living things in our nature area	**Animals, including humans** **What is the circulatory system and what does it do? How do diet, exercise, drugs and lifestyle impact on the way our bodies function?** Organs, vessels and function of the circulatory system	**Evolution and Inheritance** **What can we learn from fossils? Who was Mary Anning?** Fossilisation and the fossil record Science giants – Evolutionary scientists – Charles Darwin and Mary Anning	**Electricity** **What do the circuit symbols represent? How does voltage affect the function of a bulb or buzzer?** Working safely with electricity The history of electricity Circuit symbols and the series circuit Investigating circuits	**Light** **How does light travel? How do we see objects? Why does an object cast a shadow like this?** Light sources and light to see an object Practical exploration of light and how light travels Light Maze – Open-ended investigation Periscope function and use Shadow formation and changing shadows – exploration of different materials, size and shape	

	Creating a classification key Plants, animals and microorganisms Helpful and harmful microorganisms Investigating mouldy bread	Blood composition and function Modelling blood Pulse investigation Diet and lifestyle	Plant and animal parents and offspring Inherited and acquired characteristics Adaptation – cactus, polar bear and camel Moth – An evolution story Modelling natural selection	'What happens if…?' Changing components and altering voltage	