Holyoakes Field First School Curriculum Coverage Map

Subject: Science	AUTUMN Me, myself and I		SPRING Once upon a time...		SUMMER My world and yours	
Values	RESPECT	FREEDOM	COURAGE	HONESTY	RESPONSIBILITY	HOPE
Nursery	**Developing enquiry skills** (see characteristics of effective learning)	Talk about our families and begin to make sense of our own life story and family history.	**Materials** Explore how different materials work when we build our own houses	**Living things and their habitats** Observational drawings	**Animals including humans** The life cycle of a butterfly and show care and concern for living things. **Minibeasts** – see separate plan	**Plants** Plant seeds and care for the plants as they grow
	Seasons and Changing states of matter – children to be given the opportunity to talk about and observe the changes during the seasons throughout the year					
Reception	**Developing enquiry skills** (see characteristics of effective learning)	Looking after our body- sleep, brush teeth, fruit, milk and vegetables at snack time	**Materials** Naming and using a variety of materials for different purposes	**Living things and their habitats** Observational drawings	**Animals including humans** The life cycle of a butterfly and show care and concern for living things. **Minibeasts** – see separate plan	**Plants** Growing and changing in the garden.
	Seasons and Changing states of matter– children to be given the opportunity to talk about and observe the changes during the seasons throughout the year					
Year 1						
Key Question	What does working scientifically mean?	What is a human?	What are the properties of different materials?	What types of plants are there?	What changes during each of the seasons?	How are animals different from each other?
Scientist		Leonardo Da Vinci	Becky Shroeder	Carl Linnaeus	June Bacon-Bercey	Maria Sibylla Merian
	Working scientifically -Ask simple questions when prompted and suggest ways of answering a question -Make relevant observations using simple equipment -Conduct simple tests, with support	**Animals including humans** -Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with ach sense. -Identify and name a variety of common animals (fish, amphibians,	. **Materials** - Distinguish between an object and the material from which it is made -Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	**Plants** -Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	**Seasonal changes** -Observe the changes across the four seasons -Observe and describe weather associated with the seasons and day length	**Animals including humans** -Identify and name a variety of common animals that are carnivores, herbivores and omnivores -Describe and compare the structure of a variety of common animals (fish,

	-Identify and classify with guidance -Gather and record data -Use their observations and ideas to suggest answers to questions.	reptiles, birds and mammals) **Minibeasts** – see separate plan	-Describe the simple physical properties of a variety of everyday materials -Compare and group together a variety of everyday materials on the basis of their simple physical properties			amphibians, reptiles, birds and mammals including pets)
	Seasons – children to be given the opportunity to talk about and observe the changes during the seasons throughout the year					
Year 2						
Key Question	How can I carry out an investigation?	What are human basic needs?	Why is it important to know the properties of different materials?	What does a plant need?	What is a habitat?	
Scientist		Florence Nightingale	Charles Macintosh	Joseph Banks	Daewood Qureshi	
	Working scientifically -Ask simple questions -Recognise that questions can be answered in different ways -Observe closely, using simple equipment -Perform simple tests -Identify and classify -Record and communicate their findings in a range of ways and begin to use simple scientific language -Gather and record data to help answer questions -Use their observations and ideas to suggest answers to simple questions	**Animals including humans** -Notice that animals, including humans, have offspring which grow into adults -Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) -Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene **Minibeasts** – see separate plan	**Materials** -Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses -Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	**Plants** -Observe and describe how seeds and bulbs grow into mature plants -Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	**Living things and their habitats** - Explore and compare the differences between things that are living, dead, and things that have never been alive -Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other -Identify and name a variety of plants and animals in their habitats, including microhabitats -Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food	

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Year 3						
Key Question	How can I ensure my investigation is fair?	How do humans survive?	What is a rock and how many types are there?	What are the different functions of the parts plant?	How could you describe; light, dark and shadow?	What is a magnet?
Scientist		Wilhelm Roentgen	James Hutton/Mary Anning	David Attenborough	Percy Shaw	William Gilbert
	Working scientifically -Ask relevant questions when prompted -Use different types of scientific enquiry to answer them. -Set up simple and practical enquiries, comparative and fair tests with some support. -Make systematic and careful observations, using simple equipment -Use standard units when taking measurements With modelling and guidance, gather, record, classify and present data in a variety of ways to help to answer questions With prompting, use various ways of recording, grouping and displaying evidence and suggest how findings may be tabulated -With prompting, suggest conclusions from enquiries -Suggest how findings could be reported -Suggest possible improvements or further questions to investigate	**Animals including humans** -Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat -Identify that humans and some other animals have skeletons and muscles for support, protection and movement **Minibeasts** – see separate plan	**Rocks** -Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties -Describe in simple terms how fossils are formed when things that have lived are trapped within rock -Recognise that soils are made from rocks and organic matter	**Plants** -Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers -Explore 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 -Investigate the way in which water is transported within plants -Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	**Light** -Recognise that they need light in order to see things and that dark is the absence of light -Notice that light is reflected from surfaces -Recognise that light from the sun can be dangerous and that there are ways to protect their eyes -Recognise that shadows are formed when the light from a light source is blocked by an opaque object -Find patterns in the way that the size of shadows change	**Forces and magnets** -Compare how things move on different surfaces -Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance -Observe how magnets attract or repel each other and attract some materials and not others -Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials -Describe magnets as having 2 poles -Predict whether 2 magnets will attract or repel each other, depending on which poles are facing

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Year 4						
Key Question	What are the key elements of a successful investigation?	What is a digestive system and how does it work?	What is the difference between solids, liquids and gases?	How does an electric circuit work?	What is sound and how can it be altered?	Why is an animal's habitat/environment so important?
Scientist		Paul Sharpe	Joseph Priestley	Thomas Edison	Isaac Newton	Rachel Carson
	Working scientifically -Ask relevant questions. -Use different types of scientific enquiries to answer their questions -Set up simple and practical enquiries, comparative and fair tests -Make systematic and careful observations using a range of equipment, including thermometers and data loggers -Take accurate measurements using standard units, where appropriate -Gather, record, classify and present data in a variety of ways to help to answer questions -Record findings using simple scientific language, drawings and labelled diagrams -Record findings using keys, bar charts, and tables -Report on findings from enquiries, including oral and written explanations, of results and conclusions	**Animals including humans** -Describe the simple functions of the basic parts of the digestive system in humans -Identify the different types of teeth in humans and their simple functions construct and interpret a variety of food chains, identifying producers, predators and prey **Minibeasts** – see separate plan	**States of matter** -Compare and group materials together, according to whether they are solids, liquids or gases -Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) -Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	**Electricity** -Identify common appliances that run on electricity -Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers -Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery -Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit -Recognise some common conductors and insulators, and associate metals with being good conductors	**Sound** -Identify how sounds are made, associating some of them with something vibrating -Recognise that vibrations from sounds travel through a medium to the ear -Find patterns between the pitch of a sound and features of the object that produced it -Find patterns between the volume of a sound and the strength of the vibrations that produced it -Recognise that sounds get fainter as the distance from the sound source increases	**Living things and their habitats** -Recognise that living things can be grouped in a variety of ways -Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment -Recognise that environments can change and that this can sometimes pose dangers to living things

	-Report on findings from enquiries using displays or presentations -Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings -Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions					

Rationale

The Science Curriculum aims to give all children a strong understanding of the world around them, whilst acquiring specific skills and knowledge to help them to think scientifically, gain an understanding of scientific processes and also acquire an understanding of the uses and implications of Science, today and for the future. In order to help the children achieve this, the Curriculum builds on the children's existing knowledge, as well as adding new concepts and ideas. The over-arching themes help to ensure the children are building upon their knowledge and skills at the correct time throughout the year, this will ensure the children leave Holyoakes Field First School with the skills needed to both ask and answer questions about the world and see how these can impact their future. Each topic covered will see the children exploring a Scientist and looking at how they have influenced our world and how we live.

Me, myself and I (Working scientifically, Animals including humans) **Values:** Respect, Freedom

Within this theme the children will be developing a strong sense of self and belonging to the world.

Working Scientifically will explore the children's own ideas and concepts within Science and will further develop their ability to question why and how things happen. This will show them how they have the power to explore ideas and concepts in many different ways, which in turn will influence how they question things and how these ideas relate to them. Children must develop their respect both for themselves and then others, this will be further explored when covering; Animals including humans. The children will look at their own body parts, how they grow from babies, to children,

to adults and then further down the line they will explore the human body in more detail; by looking at the skeleton and digestive system. This will also see the children explore what a human is and what characteristics we have as a mammal.

<u>Once upon a time…</u> (Materials, Plants, Electricity) <u>Values:</u> Responsibility, Honesty

<u>Within this theme the children will be encouraged to focus on others and what impact they have had on the world. This will help to spur on the imagination and ambition of the children and encourage them to 'think big'.</u>

Science Week opens the children's minds to endless possibilities as it sees them exploring a wide range of Scientists and how their work has impacted the world we live in. This fits with our over-arching topic as it allows the children to understand how their ideas and creativity can be developed into real life ideas and how these can impact others. Through the children's exploration of materials, they are exploring how things are made and what their beginnings are. The progression of knowledge within 'plants' allows the children to see how a plant starts its journey from a seed and examining it through its life cycle. Within the topic of 'electricity' the children will be examining the beginning of an invention and seeing how it has been built upon and progressed over the years.

<u>My world and yours</u> (Seasons, Living things and their habitats, Light, Sound, Forces) <u>Values</u>: Courage, Hope

<u>Within this theme the children will be examining their place and role in the world, both now and in the future.</u>

In exploring 'Living things and their habitats' and 'seasons' the children will be looking into the world around them and how the world changes throughout the year and how different places house a range of animals within a variety of habitats. The children begin by learning about different animals and how they are grouped, they then move onto more complex ideas such as food chains and micro-habitats. 'Light', 'Sound' and 'Forces' will further cement the children's ideas on the world around them and how more complex theories work.