



# Ings Farm Primary Long Term Plan

## Science

### 2019-2020

<b>Skills &amp; Processes</b> <b>KS1</b> <b>KS2</b>	<b>1</b>	Asking simple questions Asking relevant questions (Y3,4)		
	<b>2</b>	Observing closely using simple equipment Setting up simple practical enquiries, comparative and fair tests (Y3,4) Planning enquiries, including recognising and controlling variables where necessary (Y5,6)		
	<b>3</b>	Performing simple tests Making systematic and careful observations, taking accurate measurements using standard units using a range of equipment (take repeated readings where appropriate, Y5, 6)		
	<b>4</b>	Identifying and classifying Gathering, recording, classifying and presenting data in a variety of ways		
	<b>5</b>	Using their observations and ideas to suggest answers to questions Record findings using simple scientific language, drawings, diagrams, keys, bar charts and tables (Classification keys, scatter, bar and line graphs Y5,6)		
	<b>6</b>	Gathering and recording data to help in answering questions Y2 Reporting on findings from enquiries – oral and written explanations, displays or presentation of results and conclusions (explanations involving causal relationships Y5, 6).		
	<b>7</b>	Using results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests (Y3,4) Using test results to make predictions to set up further comparative and fair tests (Y5,6)		
	<b>8</b>	Identifying differences, similarities or changes related to simple scientific ideas and processes (Y3,4) Using simple models to describe scientific ideas (Y5,6)		
	<b>9</b>	Using straightforward scientific evidence to answer questions or to support their findings (Y3,4) Identifying scientific evidence that has been used to support or refute ideas or arguments (Y5,6)		

**Skills & Processes involved - Indicate by term or C for continuous**

	Show interest in the lives of people who are close to them. Know some of the things that make them unique.	Look closely at similarities and differences.	vary from one another.	differences in relation to living things. Observe animals and explain why different things occur. Talk about features of their own immediate environment.	Know that some children don't always enjoy the same things. Know about similarities and differences. Know the reasons why people's lives were different in the past. Understand that people have different beliefs. Become familiar with basic scientific concepts.	materials, living things. Talk about features of their own immediate environment. Talk about past and present events. Know that the environment and living things are influences by living things. Describe actions people do to maintain the area they live in.				
Year 1	<p><u><b>Plants and Seasonal changes (On-going throughout the year in each term)</b></u></p> <p>Identify and name common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees (leaves, flowers, petals, fruit, roots, bulb, seed, trunk, branches, stem)</p> <p>Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.</p>	<p><u><b>Animals, including humans (started)</b></u></p> <p>Identify and name a variety of animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Describe and compare the structure of a variety of common animals.</p> <p>Identify, name, draw and label the basic parts of the human body and say which part is associated with which sense.</p>	<p><u><b>Everyday materials</b></u></p> <p>Distinguish between an object and the material from which it is made.</p> <p>Identify and name everyday materials (wood, plastic, glass, metal, water and rock)</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of the simple physical properties.</p>	<p><u><b>Animals, including humans (completed)</b></u></p> <p>Identify and name a variety of animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p>	<p><u><b>Plants and Seasonal changes</b></u></p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees (leaves, flowers, petals, fruit, roots, bulb, seed, trunk, branches, stem)</p>	C	C	T2	C	C

	<u>Living things and their Habitats</u>	<u>Animals, including humans</u>	<u>Use of everyday materials</u>	<u>Plants</u> <u>(Plants observed in natural habitat throughout the year)</u>	<u>Animals, including humans</u>					
Year 2	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 micro-habitats.  Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name the different sources of food.	Find out about and describe the basic needs of animals, including humans, for survival (water, food, air)  Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	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.	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.	Notice that animals, including humans, have offspring which grow into adults.	C	C	T2 T3	C	C
Year 3	<u>Rocks</u>  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.	<u>Animals including Humans</u>  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.	<u>Forces and Magnets</u>  Compare how things move on different surfaces.  Notice that some forces need contact between two objects, but magnetic forces can act at a distance.	<u>Plants</u>  Identify and describe the functions of different parts of flowering plants. (roots, stem, leaves and flower).  Explore the requirements of plants for life and growth	<u>Light</u>  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.	C	T2 T3	T2 T3	C	C
									T2 T3	T1 T3

			<p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>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.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>	<p>(air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.</p> <p>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when light from a light source is blocked by a solid object.</p> <p>Find patterns in the way that the size of shadows change.</p>									
Year 4	<p><u>Animals including humans</u></p> <p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p><u>Electricity</u></p> <p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>Identify whether or not a lamp will light in a simple series circuit, based on whether or not a lamp is part of a complete loop with a battery.</p>	<p><u>Sound</u></p> <p>Identify how sounds are made, associating them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the</p>	<p><u>States of matter</u></p> <p>Compare and group materials according to whether they are solids, liquids or gases.</p> <p>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.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of</p>	<p><u>Living things and their habitats (Ongoing throughout the year)</u></p> <p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>		C	C	T2	T3	C	C	T1	T2	C

		<p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p>strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p>	<p>evaporation with temperature.</p>											
Year 5		<p><b><u>Properties and changes of materials</u></b></p> <p>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid and bicarbonate of soda.</p>	<p><b><u>Earth and space</u></b></p> <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>Describe the movement of the moon relative to the earth.</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	<p><b><u>Forces</u></b></p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	<p><b><u>Living things and their habitats</u></b></p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p><b><u>Animals, including humans</u></b></p> <p>Describe the changes as humans develop to old age.</p>		-	C	T1 T3	C	C	C	T2 T3	C
Year 6		<p><b><u>Living things and their habitats</u></b></p> <p>Describe how living things are classified</p>	<p><b><u>Evolution and inheritance</u></b></p> <p>Recognise that living things have changed</p>	<p><b><u>Light</u></b></p> <p>Recognise that light appears to travel in straight lines.</p>	<p><b><u>Electricity</u></b></p> <p>Associate the brightness of a lamp or volume of a buzzer</p>	<p><b><u>Animals including humans</u></b></p> <p>Identify and name the main parts of</p>		-	C	C	C	T2	C	C	T2

	<p>into broad groups according to common observable characteristics and based on similarities and difference, including micro-organisms, plants and animals.</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>	<p>over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	<p>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</p> <p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>		<p>with the number and voltage of cells used in the circuit.</p> <p>Compare and give reasons for the variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p>	<p>the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe ways in which nutrients and water are transported within animals, including humans</p>							
Whole School				Science Week		Living Eggs/Incredible Eggs.							