



HUBY CE PRIMARY SCHOOL

Vision Statement

In science, we will inspire our children by giving them the opportunities to explore and investigate whilst being expertly led. Children will be encouraged to ask questions, take risks, experiment, reflect, make and learn from mistakes, in an organised and safe environment; whereby they learn and apply skills which will equip them for an ever-changing world.

Science Essential Knowledge

Reception Essential Knowledge	Year 1 Essential Knowledge	Year 2 Essential Knowledge	Year 3 and 4 Essential Knowledge	Year 5 and 6 Essential Knowledge
Component 1: Working Scientifically				
Learn new vocabulary. Ask questions to find out more and to check what has been said to them. Articulate their ideas in well-	Identify and classify. Use observations and ideas to suggest answers to questions. Gather and record data to help answer questions.	Identify, group and classify. Use observations and ideas to suggest answers to questions noticing similarities, differences and patterns.	- Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple, practical enquiries, comparative and fair tests.	Identify scientific evidence that has been used to support or refute ideas and arguments Describe and evaluate scientific ideas related to NC topics including ideas

<p>formed sentences.</p> <p>Describe events in some detail.</p> <p>Use talk to work out problems and organize thinking and activities. Explain how things work and how they might happen.</p> <p>Use new vocabulary in different contexts.</p>		<p>Gather and record data to help answer questions.</p>	<p>Make careful observations, take accurate measurements, use a range of equipment including thermometers</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Report on findings and use results to draw simple conclusions, make predictions, suggest improvements and raise further questions</p> <p>Identify similarities, differences or changes related to simple scientific ideas and processes</p> <p>Use straightforward scientific evidence to answer questions or support findings</p>	<p>that have changed over time.</p> <p>Groups and classify things and recognise patterns</p> <p>Find things out using a wide range of secondary sources of information. Use scientific language and ideas from NC to explain, evaluate and communicate methods and findings</p>
--	--	---	---	---

Component 2: Animals Including Humans

Component 2: Animals Including Humans				
<p>Names of at least 3 animals that would be found in Yorkshire</p> <p>Some animals eat plants and some animals eat other animals</p> <p>Humans have senses</p> <p>Identify, name, draw the basic parts of the human body which are associated with the senses</p> <p>We look after our bodies in different ways – staying clean, drinking water, eating our meals.</p> <p>Babies grow into adults</p>	<p>Group animals according to what they eat</p> <p>Identify and name a variety of common animals that are carnivores, omnivores and herbivores</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>Identify, name and draw and label the basic parts of the human body and say which parts of the body are associated with each sense</p>	<p>Understand that animals, including humans have offspring which grow into adults</p> <p>Describe the basic needs of animals including humans, for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene</p>	<p>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</p> <p>Describe the simple functions of the basic parts of the digestive system</p> <p>Identify different teeth types and know their simple function</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p>Construct and interpret food chains identifying producers, predators and prey</p>	<p>Describe the changes a humans develop to old age</p> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Recognize the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Describe the way in which nutrients and water are transported within animals including humans</p>

Component 3: Materials/States of Matter

<p>Objects are made from different materials</p> <p>Objects can feel different and can be described as hard, rough, soft, smooth</p> <p>Explore the natural world around them</p>	<p>Distinguish between an object and the material from which it is made</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock</p> <p>Describe the simple physical properties of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</p>	<p>Identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, cardboard and paper for particular uses</p> <p>Describe how the shapes of solid objects are made from some materials and can be changed by squashing, bending, twisting and stretching</p>	<p>Compare and group materials together</p> <p>Observe that some materials change state when they are heated or cooled</p> <p>Measure temperature</p> <p>Identify the part played by evaporation in the water cycle and associate the rate of evaporate with temperature</p>	<p>Compare and group together every day materials on the basis of their properties, including hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</p> <p>Recognise that some materials will dissolve in a liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gasses a=to describe how mixtures might be separated including through filtering, sieving and evaporating</p> <p>Give reasons based on evidence from comparative and fair test for the particular uses of every day materials including metals, woods and plastics</p>
---	---	---	--	--

Component 5: Living things and their habitats

<p>Explore the natural world around them making observations and drawing pictures of animals and plants</p> <p>Recognise that some environments are different to the ones in which they live</p> <p>Explore the natural world around them</p>		<p>Explore and compare differences between things that are living, dead and things that have never been alive</p> <p>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</p> <p>Identify and name a variety of plants and animals in their habitats including micro-habitats</p> <p>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</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 living things in their environment</p> <p>Recognise that environments can change and this can sometimes pose dangers and have an impact on living things</p>	<p>Describe differences in the lifecycle of a mammal, an amphibian, an insect and bird</p> <p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</p> <p>Give reasons for classifying plants and animals based on specific characteristics</p> <p>Describe the life processes of reproduction in some plants and animals</p>
---	--	--	--	--

Component 6: Seasonal Changes

	<p>Weather changes throughout the year</p> <p>Observe changes across the seasons</p> <p>This changes your day to day life (warm, cold, hot, wet windy)</p> <p>Observe and describe weather associated with seasons</p> <p>Understanding the effect of changing seasons on the natural world around them</p>			
Component 7: Forces and Magnets				
			<p>Compare how different things move on different surfaces</p> <p>Notice that some forces need contact between two objects, but magnetic forces act at a distance</p> <p>Observe how magnets attract or repel each other</p>	<p>Explain that unsupported objects fall towards the Earth because of the 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>and attract some minerals but 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>Recognise that some mechanisms including levers, pulleys and gears, allow a smaller force to have greater effect</p>
Component 8: Light				
			<p>Recognise that we need light in order to see things and that dark is the absence of light</p> <p>Notice that light is reflected from surfaces</p> <p>Recognise that light from the sun can be dangerous</p>	<p>Recognise that light appears to travel in straight lines</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 our eye</p>

			<p>and that there are ways to protect our eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object</p> <p>Find patterns in the way the size of shadows change</p>	<p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then our eyes</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the object that cast them</p>
Component 9: Rocks				
Explore the natural world around them			<p>Compare and group together different kinds of rocks based on their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter</p>	

Component 10: Earth and Space				
				<ul style="list-style-type: none">-Describe the movement of the Earth, and other planets, relative to the sun in the solar system - Describe the movement of the Moon relative to the Earth -Describe the Sun, Earth and Moon as approximately spherical bodies -Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky

Component 11: Electricity				
			<p>Construct a simple series electrical circuit and name the main parts</p> <p>Identify whether or not a bulb will light in a simple circuit</p> <p>Recognise that a switch opens and closes a circuit</p> <p>Recognise some common conductors</p>	<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>Compare and give reasons for variations in home components function, including the brightness of the bulbs, the loudness of the buzzers and on/off position of switches</p> <p>Use recognised symbols when representing a simple circuit diagram</p>
Component 12: Evolution and Inheritance				
				<p>-Recognise that living things have changed 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</p>

				<p>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>
Component 13: Sound				
			<p>Identify how sounds are Made</p> <p>-Recognise vibrations travel</p> <p>-Find patterns between pitch of a sound and features of the object that produced it</p> <p>-Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>-Recognise that sounds get fainter as the distance from the sound source increases</p>	