



Bollington St John's CE  
Primary School

**Bollington St John's Curriculum  
Science- IPC Progression Document**

<u>EYFS</u>	<u>Milepost 1</u>	<u>Milepost 2</u>	<u>Milepost 3</u>
Learning Strand 3: Enquiring about People and the World: People	1.01 Know that scientific enquiry involves asking questions, collecting evidence through observation and measurement	2.01 a) Be able to carry out simple investigations b) Be able to prepare a simple investigation which is fair, with one changing factor	3.01 Know that the study of science is concerned with investigating and understanding the animate and inanimate world around them
3.3b Exploring changes in people at different ages	1.02 Be able to pose simple scientific questions 1.03 Be able to identify ways of finding out about scientific issues	c) Be able to predict the outcome of investigations d) Be able to use simple scientific equipment	3.02 a) Be able to conduct scientific investigations posing scientific questions b) Be able to choose an appropriate way to investigate a scientific issue
3.1b Using the senses to make discoveries	1.04 Be able, with help, to conduct simple investigations	e) Be able to test ideas using evidence from observation and measurement	c) Be able to make systematic and accurate measurements from their observations
3.2b Exploring physical features	1.05 Be able, with help, to gather information from simple texts	f) Be able to link evidence to broader scientific knowledge and understanding	d) Be able to explain and justify their predictions, investigations, findings and conclusions
3.4b Exploring what lies beneath our skin	1.06 Know about the basic conditions needed for living things to survive	g) Be able to use evidence to draw conclusions	e) be able to record and communicate their findings accurately using the most appropriate medium and the appropriate scientific vocabulary and conventions
Learning Strand 3: Enquiring about People and The World: The World	1.07 Know about the differences between living things and things that have never been alive	2.02 Be able to gather information from simple texts	3.03 Be able to gather evidence from a variety of sources
3.7b Asking questions, experimenting with ideas and finding out about the wider world	1.08 Know that living things grow and reproduce	2.03 Understand the importance of collecting scientific evidence	3.04 Be able to discriminate between evidence and opinion
3.15b Exploring significant features of the wider world including oceans, deserts, mountains and forests	1.09 Know that the features of the school environment affect the types of living things found there	2.04 Understand some of the effects of what they learn on people's lives	3.05 Understand the importance of using evidence to test scientific ideas
3.14b Classifying living and non living things	1.10 Be able to sort living things into simple groups	2.05 Know the differences between living and non-living things	3.06 Understand some of the effects of what they learn on people's lives
3.10b Exploring energy sources, light, sound, forces and motion	1.11 Be able to recognise living things in the school environment	2.06 Know about processes and conditions that have an effect on living things	3.07 Know about the major classifications of living things
3.23b Safely observing growth and decay	1.12 Understand that different locations support different living things	2.07 Know about the principles of nutrition, growth, movement and reproduction	3.08 Know about the effects of food chains in a variety of environments
	1.13 Know the names of the main external body parts of humans and animals	2.08 Know about the living things that are supported by different environments	
		2.09 Know about ways in which animals and	

3.22b How to look after natural resources and have a proactive attitude towards sustainability	1.14 Know the names and characteristics of a range of animals	2.10 Know about the frequently occurring animals and plants that are supported by the environment around the school	3.09 Know that changes in the environment have effects on living things
3.11b Classifying and comparing objects in the natural world	1.15 Know about the importance of exercise and healthy eating	2.11 Know about food chains in local environment	3.10 Know about the nature, functions and effects of micro-organisms
3.8b Selecting materials to carry out simple investigations	1.16 Know about the role of drugs as medicines	2.12 Understand the principles of protecting living things	3.11 Be able to recognise and name the major plants and animals in the host country
3.9b Exploring how solids and liquids can change	1.17 Know about the senses	2.13 Know about the function and care of teeth in humans and other animals	3.12 Be able to classify locally occurring plants and animals according to their features
3.12b Classifying and comparing natural and man-made materials	1.18 Be able to recognise similarities and differences between themselves and other people	2.14 Know about the functions and actions of the heart in humans and other animals	3.13 Be able to recognise and name the major plants and animals in their home country
3.13b Exploring the effects of weather and seasons	1.19 Understand how to treat animals with care and sensitivity	2.15 Know about the functions of skeletons and muscles in humans and in some other animals	3.14 Understand the relationship between living things and the environment in which they live
3.16b Planning investigations involving nature; researching, making predictions and drawing conclusions	1.20 Know the names of the parts of plants	2.16 Know about the main stages of the human life cycle	3.15 Know about the structure of the human body
3.17b Exploring Earth and space	1.21 Know that seeds grow into plants	2.17 Know about the effect of exercise on the human body	3.16 Know the functions of the major internal and external parts of the human body
3.18b Representing the environment through maps, plans, drawings, photographs and diagrams	1.22 Know that plants need light to grow	2.18 Know about the effects that tobacco and alcohol have on the human body	3.17 Know about similarities and differences between humans and other creatures
3.19b Exploring wildlife habitats	1.23 Know that plants need water to grow	2.19 Know about the effect of diet on the human body	3.18 Know about the effect of exercise on the human pulse rate
3.20b Exploring the needs of wildlife, domestic animals, birds, sealife, insects and other life forms that are of interest	1.24 Know the names and properties of a range of materials	2.20 Be able to classify animals according to their features	3.19 Know about the effect of drug misuse on the human body
3.21b Exploring the needs of growing things	1.25 Know about the uses of different materials	2.21 Know about the effects that light, air, water and temperature have on plants	3.20 Know about the ways in which humans and other animals reproduce
3.24b Exploring evidence and artefacts that inform us about life long ago	1.26 Know what happens when various materials are squashed, bent, twisted, stretched, heated or cooled	2.22 Know about the functions of leaves	3.21 Know that some characteristics of humans and other animals are inherited from their parents
	1.27 Be able to describe similarities and differences between materials	2.23 Know about the life cycle of plants	3.22 Know that some characteristics of humans are influenced by their environment
	1.28 Be able to sort materials into groups according to their properties	2.24 Be able to classify plants according to their features	3.23 Understand the importance of an appropriate diet for the health of humans and other animals
	1.29 Understand that the uses to which materials are put depend on their properties	2.25 Know that some materials conduct electricity	3.24 Know that some characteristics of plants are inherited from their parents
	1.30 Know about everyday appliances that use electricity	2.26 Know that some materials conduct heat more effectively than others	3.25 Know about the functions of the major parts of a plant
	1.31 Know how simple electrical circuits operate and the effects they have on different devices	2.27 Know that temperature is a measure of heat	3.26 Know about factors that affect the growth of plants
	1.32 Know the function of a switch in an electrical circuit	2.28 Know that some changes in materials are reversible and others are irreversible	3.27 Know about the function of roots in anchoring and feeding plants
	1.33 Know how a range of forces, including pushes and pulls, can move objects	2.29 Know about the changes that occur when materials are mixed	3.28 Know about ways in which plants reproduce
	1.34 Know that darkness is the absence of light	2.30 Know that some substances dissolve in water and others do not	3.29 Know about the effects of seed dispersal
	1.35 Know that sounds travels from sources	2.31 Be able to compare common materials and objects according to their properties	3.30 Know about the conditions needed for germination
	1.36 Know that sounds are heard when they enter the ear	2.32 Be able to distinguish between solids,	
	1.37 Understand that sound and light come from a variety of sources		
	1.38 Be able to describe the actions that result in changes in light, sound or movement		

		<p>liquids and gases</p> <p>2.33 Be able to separate insoluble solids from liquids by filtering</p> <p>2.34 Understand that different materials are suited for different purposes</p> <p>2.35 Know about the principles of magnets and magnetic and non-magnetic materials</p> <p>2.36 Be able to construct simple electrical circuits to make devices work</p> <p>2.37 Be able to change the type or number of components in a circuit to have a different effect</p> <p>2.38 Know that forces can have direction</p> <p>2.39 Know that forces differ in size</p> <p>2.40 Know about the effects of friction</p> <p>2.41 Know that light travels from a source</p> <p>2.42 Know that objects form shadows when they block the passage of light from a source</p> <p>2.43 Know that sounds are made when objects vibrate</p> <p>2.44 Be able to create sounds with a variety of objects</p> <p>2.45 Be able to change sounds by altering variables</p> <p>2.46 Know that the sun, Earth and moon are approximately spherical</p> <p>2.47 Know that the position of the sun appears to change during the course of the day and that shadows change as a result</p>	<p>3.31 Know about distinctive properties of different materials</p> <p>3.32 Know about the principles of materials acting as thermal insulators</p> <p>3.33 Know what happens when materials are heated and cooled</p> <p>3.34 Know about the principles of condensation and evaporation</p> <p>3.35 Know about differences between metals and other materials</p> <p>3.36 Know that matter is made up of particles</p> <p>3.37 Know about the different arrangements of particles in solids, liquids and gases</p> <p>3.38 Be able to compare and group rocks and soils according to their properties</p> <p>3.39 Be able to group and classify materials according to their properties</p> <p>3.40 Be able to identify changes that are reversible and irreversible</p> <p>3.41 Be able to separate simple mixtures</p> <p>3.42 Be able to recover dissolved solids through evaporation</p> <p>3.43 Know that heat is often produced as a by-product when one form of energy is converted to another</p> <p>3.44 Know that heat can move from one object to another by conduction</p> <p>3.45 Be able to represent electrical circuits in drawings using conventional symbols</p> <p>3.46 Be able to construct circuits on the basis of drawings using conventional symbols</p> <p>3.47 Be able to vary an electrical circuit to change its effect</p> <p>3.48 Know about the nature and effect of gravitational force</p> <p>3.49 Be able to identify the effects of physical forces</p> <p>3.50 Be able to measure forces</p> <p>3.51 Be able to identify the direction of forces</p> <p>3.52 Know that light travels in a straight line until it strikes an object</p> <p>3.53 Know that light can be reflected, refracted and absorbed</p> <p>3.54 Know that light travels through some materials and not others</p> <p>3.55 Know that we see things when light enters</p>
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			<p>our eyes</p> <p>3.56 Know how sounds are changed by altering the nature and frequency of the vibrations</p> <p>3.57 Know that vibrations from sound sources travel through a medium to reach the ear</p> <p>3.58 Be able to identify the effects and uses of light and sound</p> <p>3.59 Know about the relationship between the Earth and the rest of the solar system</p> <p>3.60 Know that day and night are related to the Earth spinning on its axis</p> <p>3.61 Know about the time taken for the Earth to orbit the Sun and for the Moon to orbit the Earth</p> <p>3.62 Know about the effects caused by the Earth moving</p> <p>3.63 Know that patterns of stars in the sky stay the same</p> <p>3.64 Be able to identify the major constellations</p> <p>3.65 Know about the major sources of energy</p> <p>3.66 Know how energy sources occur</p> <p>3.67 Know how energy sources are obtained</p> <p>3.68 Know how energy sources are used</p> <p>3.69 Know the basic principles of renewable and sustainable energy</p>
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**Bollington St John's Curriculum**  
**Science- National Curriculum Coverage**

\*See the NC14 Cross Reference Document which specifies which objectives are covered in each unit

<u>EYFS</u>	<u>Milepost 1</u>	<u>Milepost 2</u>	<u>Milepost 3</u>
<p><b>Understanding the World</b></p> <ul style="list-style-type: none"> <li>• Explore the natural world around them</li> <li>• Describe what they see, hear and feel whilst outside</li> <li>• Recognise some environments that are different to the one in which they live</li> <li>• Understand the effect of changing seasons on the natural world around them</li> </ul> <p>ELG</p>	<p><b>PLANTS</b></p> <ul style="list-style-type: none"> <li>• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>• Identify and describe the basic structure of a variety of common flowering plants, including trees</li> <li>• Observe and describe how seeds and bulbs grow into mature plants</li> <li>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>	<p><b>PLANTS</b></p> <ul style="list-style-type: none"> <li>• Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>• 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</li> <li>• Investigate the way in which water is transported within plants</li> <li>• Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> </ul>	
<p><b>The Natural World</b></p> <ul style="list-style-type: none"> <li>• Explore the natural world around them, making observations and drawing pictures of animals and plants</li> <li>• Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in</li> </ul>	<p><b>ANIMALS, INCLUDING HUMANS</b></p> <ul style="list-style-type: none"> <li>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>• Identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> </ul>	<p><b>ANIMALS, INCLUDING HUMANS</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> <li>• Describe the simple functions of the basic parts of the digestive system in humans</li> </ul>	<p><b>ANIMALS, INCLUDING HUMANS</b></p> <ul style="list-style-type: none"> <li>• Describe the changes as humans develop to old age</li> <li>• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>• Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>• Describe the ways in which nutrients and</li> </ul>

<p>class</p> <ul style="list-style-type: none"> <li>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter</li> </ul>	<ul style="list-style-type: none"> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</li> <li>Notice that animals, including humans, have offspring which grow into adults</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>	<ul style="list-style-type: none"> <li>Identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<p>water are transported within animals, including humans</p>
	<p><b>EVERYDAY MATERIALS</b></p> <ul style="list-style-type: none"> <li>Distinguish between an object and the material from which it is made</li> <li>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock</li> <li>Describe the simple physical properties of a variety of everyday materials</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties</li> <li>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> </ul>	<p><b>STATES OF MATTER</b></p> <ul style="list-style-type: none"> <li>Compare and group materials together, according to whether they are solids, liquids or gases</li> <li>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</li> <li>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>	<p><b>PROPERTIES AND CHANGES IN MATERIALS</b></p> <ul style="list-style-type: none"> <li>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</li> <li>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>Give reasons, based on evidence from comparative and fair tests, for the particular use of everyday materials, including metals, wood and plastic</li> <li>Demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>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 on bicarbonate of soda</li> </ul>
	<p><b>SEASONAL CHANGES</b></p> <ul style="list-style-type: none"> <li>Observe changes across the four seasons</li> <li>Observe and describe weather associated with the seasons and how day length varies</li> </ul>		<p><b>EARTH AND SPACE</b></p> <ul style="list-style-type: none"> <li>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>Describe the movement of the Moon relative to the Earth</li> <li>Describe the Sun, Earth and Moon as</li> </ul>

			<p>approximately spherical bodies</p> <ul style="list-style-type: none"> <li>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</li> </ul>
	<p><b>LIVING THINGS AND THEIR HABITATS</b></p> <ul style="list-style-type: none"> <li>Explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>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</li> <li>Identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>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</li> </ul>	<p><b>LIVING THINGS AND THEIR HABITATS</b></p> <ul style="list-style-type: none"> <li>Recognise that living things can be grouped in a variety of ways</li> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>Recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul>	<p><b>LIVING THINGS AND THEIR HABITATS</b></p> <ul style="list-style-type: none"> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>Describe the life process of reproduction in some plants and animals</li> <li>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</li> <li>Give reasons for classifying plants and animals based on specific characteristics</li> </ul>
		<p><b>ROCKS</b></p> <ul style="list-style-type: none"> <li>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>Recognise that soils are made from rocks and organic matter</li> </ul>	
		<p><b>LIGHT</b></p> <ul style="list-style-type: none"> <li>Recognise that they need light in order to see things and that dark is the absence of light</li> <li>Notice that light is reflected from surfaces</li> <li>Recognise that light from the sun can be dangerous and that there are ways to protect our eyes</li> <li>Recognise that shadows are formed when light from a light source is blocked</li> </ul>	<p><b>LIGHT</b></p> <ul style="list-style-type: none"> <li>Recognise that light appears to travel in straight lines</li> <li>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</li> <li>Explain that we see things because light travels from light sources to our eyes or light sources to objects and then to our eyes</li> </ul>

		<p>by an opaque object</p> <ul style="list-style-type: none"> <li>Find patterns in the way that the size of shadows change</li> </ul>	<ul style="list-style-type: none"> <li>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul>
		<p><b>SOUND</b></p> <ul style="list-style-type: none"> <li>Identify how sounds are made, associating some of them with something vibrating</li> <li>Recognise that vibrations from sounds travel through a medium to the ear</li> <li>Find patterns between the pitch of a sound and features of the object that produced it</li> <li>Find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>Recognise that sounds get fainter as the distance from the sound source increases</li> </ul>	
		<p><b>FORCES AND MAGNETS</b></p> <ul style="list-style-type: none"> <li>Compare how things move on different surfaces</li> <li>Notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>Observe how magnets attract or repel each other and attract some materials and not others</li> <li>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</li> <li>Describe magnets as having two poles</li> <li>Predict whether two magnets will attract or repel each other, depending on which poles are facing</li> </ul>	<p><b>FORCES</b></p> <ul style="list-style-type: none"> <li>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a great effect</li> </ul>

		<p><b>ELECTRICITY</b></p> <ul style="list-style-type: none"> <li>• Identify common appliances that run on electricity</li> <li>• Construct simple series electrical circuits, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>• 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</li> <li>• Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>• Recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>	<p><b>ELECTRICITY</b></p> <ul style="list-style-type: none"> <li>• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit</li> <li>• Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</li> <li>• Use recognised symbols when representing a simple circuit in a diagram</li> </ul>
			<p><b>EVOLUTION AND INHERITANCE</b></p> <ul style="list-style-type: none"> <li>• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>• Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul>