

## **Science at Byfield School:**

### **What is Science? What is a Scientist?**

*'Science is the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence.*

*A scientist is someone who systematically gathers and uses research and evidence, making a hypothesis and testing it, to gain and share understanding and knowledge. All scientists are united by their relentless curiosity and systematic approach to assuaging it.'*

*The British Science Council*

We cover the full national curriculum for Science and use national curriculum statements to ensure we cover a broad and balanced curriculum.

We teach the children of Byfield School to be a Scientist by teaching them to work scientifically and to learn knowledge about: living organisms, including humans (biology), matter and its' properties (chemistry) and the rules of how the universe works (Physics).

### **Children at Byfield are Scientists because they work scientifically:**

- Children work scientifically by observing over time
- Children work scientifically by seeking patterns
- Children work scientifically by Identifying, Classifying and Grouping
- Children work scientifically by conducting Comparative and Fair Tests
- Children work scientifically by Researching using Secondary Sources
- Children learn and use specific scientific vocabulary to communicate their findings

### **Children at Byfield are Scientists because they are biologists – they learn knowledge about living organisms including humans:**

- Children learn about plants and animals:
  - They identify, classify and describe plants and animals,
  - They describe the basic structure of plants and animals,
  - They learn the life cycles of plants and animals and how they create new generations,
  - They find out and describe the requirements for life and growth and what plants and animals need to live and stay healthy,
  - They learn the reasons for classifying living things and that different living things can be grouped in different ways and how to group, classify and identify plants and animals found in Byfield and in other countries

- Children learn about how different habitats provide the basic needs for plants and animals
  - They learn how plants and animals are dependent on each other within a habitat,
  - They recognise that environments can change, and that this can sometimes pose dangers to living things,
- Children learn about how the human body works
  - They learn about what humans need to stay healthy, in relation to diet, exercise, drugs and lifestyle
  - They learn about the right types of nutrition and humans get nutrition from what they eat,
  - They learn about the different functions of the human body,
  - They learn the changes as humans develop to an old age
- Children learn about Evolution and Inheritance
  - They recognise that living things have changed over time
  - They recognise that fossils provide information about living things that inhabited the Earth millions of years ago
  - They recognise living things produce offspring of the same kind which although are not usually identical to their parents, inherit features from their parents
  - They identify how animals and plants are adapted to suit their natural environments

**Children at Byfield are Scientists because they are Chemists – they learn knowledge about matter and its' properties**

- Children learn about Everyday materials
  - They distinguish between natural and man-made objects
  - They identify, name and classify materials
  - They describe the properties of different materials
  - They identify and compare the uses of different materials
- Children learn about how rocks were formed
  - They compare different types of rocks
  - They describe how soils are made from rock and organic matter
  - They describe how fossils are made within rocks
- Children learn about different states of matter
  - They learn about the properties of solids liquids and gases
  - They observe materials changing state and measure the temperature at which this happens
  - They identify evaporation and condensation within the watercycle
- Children learn about Reversible and Non-Reversible changes when mixing materials
  - They demonstrate that dissolving, mixing and changing state are reversible changes
  - They explain that some changes result in the formation of new materials, and this kind of change is not usually reversible

**Children at Byfield are Scientists because they are Physicists – they learn knowledge about the rules of how the universe works.**

- Children learn about Forces,

- They learn about friction and compare how things move on different surfaces and how there is resistance when an object travels across a surface, through air or through water
- They explain how objects fall to earth due to gravity
- Children learn about mechanisms, including levers, pulleys and gears, which allow a smaller force to have a greater effect
- Children learn about magnetism
  - They describe how some forces happen when two objects are touching, but some forces for example magnetism can act at a distance
  - They observe how magnets can attract and repel each other and describe this depending on which poles are facing
  - They group materials depending on whether they are attracted to a magnet
  - They describe magnets as having two poles
- Children learn about light and sound
  - They recognise the need to see light in order to see things and explain the path of the light in order to see
  - They understand that darkness is the absence of light
  - They recognise that light from the sun can be dangerous, and the need to protect their eyes
  - They understand how shadows are formed
  - They find patterns in the way that the size of shadows change
  - They recognise light appears to travel in straight lines
  - They explain how light is reflected, travels through or is blocked by different surfaces
  - They explain how sounds are made associating them with vibrations
  - They explain how sounds travel through a medium to the ear
  - They find patterns to explain how pitch is changed
  - They find patterns to explain how volume is changed
  - They explain how sound changes depending on the distance from the source
- Children learn about Electricity
  - They identify appliances that run on electricity
  - They construct circuits and identify its basic parts
  - They explain whether a circuit will work depending on whether it is complete or incomplete
  - They explain how a switch works
  - They explain and give reasons of how to alter the brightness of a lamp or volume of a buzzer
  - They use correct symbols when drawing simple circuit diagrams
- Children learn about Earth and Space
  - They describe the movement of the Earth and other planets,
  - They describe the movement of the moon,
  - They describe the Earth, Moon and Sun as approximately spherical bodies,
  - They explain day and night in relation to the Earth's Rotation

Below are the tables of progression. We use these to design learning, assess children are in the correct place and ensure there is full coverage of the Science Curriculum.

Essential Skills	Intent Early Years	Intent Year 1 and 2	Intent Year 3 and 4	Intent Year 5 and 6
<b>Working Scientifically</b>	<ul style="list-style-type: none"> <li>• Extends vocabulary, especially by grouping and naming, exploring the meaning and sounds of new words.</li> <li>• children follow instructions involving several ideas or actions</li> <li>• They answer ‘how’ and ‘why’ questions about their experiences</li> <li>• They recognise, create and describe patterns</li> <li>• They explore characteristics of everyday objects</li> <li>• Looks closely at similarities, differences, patterns and change.</li> <li>• record findings by, e.g. drawing, writing, making a model or photographing.</li> </ul>	<ul style="list-style-type: none"> <li>• Ask simple questions.</li> <li>• Observe closely, using simple equipment.</li> <li>• Perform simple tests.</li> <li>• Identify and classify.</li> <li>• Use observations and ideas to suggest answers to questions.</li> <li>• Gather and record data to help in answering questions.</li> <li>• Make accurate measurements using standard units and a range of equipment. E.g. thermometers and data loggers.</li> </ul>	<ul style="list-style-type: none"> <li>• Ask relevant questions.</li> <li>• Set up simple practical enquiries and comparative and fair tests.</li> <li>• Gather, record, classify and present data in a variety of ways to help in answering questions.</li> <li>• Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.</li> <li>• Report on finding from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> <li>• Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests.</li> <li>• Make accurate measurements using standard units using a range of equipment e.g. thermometers and data loggers.</li> <li>• Make systematic and careful observations.</li> <li>• Identify Differences, Similarities or changes related to simple scientific ideas and processes</li> <li>• Use straightforward scientific</li> </ul>	<ul style="list-style-type: none"> <li>• Plan enquiries, including recognising and controlling variables where necessary.</li> <li>• Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work.</li> <li>• Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs and models.</li> <li>• Report findings from enquiries, including oral and written explanations of results, explanations involving casual relationships and other presentations.</li> <li>• Present findings in written form, displays and other presentations.</li> <li>• Use test results to make predictions to set up further comparative and fair tests.</li> <li>• Take Measurements using a range of scientific equipment with increasing accuracy – taking repeated readings.</li> <li>• identifying scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>

## Biology

			evidence to answer questions or to support their findings.	
	<ul style="list-style-type: none"> <li>• children talk about past and present events in their own lives and in the lives of family members</li> <li>• They know about similarities and differences between themselves and others, and among families,</li> <li>• design practical, attractive environments, for example, taking care of the flowerbeds</li> <li>• children know about similarities and differences in relation to places,</li> <li>• children know about similarities and differences in relation to living things.</li> <li>• They make observations of animals and plants</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen.</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> <li>• Look at suitability of environments and at food chains.</li> <li>• Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates.</li> <li>• Describe and compare the structure of a variety of common animals.</li> <li>• Investigate and describe the basic needs of animals (water, food air).</li> <li>• Identify and name the basic structure of a variety of plants.</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>• Investigate and describe the basic needs of animals,</li> </ul>	<ul style="list-style-type: none"> <li>• Explore the requirements of plants for life and growth and how they vary from plant to plant.</li> <li>• Identify that animals, including humans, need the right amount of nutrition, and that they cannot make their own food and they get nutrition from what they eat.</li> <li>• Give reasons for classifying animals based on specific characteristics.</li> <li>• Recognise that environments are constantly changing and that this can sometimes pose dangers to specific habitats.</li> <li>• Identify how animals and plants are suited to and adapt to their environment in different ways.</li> <li>• Identify how animals and plants are suited to and adapt to their environment in different ways.</li> <li>• Identify and describe the functions of different parts of flowering plants</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> <li>• Identify that humans and some other animals have skeletons</li> </ul>	<ul style="list-style-type: none"> <li>• Relate knowledge of plants to studies of all living things.</li> <li>• Describe the life process of reproduction in some plants and animals.</li> <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>• Identify that animals, including humans, need the right type animal, amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</li> <li>• Recognise how animals and plants are suited to adapt to their environment in different ways.</li> <li>• Describe the changes as humans develop from birth to old age.</li> <li>• Describe how adaptation leads to evolution.</li> <li>• Recognise the impact of diet and exercise on the way the human body functions.</li> <li>• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>• describe how living things are classified into broad groups including microorganisms, plants and animals</li> <li>• give reasons for classifying plants and animals based on specific characteristics.</li> <li>• describe the changes as humans develop to old age.</li> </ul>

		<p>including humans for survival (water, food and air).</p> <ul style="list-style-type: none"> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</li> </ul>	<p>and muscles</p> <ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system</li> <li>Identify the different types of teeth in humans and their simple functions</li> <li>Construct and interpret a variety of food chains.</li> <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> </ul>	<ul style="list-style-type: none"> <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 water are transported within animals, including humans.</li> <li>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> </ul>
<p style="text-align: center; color: red;">Chemistry</p>	<ul style="list-style-type: none"> <li>Provide a range of materials and objects to play with that work in different ways for different purposes</li> <li>children know about similarities and differences in relation to objects and materials</li> </ul>	<ul style="list-style-type: none"> <li>Distinguish between an object and the material from which it is made.</li> <li>Describe the simple properties of a variety of everyday materials.</li> <li>Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard.</li> <li>Investigate and compare the uses of different materials.</li> <li>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> <li>Investigate what happens to materials when they are heated.</li> </ul>	<ul style="list-style-type: none"> <li>Compare and group materials together.</li> <li>Examine the properties of materials using various tests.</li> <li>Compare and group rocks and describe the formation of fossils.</li> <li>Observe that some materials change state when they are heated/cooled.</li> <li>Recognise some common insulators.</li> <li>Describe in simple terms how fossils are formed</li> <li>Recognise that soils are made from rocks and organic matter</li> <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</li> </ul>	<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>Compare and group rocks and describe the formation of fossils.</li> <li>Relate the simple physical properties of some rocks to their formation.</li> <li>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</li> <li>Identify the part played by evaporation and condensation in the water cycle and</li> </ul>

			<p>heated or cooled,</p> <ul style="list-style-type: none"> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>	<p>associate the rate of evaporation with temperature.</p> <ul style="list-style-type: none"> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>Investigate solubility and how possible it is to recover dissolved substances.</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.</li> </ul>
<p>Physics</p>	<ul style="list-style-type: none"> <li>They explain why some things occur, and talk about changes.</li> </ul>	<ul style="list-style-type: none"> <li>Notice and describe how things move, using simple comparisons such as faster and slower.</li> <li>Describe basic movements.</li> </ul>	<ul style="list-style-type: none"> <li>Notice that some forces need contact between two objects and some forces act at a distance.</li> <li>Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product.</li> <li>Explain how shadows are formed and which group of materials are best at forming a shadow.</li> <li>Observe the apparent movement of the sun during the day.</li> <li>Recognise that they need light in order to see things and darkness 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 how to protect their eyes</li> </ul>	<ul style="list-style-type: none"> <li>Explain that unsupported objects fall towards the Earth because of the force gravity acting between the Earth and the falling object.</li> <li>Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces.</li> <li>Describe the sun, moon and earth as approximately spherical bodies.</li> <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>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across</li> </ul>

			<ul style="list-style-type: none"><li>• Find patterns in the way that the size of shadows change</li><li>• compare how things move on different surfaces</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 2 poles</li><li>• predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li><li>• identify how sounds are made, associating some of them with something vibrating</li></ul>	<p>the sky.</p> <ul style="list-style-type: none"><li>• recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li><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 from light sources to objects and then to our eyes</li><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><li>• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the 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>
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## How do we cater for children who are more able in Science?

What We Believe	Provision
<p>The characteristics of a More able pupil:</p> <ul style="list-style-type: none"> <li>• Have a secure subject knowledge and can recall it quickly</li> <li>• They work systematically,</li> <li>• They are able to come up with their own solutions to problems, and use their knowledge to think creatively</li> <li>• Are able to work with a wide range of children being good leaders or team members</li> <li>• Are able to apply that subject knowledge in a range of different contexts</li> <li>• Are able to communicate their understanding efficiently.</li> <li>• Are able to use reasoning skills (not just in maths but across every subject) to construct sound explanations and arguments based on secure subject knowledge</li> <li>• Are able to analyse, evaluate and create (Blooms Taxonomy) drawing from good subject knowledge.</li> <li>• Children are able to self-check, identify mistakes more independently and edit and improve their work.</li> <li>• Use Enquiry skills</li> </ul>	<p>Teachers assess children’s knowledge and vocabulary– and ensure this knowledge is complete and quick.</p> <p>Challenges designed to reason, explain, evaluate, problem solve and create.</p> <p>Opportunities are built in for them to work with other more able children, but also in mixed ability groups.</p> <p>Challenges are designed so that they are more open ended – to encourage creative solutions and systematic working.</p> <p>Teachers adapt their marking to provide additional challenge through giving the children opportunities for reasoning, evaluation, editing and communicating their learning.</p>
<p>Opportunities for More Able</p> <p>More able children need opportunities show they have a deeper level of understanding.</p> <p>Blooms Taxonomy states the higher level thinking is through analysing, (breaking down information into component parts), Evaluating (judging the value of information or ideas) and Creating (combining parts to make a new whole)</p> <p>More able children should have the opportunity to communicate, present and produce work for an audience.</p>	<p>Children have open-ended tasks which they are expected to analyse, evaluate or create. This is often through scientific investigations.</p> <p>Children are able to go back to previous ideas and explain if they were correct or incorrect – they should be able to self-identify where their theories were not correct based on new scientific learning, and make corrections - explaining using correct scientific vocabulary.</p> <p>Opportunities are built in so children that are more able produce work for a specific audience – for example producing letters, presentations or displays to communicate their knowledge.</p> <p>Children take part in inter-house competitions for science – using the above skills.</p>

## How do we cater for SEND in Science?

What we Know / What we believe	Provision
At Byfield we believe the importance of maintaining an inclusive learning environment	SEND children still have 100% access to science lessons – they are not removed for interventions unless there are specific interventions which are assessed to address a crucial learning need which would prevent them from leading a successful and rewarding life.
Some children may need differentiated adaptations to be made – so they can access the same learning.	Teachers adapt and design learning so that it means children can access the next step of learning. This means teachers design activities, which still meet the learning intention by differentiating lessons by responding to learners needs through planning different levels of expectations, activities, level of support, resources, time limits, challenge, peer support or adult support. Teachers also adapt lessons so children with disabilities can access the same learning intentions.
Science is a vocabulary-rich and vocabulary dependant subject – SEND children who struggle with spelling or retaining vocabulary need extra support.	Key vocabulary is explicitly taught – with time for consolidation. Key words are explained with examples, images, videos and use of other strategies to ensure they are memorable. Word banks are used to help with key vocabulary and the spellings.
Science requires knowledge to be ‘sticky’ – children need to remember learning to build on knowledge from one lesson to the next and one year group to the next. – SEND children who struggle with memory retention will need extra support and experiences to link knowledge to.	Learning starts with an ‘experience’ which gives children something to attach all learning to (this may be a trip, watching a video, conducting an experiment, a re-enacting something through drama) Lessons are planned so they are progressive, and knowledge from one lesson is built upon in the next. Strategies are used to ensure key facts and knowledge is retained from on lesson to the next – for example teacher questioning on previous learning, quizzes, consolidation activities, or class discussions.

## Assessment

What we Know / What we believe	Provision
<p><b>Formative</b> – Activities need to happen before teacher’s plan a unit in order for teacher’s to plan their learning. In order to teach children what they don’t know – we need to know what they do know.</p> <p>For Science it is essential that children know correct vocabulary in order to understand geographical concepts.</p>	<p>Teachers use a range of strategies to establish what children know before beginning a unit.</p> <p>This may include: teacher questioning, class discussions, mind-maps, KWI grids, concept cartoons,</p> <p>Vocabulary will be up in classrooms a few days before lessons take place, and discussions will happen so that every child has an understanding of what this key vocab means.</p>

	<p><b>Strategy for Formative Assessment:</b>          At the start of each unit, teachers review to the class 'The Big Question' this is a question linked to different areas of science investigation, which will force children to use scientific knowledge and understanding to answer fully.          There may be an initial class discussion around this question, where teachers elicit pupil's responses, or elder children may make a prediction.          This is used together with other formative assessment techniques to understand children's prior knowledge and understanding.</p>
<p><b>Summative –</b> Teachers need to be sure that children have covered the full national curriculum and they extent of the knowledge they have in each area.</p>	<p>At the end of each lesson teachers tick the TILT (today I am learning to) 1, 2 or 3 times. 1 means children need more practice, 2 mean they understand, 3 means they have a deep understanding of that learning intent.          Teachers assess the children at the end of each unit. They highlight all the skills in the progression documents above which have been covered – this guarantees we have full coverage and assess the children as working deeper than national curriculum, met the national curriculum, working towards the national curriculum or beginning the national curriculum for their age.</p> <p><b>Strategy for Summative Assessment.</b>          At the end of each lesson, children will be asked to write a question for a quiz. (They may also come up with questions which they don't know the answer to, which can be used for planning next lessons.)          The purpose for this – is to check their scientific understanding – if they have a deep understanding they will be able to formulate a question around their new learning.          At the end of the unit – children answer this science quiz- either in teams or individually (depending on teacher's knowledge of age, stage and classroom environment) as part of a science house point competition.</p>

### Pedagogical Approach – Inspire, Challenge, Succeed

<b>What we Know / What we believe</b>	<b>Provision</b>
<p><b>Inspire:</b>            Children learn best when they are engaged, interested and enthusiastic around their learning.            If children are to learn, they need something to 'stick' this learning to.</p>	<p>Units will start with an 'inspire' launch – which is there to engage pupils, stimulate questions and discussions, and give them an experience to 'stick' their learning to. This inspire launch could be: a trip or visit, walk around the school or local area, watching a film, use of news/current events, experiment, survey, quiz, drama/role-play, looking at resources, group work challenges, etc.</p>
<p><b>Challenge:</b>            Once children are secure in the understanding of the knowledge, and have chance to learn or improve their skills, they need to ensure this learning is embedded by applying it to a real work situation.            Children learn vital skills which they will need to lead happy and independent lives through challenges – “We must accept life for what it actually is - a challenge without which we should never know of what stuff we are made, or grow to our full stature.” Robert Louis Stevenson.</p>	<p>Once the base learning of knowledge and skills are in place, children need to apply this learning through a challenge. A challenge (noun) is a new task that checks someone's ability and skill. The theme of rising and responding to challenge is important for children.            The purpose It is through setting 'challenges' that children learn many of our core values: Respectful, Responsible, Determined, Caring, Fair, Courageous.            These challenges can take part in lots of different ways:</p>

	<p>Individual learning challenges in lessons, partner/pair challenges, house group challenges, team challenges, challenges for next steps of learning, homework menus – where children choose their own challenges to complete</p> <p>For science these challenges will revolve around the key principles of scientific investigation:</p> <ul style="list-style-type: none"> <li>• Children work scientifically by observing over time</li> <li>• Children work scientifically by seeking patterns</li> <li>• Children work scientifically by Identifying, Classifying and Grouping</li> <li>• Children work scientifically by conducting Comparative and Fair Tests</li> <li>• Children work scientifically by Researching using Secondary Sources</li> <li>• Children learn and use specific scientific vocabulary to communicate their findings</li> </ul>
<p><b>Succeed:</b> Children need the skills of presenting and explain. Children need the pride, confidence and self-esteem which comes with ‘showing-off’ their work. Children need the skills of producing and creating work for a specific audience (creating being one of the higher-order skills of blooms taxonomy, which shows a deeper level of learning and understanding.)</p>	<p>The final step of our learning process is celebrating the success with others – sharing our knowledge and what we have learnt with a closing experience. This helps give a reason for learning, and audience and a purpose. This could be in many forms: house group competition, invite Parents in for sharing afternoon, create a presentation, quiz, share to another class, produce an assembly, create a display.</p>
<p><b>Mapping</b></p>	<p>Teachers take objectives from twinkl units – to ensure there is full coverage of curriculum statements being taught. In addition to these units, investigation focus units are added in – where children consolidate previous learning and work on specific investigation skills – for example seeking patterns. Additionally, there using the whole school curriculum map – Big questions, and key famous people are added into units.</p>
<p><b>Resources to accommodate working scientifically</b></p>	<p>The school uses <b>explorify</b> resources as part of it’s teaching sequence.</p>

## SMSC

<p><b>What we Know / What we believe</b></p>	<p><b>Provision</b></p>
<p><b>Spiritual:</b></p> <ul style="list-style-type: none"> <li>• ability to be reflective about their own beliefs, religious or otherwise, that inform their perspective on life and their interest in and respect for different people’s faiths, feelings and values</li> <li>• sense of enjoyment and fascination in learning about themselves, others and the world around them</li> <li>• use of imagination and creativity in their learning willingness to reflect on their experiences.</li> </ul>	<p>Children learn about the world around them and how it works – we encourage a sense of fascination to learn about the world and ask questions about how it works.</p>

<p><b>Cultural (Including Cultural Capital)</b></p> <ul style="list-style-type: none"> <li>• understanding and appreciation of the wide range of cultural influences that have shaped their own heritage and those of others</li> <li>• understanding and appreciation of the range of different cultures within school and further afield as an essential element of their preparation for life in modern Britain</li> <li>• knowledge of Britain’s democratic parliamentary system and its central role in shaping our history and values, and in continuing to develop Britain</li> <li>• willingness to participate in and respond positively to artistic, musical, sporting and cultural opportunities</li> <li>• interest in exploring, improving understanding of and showing respect for different faiths and cultural diversity and the extent to which they understand, accept, respect and celebrate diversity, as shown by their tolerance and attitudes towards different religious, ethnic and socio-economic groups in the local, national and global communities.</li> </ul>	<ul style="list-style-type: none"> <li>• Children learn about scientist who have made important discoveries. Each topic has a key famous person, who children learn about – often these are linked to the science curriculum.</li> </ul>
<p><b>Social (Including British Values)</b></p> <ul style="list-style-type: none"> <li>• use of a range of social skills in different contexts, for example working and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds</li> <li>• willingness to participate in a variety of communities and social settings, including by volunteering, cooperating well with others and being able to resolve conflicts effectively</li> <li>• acceptance and engagement with the fundamental British values of democracy, the rule of law, individual liberty and mutual respect and tolerance of those with different faiths and beliefs; they develop and demonstrate skills and attitudes that will allow them to participate fully in and contribute positively to life in modern Britain.</li> </ul>	<ul style="list-style-type: none"> <li>• Sense of belonging working in pairs and groups</li> <li>• Valuing others and their contributions</li> </ul>
<p><b>Moral</b></p> <ul style="list-style-type: none"> <li>• ability to recognise the difference between right and wrong and to readily apply this understanding in their own lives, recognise legal boundaries and, in so doing, respect the civil and criminal law of England</li> <li>• understanding of the consequences of their behaviour and actions</li> <li>• interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>