

Science Policy



Love, Laugh, Learn'

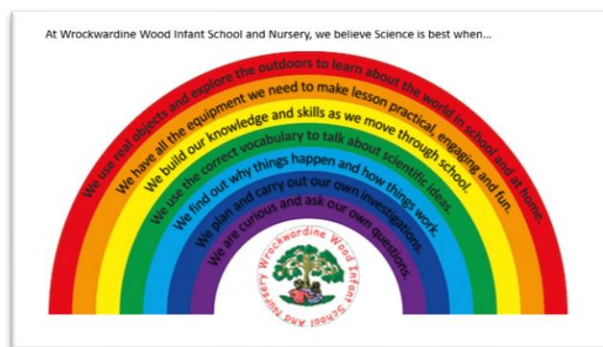
Policy Document Status			
Date of Policy Creation	October 2023	Chair of Governors	Gill Stubbs
Adoption of policy by Governing Board	7 February 2024	Executive Headteacher	Denise Garner
Inception of new Policy	8 February 2024	Staff Member Responsibility	Vicki Prinold
Date of policy review	September 2025	Day Care Manager	Shelley Thursfield

The Nature of Science

A high-quality science curriculum provides the foundations for understanding the world through the specific disciplines of biology, chemistry, and physics. Science has changed our lives and is vital to the world's future prosperity, and all children should be taught essential aspects of the knowledge, methods, processes, and uses of science.

Curriculum Intent

We aim to encourage a child's natural sense of wonder about the world in which they live through first-hand practical experiences. Our science curriculum is designed to develop a sense of excitement and curiosity about natural phenomena. We want our children to ask questions about what they see, hear, feel, and experience. We want them to develop their vocabulary and use simple scientific language to talk about what they have found out. We want them to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. We want our children to build up a body of key knowledge and concepts. We want them to develop their understanding of scientific ideas and use different types of scientific enquiry to answer their own questions. This includes observing changes over a period, noticing patterns, grouping, and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information such as books, photographs, and videos.



Curriculum Implementation

- the curriculum is sequenced and well-structured with clear end points. knowledge is built on overtime and learning is broken down into component parts.
- regular professional development gives teachers' the scientific subject knowledge they need to help children make connections between scientific concepts.
- teachers have access to medium-term plans to help them to deliver high-quality teaching and makes them aware of possible scientific misconceptions.
- pedagogical choices are designed to develop the substantive knowledge (established factual knowledge) and disciplinary knowledge (knowledge of how to work scientifically) intended in each lesson.
- teachers ensure children build their knowledge of key substantive concepts such as 'plant,' 'force', 'material' and 'habitat'.
- teachers use well-structured enquiry questions to focus a particular activity e.g., '*How does the temperature of water affect the time taken for a substance to dissolve?*'
- children's knowledge of how to work scientifically is built over time from Early Years to Year 2.

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- time is built into the curriculum for children to learn and remember key knowledge and how this connects with what they already know about science, so they build connected knowledge.
- children will be given sufficient opportunities to practise and consolidate what they have learned before moving on to new content.
- SEND children receive additional support before a lesson, for example through pre-teaching of specific vocabulary.
- children's understanding of scientific vocabulary is developed, so children can talk about the phenomena they are learning about.
- teachers' assessment checks knowledge that children have learned in previous years.

Role of the Science subject leader

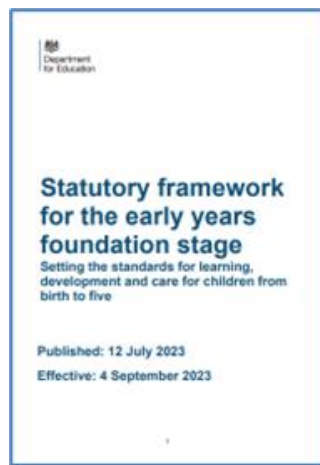
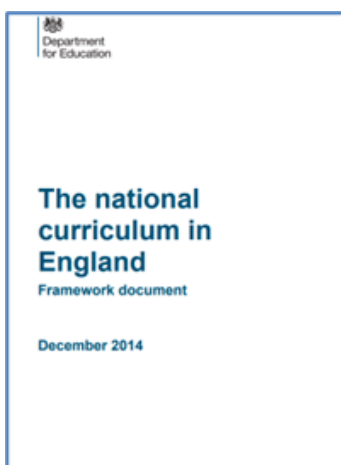
The role of the subject leader is to:

- develop good working relationships, to instil confidence by sharing expertise and knowledge and to be open to suggestions.
- have an overview of science in the Early Years Foundation Stage and Key Stage 1 and monitor the implementation of the National Curriculum
- lead staff professional development so they have the knowledge to teach science.
- attend professional development and read research articles to keep up to date with developments in teaching science in early years and primary.
- review long, medium- and short-term planning to ensure it is relevant.
- update and manage resources.
- Speak with children to measure the impact of the curriculum.
- work with other professionals and establishments
- devise an action plan in response to monitoring and keep a PowerPoint portfolio of how science is taught in school and standards.
- keep parents and governors informed about standards in science.

The science subject leader will keep a portfolio of examples of work to show progression in concepts and processes. Records in the form of photographs and samples of work are both records of practice and used as a staff resource.

Teaching and Learning

In Nursery and Reception, we teach Science through the 'Understanding the World' as one of the seven areas of learning set out in the Statutory Framework for EYFS. It is introduced indirectly through activities that encourage every child to explore, problem solve, observe, predict, think, make decisions, and talk about the world around them.



EYFS Development Matters -Understanding the World

Birth to Three	Three and Four-Year-Olds	Children in Reception
<ul style="list-style-type: none"> • Repeat actions that have an effect. • Explore materials with different properties. • Explore natural materials, indoors and outside. • Explore and respond to different natural phenomena in their setting and on trips. • Make connections between the features of their family and other families. • Notice differences between people. 	<ul style="list-style-type: none"> • Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Talk about what they see, using a wide vocabulary. • Begin to make sense of their own life-story and family's history. • Show interest in different occupations. • Explore how things work. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice. • Continue developing positive attitudes about the differences between people. • Know that there are different countries in the world and talk about the differences they have experienced or seen in photos. 	<ul style="list-style-type: none"> • Talk about members of their immediate family and community. • Name and describe people who are familiar to them. • Comment on images of familiar situations in the past. • Compare and contrast characters from stories, including figures from the past. • Draw information from a simple map. • Understand that some places are special to members of their community. • Recognise that people have different beliefs and celebrate special times in different ways. • Recognise some similarities and differences between life in this country and life in other countries. • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them.
Early Learning Goals		
<p>Past and Present</p> <ul style="list-style-type: none"> • Talk about the lives of the people around them and their roles in society. • Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class. • Understand the past through settings, characters and events encountered in books read in class and storytelling. 		
<p>People, Culture and Communities</p> <ul style="list-style-type: none"> • Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps. • Know some similarities and differences between different religious and cultural communities in this country, drawing on their experiences and what has been read in class. • Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and (when appropriate) maps. 		
<p>The Natural World</p> <ul style="list-style-type: none"> • Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. 		

In Key Stage 1 we follow the National Curriculum for Science. *'A high-quality education provides the foundations for understanding the world through the specific disciplines of biology, chemistry, and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes, and uses of science.'*

National Curriculum Aims

The national curriculum for science aims to ensure that all children:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry, and physics.
- develop understanding of the nature, processes, and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Working Scientifically

Children will be encouraged to explore the world around them and raise their own questions. They will experience different types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions. They will use simple features to compare, objects, materials and living things and decide how to group them, observe changes overtime, and notice patterns and relationships.

Children might work scientifically by performing tests to explore questions, for example 'What is the best material for an umbrella, curtains, bookshelf, Olympic swimmer?' or 'Is a deciduous tree dead in winter?' 'Is a flame alive?'

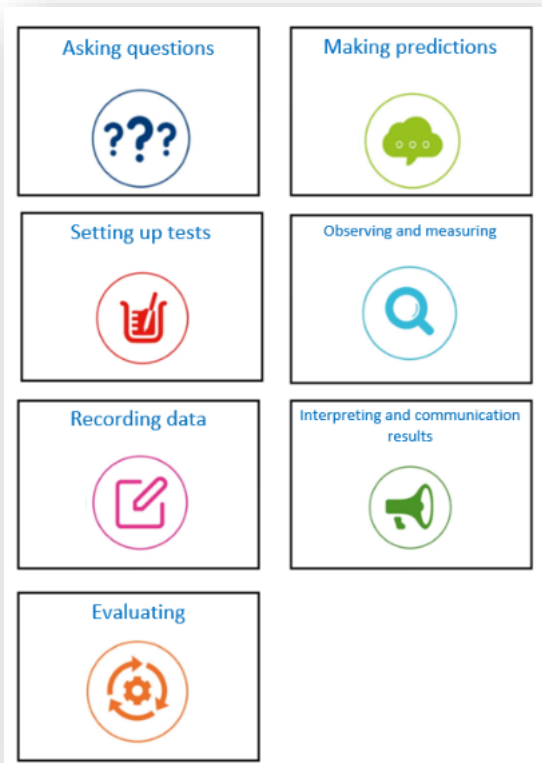
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During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes, and skills through the teaching of the programme of study content:

- asking simple questions (*recognising that they can be answered in different ways*).
- making predictions (*based on what they know*)
- setting up tests (*using simple equipment such as hand lenses and egg timers.*)
- observing and measuring (*closely and overtime,*)
- recording data (*making tables, charts, displays*).

Identifying and classifying



Each class has sets of role cards and each card is set on a lanyard so children can wear them during a group enquiry. This helps children to remember the different scientific skills that are required.

Scientific Language

The quality and variety of spoken language that our children hear and speak is vital in developing their use of scientific vocabulary and articulating their understanding of scientific concepts.

Children will be encouraged to talk about what they have found out and how they found out using simple scientific language. They will be asked to describe how they identify and group according to a criterion or use their senses to compare textures, sounds, smells, objects, plants, and animals. They will observe and talk about changes e.g., in the weather and seasons.

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A language rich environment is crucial so teachers and adults working with children will model key vocabulary correctly, create displays of specific scientific vocabulary, and provide word banks to scaffold children's learning and ability to communicate their findings.

Key scientific vocabulary is outlined on the medium-term planning and the progression in scientific skills and knowledge document.

Vocabulary				
	Plants	Animals, including humans.	Everyday materials	Seasonal Change
Year 1	leaves, flowers (blossom) petals, fruit root, bulb seed, trunk branches, stem	Common names of some fish, amphibians, reptiles, birds, and mammals Head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth	hard/soft, stretch/stiff shiny/dull, rough/smooth bendy/not bendy, waterproof/not waterproof absorbent/not absorbent opaque/transparent brick/paper/fabrics/elastic/f oil	weather, rain, cloud, rainbow, temperature, shower, sun, dry, cold, heat, wind, cloudy,
	Plants	Animals, including humans	Use of everyday materials	Living Things and their habitats
Year 2	germination, growth, survival,	exercise, nutrition, egg, chick, chicken, egg, caterpillar, pupa, butterfly, spawn, tadpole, frog, lamb, sheep. baby, toddler, child, teenager, adult	metal, (coins, cans, cars, table legs) wood (matches, floors, telegraph poles) spoons (made from plastic, wood, metal) identify, classify	habitat, seashore, woodland, ocean, rainforest, microhabitat, living, dead, alive, never alive, leaf litter Logs, stones woodlice

Learning Environment

Children are encouraged to be 'scientists' right from an early age. We use a variety of teaching and learning approaches in our science lessons.

These are:

- to elicit children's existing ideas and understanding using a 'Knowledge Harvest', discussions and practical activities.
- modelled, intermediate and independent investigations.
- to give children opportunities to answer questions using different types of scientific enquiry methods (e.g., observations over time, fair test, pattern seeking, research, identifying and classifying)
- practical and hands on investigations and enquires.
- The use of resources to make observations and recordings, such as rulers, stop watches, tape measurers, measuring jugs.
- the use of IT such as iPad, visualisers, and cameras.
- to plan educational visits, local walks, and the outside environment to observe seasonal change and observe the environment.
- to utilise the school grounds e.g. OWL (Outdoor Wonder Learning) sessions
- to communicate findings in different ways e.g., tables, charts, Venn diagrams, posters
- to make links to other areas of curriculum e.g., literacy – factual poster

Resources

- science resources can be found in the science cupboard located next to Robin's class.
- boxes and drawers are clearly labelled with resources to support each area of science.
- resources include a box of different materials, magnifying glasses, life processes materials (e.g. bird nest), seeds for planting, mirrors, electricity equipment, batteries, torches, magnets, measuring jugs.
- classrooms are equipped with globes, atlases, measuring equipment, digital cameras, laptops, and an iPad for research.
- the school library has information books to support learning in science.
- the outdoor classroom is used as an additional resource for enquiry projects as is the local community and further afield e.g. Cardingmill Valley.
- a collection of ideas on ways our outdoor environment can enhance learning has been linked to the relevant science units and is used to aid planning.
- knowledge organisers are available to give children and teachers the 'bigger picture' of a topic, subject area, or specific concept. Some topics can be complicated, so having the essential knowledge, clear diagrams, explanations, and key terms on one document can be beneficial.

Scientists and Inventors

Children will find out about people who have developed useful materials for example *John Dunlop, Charles Macintosh, and John McAdams.*

Spiritual, Moral, Social, and Cultural (SMSC) development

The teaching of science offers opportunities to support the personal development of our children. Groupings allow children to work together and discuss their ideas and feelings about their own work and the work of others in a sensitive way. They are given opportunities to collaborate and co-operate across a range of activities and experiences. Being imaginative and creative helps children to gain an understanding of themselves and others. They also develop an understanding of different times, through learning about famous scientists and inventors.

Teachers and other adults in school promote the following attitudes during lessons:

- co-operation with others.
- caring for materials and themselves.
- respect for other people's work and opinions.
- self-respect and confidence in their own ideas.
- willingness to 'have a go'.
- perseverance,
- open mindedness,
- curiosity,
- critical reflection,
- awareness of re-using and recycling materials.

Science Curriculum Planning

Science planning is shown on the Long-Term matrix (see appendix 3). Teachers follow medium term planning which is reviewed annually by subject leaders and teachers. Lessons include time for children to:

Early Years Foundation Stage Planning

Long Term Planning

In Nursery and Reception, the curriculum is organised through agreed termly themes over the period of the academic year. The EYFS development matters and the schools EYFS planning matrix is used as guidance.

Medium Term Planning

We address aspects of the curriculum in more detail for each term. Learning objectives, assessment opportunities, and activities and experiences for each area of learning and development are identified.

Short Term Planning

The daily planning is informed in two ways. Firstly, through ongoing observation of child initiated, adult initiated and adult directed activities both indoors and outdoors. This allows for flexibility in response to individual children's needs and interests and for revision and modification of plans.

It is informed secondly by referring to the medium term plans containing objectives and experiences in the half termly theme.

Key Stage 1 planning

The National Curriculum is used as the basis of science planning in Key Stage 1. Teachers use the '**Engaging Science**' scheme of work, to support planning.

The planning provides children with opportunities to build their substantive and disciplinary knowledge:

- **Substantive knowledge:** refers to the established knowledge produced by science, for example, the parts of a flower or the names of planets in our solar system. This is referred to as 'scientific knowledge' and 'conceptual understanding' in the national curriculum.
- **Disciplinary knowledge:** refers to what children learn about how to establish and refine scientific knowledge, for example by carrying out practical procedures. By identifying and sequencing this knowledge, it is possible to plan in the curriculum for how children will get better at working scientifically throughout their time at school.

Long Term Planning

The science curriculum for key stage 1 is organised through themes. It is usual that six units are taught across the academic year (2 units per term). These units have subject specific focuses and build knowledge in a progressive way towards clear end points for assessment. Cross curricular links have also been planned so that children can apply their developing skills, knowledge and

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understanding across the curriculum. The '**Engaging Science**' scheme of work is used to support planning.

Medium Term Planning

Teachers follow medium term planning which is reviewed annually by subject leaders and teachers. Learning objectives, assessment opportunities, activities and experiences for science are identified. The 'Engaging Science' scheme of work is adapted to meet the needs of our children.

Short Term Planning

Short term planning is informed by the statutory requirements outlined in the medium-term plan. Assessment for learning is also used to inform short term planning to address individual children's needs.

Weekly and daily planning consists of the following:

- clear and concise learning intentions linked to scientific skills, knowledge and understanding.
- clear success criteria for each lesson.
- health and safety considerations.
- key scientific vocabulary
- cross curricular links which encourage the use of computing, technology, literacy and mathematics.
- evaluated lessons used to inform future teaching and learning.
- progression built into lessons so that the children are challenged and supported appropriately.

Assessment

Attainment Target

By the end of each key stage, pupils are expected to know, apply, and understand the matters, skills and processes specified in the relevant programme of *study* (see Appendix 1).

Formative Assessment

We analyse and review what we know about each child's development and learning and make informed decisions about supporting the child's progress. This enables us to plan the next steps for individuals and groups of children by providing challenging but achievable activities and experiences to extend the children's learning.

We use the Teacher Assessment in Primary Science (TAPS) project for assessment of enquiry skills (working Scientifically) and for focused assessment examples of children's learning. Teachers assess children's scientific capability through interactions, questioning, responding to children's recorded work, observation using 'Evidence Me' and moderation discussions.

Assessment in Early years and the Foundation Stage (EYFS)

- Observations are recorded on an iPad, which include photographic evidence and comments demonstrating children's knowledge and skills over time.

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- Observations are shared with parents through 'Evidence Me' an observation and assessment app which monitors the impact of children's learning, celebrates their attainment, and identifies what support the child needs to improve.
- Collected evidence is linked clearly to the EYFS curriculum statements, Early Learning goals and characteristics of effective learning.
- Evidence is used to inform planning and next steps in learning.
- Evidence is used to update tracking grids, highlighted to track attainment and progress and to identify next steps in learning.
- Termly learning targets are created for individual children within 'Understanding the World' and shared with parents.
- In nursery parents join the children for 'Stay and Play' sessions each term and they can look at their child's Early Years Foundation Stage Profile evidence.
- Parents receive a termly report in reception to identify their progress in 'Understanding the World' and other Early Learning Goals.
- Ongoing assessments are used to inform a termly summative assessment that is included in our data tracking system.

The Early Years Foundation Stage Profile (EYFSP)

In the final term of the year in which the child reaches age five, and no later than 30 June in that term, the EYFS Profile is completed for each child. The Profile provides parents and carers, practitioners and teachers with a well-rounded picture of a child's knowledge, understanding and abilities, their progress against expected levels, and their readiness for Year 1, in all areas of learning including 'Understanding the World'.

The Profile reflects:

- on-going observation.
- all relevant records held by the setting.
- discussions with parents and carers, and any other adults whom the teacher, parent or carer judges can offer a useful contribution.

In all areas of learning including 'Understanding the World', each child's level of development is assessed against the early learning goals. Practitioners indicate whether children are meeting expected levels of development, or if they are exceeding expected levels, or not yet reaching expected levels ('emerging').

Assessment in Key Stage 1

- Learning ladders are completed, by adults and children, to assess learning against the lesson objective/success criteria.
- Each topic has an assessment grid which is included in children's Science books at the beginning of a topic and is highlighted to track individual attainment and progress in scientific knowledge and skills and content.
- Statements are progressive and build towards the end of KS1 expected standard exemplification.
- Photographic and video evidence is collected through '**Evidence Me**' an observation and assessment app which monitors the impact of children's learning, celebrates their attainment, and identifies what support the child needs to improve.

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- Assessment grids linked to each science topic are completed each half term. Based on evidence teachers make accurate assessments termly as to whether the children are working below, within or above age-related expectations for that unit.
- Science topic assessment grids are used alongside working scientifically assessments to making end of year attainment judgements for individual children in science.
- Parents receive a termly report that communicates children's progress in science.
- At the end of Key Stage 1 parents receive an end of key stage data report showing their child's attainment compared to national expectations.

Assessment at the end of Key Stage 1

Teacher assessments in science, for children in their final term of year two, are completed using evidence from previous learning and assessments. Final judgements are based on children's individual evidence demonstrating their understanding knowledge and skills against the Statutory Interim assessment framework. The results of these assessments are submitted to the Department for Education (see appendix 2)

Computing

Technology enhances teaching and learning in science wherever appropriate, across all age phases.

- children use IT to enhance their skills in data handling (e.g., traffic survey) and in presenting written work (e.g., tables).
- children research information through the Internet, and computer programmes.
- children use electronic sand timers and cameras to capture information.

Inclusion

- we meet the needs of children with special educational needs, those with disabilities, those who are more able and those learning English as an additional language through adaptive teaching. Barriers to learning are identified and targeted support is put in place to ensure children make the expected progress.

Health and Safety

All activities need to be carried out with care and children are taught how to use equipment in a safe manner. The school is registered with CLEAPSS (Consortium of Local Education Authorities for the Provision of Science Services) which provides Health and Safety guidance and ways to carry out practical activities so that they work, are safe, and are effective at supporting learning.

- where children participate in activities outside the classroom, such as a visit to a farm, we carry out a risk assessment prior to the activity to ensure that the activity is safe and accessible for all children.
- planning documentation identifies the possible health and safety issues relating to that topic or lesson to keep children safe.
- our Design and Technology policy also refers to the safe use of foods and utensils if used during science projects.
- The Telford & Wrekin Educational Visits guidelines document supports staff when planning off site science activities.

Appendix 1

Y1 programme of study

Plants

Pupils should be taught to:

- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
- identify and describe the basic structure of a variety of common flowering plants, including trees.

Animals, including humans.

Pupils should be taught to:

- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- identify and name a variety of common animals that are carnivores, herbivores and omnivores.
- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds, and mammals including pets)
- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Everyday materials

Pupils should be taught to:

- distinguish between an object and the material from which it is made.
- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.
- describe the simple physical properties of a variety of everyday materials.
- compare and group together a variety of everyday materials on the basis of their simple physical properties.

Seasonal Changes

Pupils should be taught to:

- observe changes across the 4 seasons.
- observe and describe weather associated with the seasons and how day length varies Living things and their habitats.

Living things and their habitats

Pupils should be taught to:

- explore and compare the differences between things that are living, dead, and things that have never been alive.
- identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.
- identify and name a variety of plants and animals in their habitats, including microhabitats.
- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Plants

Pupils should be taught to:

- 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.

Animals, including humans.

Pupils should be taught to:

- notice that animals, including humans, have offspring which grow into adults.
- find out about and describe the basic needs of animals, including humans, for survival (water, food, and air)
- describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

Uses of everyday materials

Pupils should be taught to:

- 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.

Appendix 2

Science Interim teacher assessment frameworks at the end of Key Stage 1

Using the science framework

The standard in this framework contains a number of 'pupil can' statements. To judge that a pupil is working at this standard in science, teachers need to have evidence which demonstrates that the pupil meets all of the 'working scientifically' statements and all of the 'science content' taught in the final year of the key stage.

There is no requirement to have evidence from the classroom that children have met statements relating to science content taught before the final year of the key stage. Where possible, teachers should draw on assessments that have been made earlier in the key stage to make their judgement against this framework.

The 'working scientifically' statements must be taught through, and clearly related to, the teaching of substantive science content in the programme of study. The 'science content' statements will be taught and assessed throughout the key stage.

Working at the expected standard

Working scientifically

The pupil can:

- ask their own questions about what they notice.
- use different types of scientific enquiry to gather and record data, using simple equipment where appropriate, to answer questions including:
 - observing changes over time
 - noticing similarities, differences, and patterns
 - grouping and classifying things
 - carrying out simple comparative tests
 - finding things out using secondary sources of information
- use appropriate scientific language from the national curriculum to communicate their ideas in a variety of ways, what they do and what they find out.

Science content

The pupil can:

- name and locate parts of the human body, including those related to the senses, and describe the importance of exercise, balanced diet, and hygiene for humans.
- describe the basic needs of animals for survival and the main changes as young animals, including humans, grow into adults.
- describe basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plants.
- identify whether things are alive, dead or have never lived.
- describe and compare the observable features of animals from a range of groups.
- group animals according to what they eat, describe how animals get their food from other animals and/or from plants, and use simple food chains to describe these relationships.
- describe seasonal changes.
- name different plants and animals and describe how they are suited to different habitats.
- use their knowledge and understanding of the properties of materials, to distinguish objects from materials, identify and group everyday materials, and compare their suitability for different uses.

Appendix 3

Long Term Plan		
Nursery and Reception	1st Half term	2nd Half Term
Autumn	<p>The Natural World (Science links) Seasonal change and Weather – Autumn/Winter Humans: Naming parts of the body Animal: Nocturnal animals Habitat: Where do I live? Materials: Naming materials-Toys Santa's Sack Cooking: Apple pie/crumble. Porridge. Dark and light. Sources of light: Torches. Forces: Push and pulls. Scientific Enquiry Observing Over Time Observe the changes during Autumn on the environment. Observe an apple going brown. Identifying and Classifying Group autumn objects. Pattern Seeking Explore the colour leaves in our environment and find out which colour leaf we have the most of. Research Find out about Autumn from books and the computer. Fair Testing Find out which apple is the favourite to make an apple crumble.</p>	<p>The Natural World (Science links) Seasonal change and Weather – Autumn/Winter Humans: Naming parts of the body Animal: Nocturnal animals Habitat: Where do I live? Materials: Naming materials of toys in Santa's Sack Cooking: Apple pie/crumble. Porridge. Dark and light. Sources of light: Torches. Forces: Push and pulls. Scientific Enquiry Observing Over Time Observe the changes during Autumn on the environment. Observe an apple going brown. Identifying and Classifying Group autumn objects. Pattern Seeking Explore the colour leaves in our environment and find out which colour leaf we have the most of. Research Find out about Autumn from books and the computer. Fair Testing Find out which apple is the favourite to make an apple crumble.</p>
Spring	<p>Seasonal change and Weather –Winter/Spring Plants: Observe and name plants grown during spring. Observe own plants. Plant own beans Spring flowers. Animals: Naming farm animals and their young. Life cycle of a Chicken/Duck Materials: Melting, frozen puddles, snowmen. The 3 Little Pigs – Hard materials. The builders Yard. Cooking: Making toast Habitats: Where do farm animals live? Magnets. Forces. Scientific Enquiry Observing Over Time</p>	<p>Seasonal change and Weather – Winter/Spring Plants: Observe and name plants grown during spring. Observe own plants. Plant own beans Spring flowers. Animals: Naming farm animals and their young. Life cycle of a Chicken/Duck Materials: Melting, frozen puddles, snowmen. The 3 Little Pigs – Hard materials. The builders Yard. Cooking: Making toast Habitats: Where do farm animals live? Magnets. Forces. Scientific Enquiry Observing Over Time</p>

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	<p>Observe the changes during Winter and Spring on the environment. Observe the life cycle of chicks/ducks. Identifying and Classifying Identify changes during spring and naming some plants. The Big Bird Watch and identifying birds. Matching farm animal and the baby. Pattern Seeking Do the same birds visit our classes? Research Finding out about farm animals from books and the computer. Fair Testing Which bean will grow the tallest? (N) Where will the bean grow the best?</p>	<p>Observe the changes during Winter and Spring on the environment. Observe the life cycle of chicks/ducks. Identifying and Classifying Identify changes during spring and naming some plants. The Big Bird Watch and identifying birds. Matching farm animal and the baby. Pattern Seeking Do the same birds visit our classes? Research Finding out about farm animals from books and the computer. Fair Testing Which bean will grow the tallest? (N) Where will the bean grow the best?</p>
<p>Summer</p>	<p>Seasonal change and Weather Spring/Summer Plants: Talking about changes. Summer flowers. Sunflowers Planting seeds. Insects: Naming insects and life cycle of a butterfly Animals: Naming wild animals and their young. Habitats: Where do wild animals live? Humans: Changes/growth Materials: Melting, Ice Lollies. Floating and sinking. Boats. Forces. Dark and light: Shadows Forces: floating and sinking Scientific Enquiry Observing Over Time Observe the changes during Summer on the environment. Life cycle of butterflies. Identifying and Classifying Identify changes during Summer. Group Summer and Winter clothes. Groups minibeasts which and fly and not fly. Pattern Seeking Do all minibeasts live in the same place each day. Research Find out about minibeasts from books and the computer. Fair Testing Will we find the same minibeasts in the same place each day?</p>	<p>Seasonal change and Weather Spring/Summer Plants: Talking about changes. Summer flowers. Sunflowers Planting seeds. Insects: Naming insects and life cycle of a butterfly Animals: Naming wild animals and their young. Habitats: Where do wild animals live? Humans: Changes/growth Materials: Melting, Ice Lollies. Floating and sinking. Boats. Forces. Dark and light: Shadows Forces: floating and sinking Scientific Enquiry Observing Over Time Observe the changes during Summer on the environment. Life cycle of butterflies. Identifying and Classifying Identify changes during Summer. Group Summer and Winter clothes. Groups minibeasts which and fly and not fly. Pattern Seeking Do all minibeasts live in the same place each day. Research Find out about minibeasts from books and the computer. Fair Testing Will we find the same minibeasts in the same place each day?</p>

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Long term Plan

Year 1	1st Half term	2nd Half Term
Autumn	<p><i>Plants</i> Plants Name a variety of wild and garden plants, including deciduous and evergreen trees and identify and their structure.</p> <p>Weather and seasonal changes Local walks to observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons.</p> <p>Enquiry: Which week will have the most rain? (Observing over time)</p> <p>Key Scientist: Linda Brown Buck Linda Brown Buck is an American biologist. She discovered that mammals have odorant receptors. This means they can smell over 10'000 different smells.</p>	<p><i>Animals including Humans</i> Humans and Senses Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Use their senses to compare different textures, sounds and smells.</p> <p>Enquiry: Do people with bigger feet need bigger gloves? (Pattern seeking)</p>
Spring	<p><i>Everyday Materials</i> Materials Distinguish between an object and the material from which it is made.</p> <p>Identify and name materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials and their use.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p>Enquiry: Which fabric is the most absorbent? (Fair testing)</p> <p>Key Inventor: Ole Kirk Christiansen Ole Kirk Christiansen invented Lego in 1949</p>	<p><i>Animals including Humans</i> Animals Identify and name a variety of common animals including fish, amphibians, reptiles, birds, and mammals including pets.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores, and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Enquiry: How do scientists group animals? (Research/Grouping & Classifying)</p> <p>Weather and seasonal changes Local walks to observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons.</p> <p>Observe how day length varies.</p> <p>Enquiry: How has the Oak tree changed from autumn to winter? (Observing over time)</p>
Summer	<p><i>Plants</i> Plants Name a variety of wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of flowering plants, including trees.</p> <p>Enquiry: Do all daisies have the same number of petals? (Pattern seeking)</p>	<p><i>Living things and their habitats</i> Insects Observes different insects in the local area compare and contrast.</p> <p>Understand how to take care of insects taken from their local environment and the need to return them safely after study.</p> <p>Use the local environment throughout the year to explore and answer questions about animals in their habitat.</p> <p>Enquiry: What insects are living in our school grounds?</p>

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	<p>Key Scientist: George James Symon <i>George James Symon invented his own version of the rain gauge that is still used today by meteorologists.</i></p>	<p>Weather and seasonal changes Enquiry: It was chilly this morning but now it's warm. How does the temperature change throughout a summer's day? (Observing over time)</p>
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Year 2	1st Half term	2nd Half Term
Autumn	<p><i>Plants</i> Plants <i>Name a variety of wild and garden plants in their habitat.</i></p> <p><i>Observe and describe how seeds and bulbs grow.</i></p> <p><i>Find out and describe how plants need water, light and a suitable temperature.</i></p> <p><i>Learn about the requirements of plants for germination, growth and survival as well as the process for reproduction and growth.</i> Enquiry: What do plants need to grow healthily? (Fair testing) Children to devise their own comparative investigations linked to cress e.g. <i>Does cress grow better with or without water?</i> <i>Does cress grow better in the light or dark?</i></p>	<p><i>Animals including Humans.</i> Humans <i>Find out about and describe the basic needs of humans, for survival (water, food and air)</i></p> <p><i>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</i></p> <p>Enquiry: Which snack contains the most sugar? (Research)</p> <p>Key Scientist: Louis Pasteur <i>Louis Pasteur discovered that germs can be spread through air and touch.</i></p>

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Spring	<p><i>Uses of Everyday Materials</i></p> <p>Materials <i>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</i></p> <p><i>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</i></p> <p><i>Identify and discuss the uses of different everyday materials to become familiar with how some materials are used for more than one thing.</i></p> <p><i>Think about the properties of materials that make them suitable or unsuitable for particular purposes and think about unusual and creative uses for everyday materials.</i></p> <p><i>Find out about people who have developed useful new materials, e.g. Charles Macintosh.</i> Enquiry: Which material is the most suitable for a gym kit? (Fair testing)</p> <p>Key Scientist: Charles Macintosh <i>Charles Macintosh invented the first waterproof fabric.</i></p>	<p><i>Animals including Humans</i></p> <p>Animals <i>Notice that animals, including humans, have offspring which grow into adults.</i></p> <p><i>Find out about and describe the basic needs of animals, for survival (water, food and air)</i></p> <p>Enquiry: How do chicks change over time? (Observing over time)</p>
Summer	<p><i>Plants</i></p> <p>Plants <i>Name a variety of wild and garden plants in their habitat.</i></p> <p><i>Observe and describe how seeds and bulbs grow.</i></p> <p><i>Find out and describe how plants need water, light and a suitable temperature.</i></p> <p><i>Learn about the requirements of plants for germination, growth and survival as well as the process for reproduction and growth.</i></p> <p>Enquiry: Where are the most daisies? (Pattern seeking) Do any plants grow without soil?</p>	<p><i>Living things and their habitats</i></p> <p>Insects <i>Name a variety of insects in their micro habitats.</i></p> <p><i>Identify that most living things live in habitats to which they are suited.</i></p> <p><i>Describe how different habitats provide for the basic needs of different kinds of insects and how they depend on each other (Living things and their habitats)</i></p> <p><i>Explore and compare the differences between things that are living, dead, and things that have never been alive (Living things and their habitats).</i></p> <p>Enquiry: Which colour petals attract the most bees? (Pattern seeking)</p> <p>Key Scientist: Rachel Carson <i>Rachel Carson was a scientist who studied ocean habitats. She discovered that pollution from farms was affecting oceans and the animals in them.</i></p>