

science



Curriculum

At Butlers Hill Infant and Nursery School our ambition is for science to be inclusive and foster curiosity in all our children.

Intent

At Butlers Hill Infant School we believe that science is inclusive and fosters curiosity in all children. We want children to experience and observe natural phenomena as well as look more closely at the natural and humanly constructed world around them. Through our science topics we encourage the children to develop their curiosity by encouraging them to ask questions about what they notice, express their opinions and make links with other areas of learning such as Geography, Art, History, PSHE and Maths. At Butlers we aim to teach scientific concepts through the use of first-hand practical experiences, as well as using some appropriate secondary sources, such as books, photographs and videos to support children's learning. The children have opportunities to develop their understanding of different scientific ideas by using different types of scientific enquiry to answer their own questions. The key stage 1 children have questions to investigate and find the answers for themselves using their working scientific skills. These include observing changes over a period of time, noticing patterns, making links as well as grouping and classifying things. We also aspire the children to be Scientists as they grow by learning about Scientists within each topic and provide them with opportunities and experiences they may never encounter in their childhood to enhance their learning of the subject.

Implementation

To ensure high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the school and aligns to the National Curriculum in England.

Key Stage One children also complete a yearlong study to develop their understanding of scientific concepts such as seasonal changes. The teaching of science at Butlers Hill Infant and Nursery school has an underpinning focus on the working scientifically elements of scientific learning; challenge the children and to encourage development as scientists across Key Stage One.

Science learning at Butlers Hill Infant and Nursery school is enquiry based, providing children with authentic experiences, context and relevance to develop their scientific knowledge. This allows children to make cross-curricular links and see how science relates to the world around them. Our school has a clear focus on the development of speech and language and allowing children to make links and embed key scientific vocabulary.

Year 1	autumn 1	autumn 2	spring 1	spring 2	summer 1	summer 2
science	Materials	Animals Season: Autumn	Animals – Hibernation Season: Winter	Animals including humans- Senses	Plants we eat Season: Spring	Animals – pond life Season: Summer
	Seasons					

Year 2	autumn 1	autumn 2	spring 1	spring 2	summer 1	summer 2
science	Animals (Inc. Humans)	Everyday Materials	Living Things and Their Habitats	Plants	Living things and their habitats	Scientists and inventors

Impact

At Butlers Hill, We give them experiences such of farms and wildlife parks to further enhance their learning and knowledge and these are different in each year group to provide a wide range of experience. They learn about Scientists in each topic to develop and aspire to careers in the future.

In the EYFS, children explore the different aspects through inputs, play and by visitors coming into school or school trips. We also follow children's ideas and develop them further when needed

In Key Stage 1 start the lesson with prior knowledge taught to assess learning, they also have before and after unit tests to see what knowledge they have required, any gap or misconceptions that still need addressing throughout the year and the use of the sticky 5 to recap learnt knowledge.

The 3C's (aims)	Enrichment opportunities	Assessment/sticky knowledge
We are Caring We are Creative We are Confident The 3R's (Values) We are Respectful We are Responsible We are Resilient	<ul style="list-style-type: none"> • <u>White post farm (Nursery)</u> • <u>Broomhill farm (Nursery)</u> • <u>Jungle Jo (Foundation 2)</u> • <u>The Old Barn (Foundation 2)</u> • <u>Yorkshire wildlife park (Y1)</u> • <u>Sherwood Pines (Y1)</u> • <u>Brooke Farm (year 2)</u> • <u>Zoo Lab (Year 2)</u> • <u>Great Fire of London</u> • <u>Science Tots afterschool club (F2-Y2)</u> 	<ul style="list-style-type: none"> • Year 1 and Year 2 – Big 5 questions at the end of each Science unit. • Mini pre/post test • Assessment grid to know % of children that are meeting ARE – subject leader to identify any areas where a large % of children have gaps.

<p>Concepts</p> <p>Life Matter Habitation Being Scientific</p>	<p>Local community links</p> <p>Titchfield Park</p>	<p>Cross Curricular Links</p> <p>Art (observational drawings) History Topics (Great Fire/WWI) Geography (Rainforests/Dinosaurs/Africa/Icy Issues) Maths – data handling, measurements PSHE</p>
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EYFS Curriculum

Nursery	Foundation 2
<p>Communication & language - Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"</p> <p>Personal, social & emotional -Make healthy choices about food, drink, activity and tooth brushing.</p> <p>Understanding of the world - 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. 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</p>	<p>Communication & language - Learn new vocabulary. Ask questions to find out more and to check what has been said to them. Articulate their ideas and thoughts in well-formed sentences. Describe events in some detail. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. Use new vocabulary in different contexts.</p> <p>Personal, social & emotional - Know and talk about the different factors that support their overall health and wellbeing: regular physical activity, healthy eating, tooth brushing, sensible amounts of 'screen time', having a good sleep routine, being a safe pedestrian</p> <p>Understanding of the world - Explore the natural world around them. Describe what they see, hear and feel while they are 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.</p> <p>ELG</p> <p>Communication & Language – Listening, Attention & Understanding - Make comments about what they have heard and ask questions to clarify their understanding.</p> <p>Personal, Social & Emotional – Managing Self -Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices</p> <p>Understanding the World – The Natural World - 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.</p>

In eyfs

- show curiosity and ask questions
- make observations using their senses and simple equipment
- make direct comparisons
- use equipment to measure
- record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets
- use their observations to help them to answer their questions
- talk about what they are doing and have found out
- identify, sort and group.

Scientific Enquiry

Investigations we carry out at Butlers Hill,

In the Foundation Stage, we follow enquiry led by us the adults and also child led during their play, we ensure all aspects of Science are covered through our curriculum and the Characteristics of Learning ready for children to further develop in Key Stage 1.

Year 1

<p>Autumn 1 – Michael Recycle – How to care for my World? (Geography, Caring) Materials – Sorting and classifying recyclable materials – recording findings on bar chart Scientist Leo Baekeland – invented man made plastics –Link to recycling and oceans and plastics</p>
<p>Autumn 2 – where will the polar bears live – Icy Issues – Global warming (Literacy –report and fictional character Animals - comparing and classifying animals</p>
<p>Spring 1 – one plastic bag Seasonal changes- bar charts showing hours of sunshine(Yorkshire Wildlife Park)</p>
<p>Spring 2 – Grace and family (History –timeline/change over time) Senses/humans – who stole the tarts? Animals found in hot places (recap animal classification)</p>
<p>Summer 1- World War 2 – History/DT/PE Plants- Eating plants linked to victory- making sandwiches/where food comes from (Titchfield Park)</p>
<p>Summer 2 – pond life - Ugly duckling/Art work and observational drawings pond life and plants Animals/plants – Growing herbs/beans. How much water a plant drinks in 24 hours? (pond dipping Sherwood Pines)</p>

Seasonal changes is taught throughout the year drawing observational drawings of a silver birch tree, lifecycle of blossom, spring flowers (name/national flowers), trees (sticky knowledge)

Year 2

<p>Autumn 1- Where in the world am I? (Brooke Farm) DT links –Balanced diet Animals including humans – favourite juice and comparing results How to remove bacteria from our hands?</p>
<p>Autumn 2 – Why was the fire so great? (links to History) Materials – which materials keep up waterproof? Uses of plastic, comparing modern to Tudor house Scientists – John McAdam – inventor of roads, Charles McIntosh and John Dunlop – impact on modern life</p>
<p>Spring 1 – Why save the rainforest? (Zoo lab) Living things and habitats – rainforest compare to local area summer 1</p>
<p>Spring 2 – Could you live like Robin Hood? (links to Art) Plants – What plants need to grow (test in different conditions) planting seeds and bulbs</p>
<p>Summer 1 – Who is Zachariah Green? (Titchfield Park) Living things and habitats – bug hunt/oak tree – Rainforest (spring 1) compare to local area)</p>
<p>Summer 2 – Were Dinosaurs real? (fossils workshop)/ Art work (clay) Scientists and Inventors part of our school Dream big, aim high – inspiring children for the future</p>

core knowledge Science



Year 1 Plants (concept 1 - life)		
<p>NC Objectives</p> <ul style="list-style-type: none"> • Identify common wild and garden plants, including deciduous and evergreen trees. • Identify and describe the basic structure of a variety of common flowering plants. • Identify and name the roots, trunk, branches and leaves of trees. 	<ul style="list-style-type: none"> • Know a rose, thistle, shamrock and daffodil by sight. • Know an oak tree, a silver birch tree, sycamore and willow tree by sight. • Know that evergreen trees maintain their leaves throughout the year and that deciduous trees shed their leaves in autumn. • Know that a flowering plant consist of roots, stem, leaves and flowers. • Know smells of different herbs 	
Prior Knowledge	Year 2 Knowledge	Vocabulary
<ul style="list-style-type: none"> • Make observational drawing of plants • Identify some names of plants, trees and flowers • Describe different plants, trees and flowers. 	<ul style="list-style-type: none"> • Know that plants grow from seeds/bulbs. • Know that plants need light, water and warmth to grow and survive • Know that flowers produce (reproduction) • Know that different parts of the plants can be eaten (leaves, stems, roots, seeds, fruit) • Know that plants that require light, food or air to grow. 	<p>Year 1 Leaf/leaves, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud Names of trees in the local area (oak tree, silver birch, sycamore and willow), water, soil, sunlight Names of garden and wild flowering plants in the local area (shamrock, thistle, rose and Daffodil)</p> <p>Year 2 As above for year 1 and plant root bud fruit germinate bulb life minerals pips Spring daffodils snowdrops dandelion daisy observe measure elongated temperature Stigma, petals, ovary, ovule, filament, anther, pollen, sepal light, shade, sun, warm, cool, water, grow, healthy</p>

Year 2 Plants (concept 1 – life)	
NC Objectives	Year 2 Knowledge

<ul style="list-style-type: none"> • Observe and describe how seeds and bulbs grow into mature plants. • Describe how plants need water, light and warmth to grow and stay healthy. 	<ul style="list-style-type: none"> • Know that plants grow from seeds/bulbs. • Know that plants need light, water and warmth to grow and survive • Know that flowers produce fruits. • Know that different parts of the plants can be eaten (leaves, stems, roots, seeds, fruit) • Know that plants require light, food or air to grow. • Know lifecycle of the bean and sunflower 	
Prior Knowledge	Lower Key Stage 2	Vocabulary
<ul style="list-style-type: none"> • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • Identify and describe the structure of a variety of common flowering plants (flower, stem, leaves and roots). 	<ul style="list-style-type: none"> • Identify and describe the functions of different parts of the flowering plant: roots, stem/trunk, leaves and flowers • 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. • Explore the life cycle of flowering plants, including: pollination, seed formation and seed dispersal • Investigate the way in which water is transported between plants. 	<p>Year 1 Adaption, Habitat, Animal, Mammal, Reptile, Bird, Skin, Fur, Feathers, Herbivore</p> <p>Year 2 Offspring, reproduction, growth, child, adult, bulb, seed, survival, temperature.</p>

Year 1 – Animals, including Humans (Concept 1 – life, concept 3 - habitation)		
NC Objectives	Year 1 Knowledge	
<ul style="list-style-type: none"> • Identify common animals including fish, amphibians, reptiles, birds and mammals. • Identify common animals that are carnivores, herbivores and omnivores. • Describe and compare the structure of a variety of common animals (fish, amphibians (summer 2), reptiles, birds and mammals including pets) • Identify and label the basic parts of the human body and say which part of 	<ul style="list-style-type: none"> • Know that a salmon is an example of fish, a frog is an example of an amphibian; a gecko is an example of a reptile; a parrot is an example of a bird; a badger and a human are examples of a mammal. • Know that herbivorous animals eat plants; a carnivorous animal eats other animals; omnivorous animals eat both animals and plants • Know that many humans are examples of omnivores. • Know that fish, amphibians, reptiles, birds and mammals are similar in that they have internal skeletons and organs; these are known as vertebrates. • Know that fish are different in having gills so that they can breathe in water. • Know that amphibians are different in that they begin their lives with gills but then develop lungs and breathe on land. • Know that birds are different to other animals in that they have wings (<i>Inc.</i> penguins) • Identify that feet, legs, arms, hands, torso, head, skin, ears, eyes, nose, mouth and tongue are parts of the body. • Know that eyes are associated with sight, ears with sound, nose with smell, tongue with taste and skin with touch. • Know the lifecycle of a penguin • Understand food chains using omnivore, carnivore and herbivores • Know how animals adapt to their habitats 	

the body is associated with each sense.

Prior Knowledge	Year 2 Knowledge	Vocabulary
<ul style="list-style-type: none"> • Identified different parts of their body. • Understanding of healthy food and the need for fruit and vegetables in their diet. • Demonstrated care and concern for living things. • Understands the effects exercise has on their bodies. • Understands that humans grow and change. 	<ul style="list-style-type: none"> • Know that animals, including humans, have offspring which grow into adults. • Know the basic stages in a life cycle for animals, including humans. • 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. 	<p>Year 1 Adaption, Habitat, Animal, Mammal, Reptile, Bird, Skin, Fur, Feathers, Herbivore, Carnivore, Omnivore, Vertebrate, Invertebrate, Predator, Hunter, Food chain, Similarities, Differences, Beak, Gill, Wing, Shell, Tail, Scale, blubber, Amphibian, Reptile, Skin, Egg, Tadpole, Froglet</p> <p>Mammal – hair skin milk young Life-cycle / changes over time (history links), Old, Young, Baby, Toddler, Teenager, Adult, Elderly, Infant, Feeling, Sight, Features, Similarities, Differences, Body parts – their functions, Hearing, Smell, Touch, Senses</p> <p>Year 2 Air food water Baby toddler child teenager adult life cycle bar chart centimetres metre stick height balanced diet healthy food groups fruit vegetables vitamins minerals cereals carbohydrates energy meat, fish eggs protein dairy products high energy foods fats sugars food pyramid exercise</p>

Year 2 – Animals, including Humans

NC Objectives	Year 2 Knowledge	
<ul style="list-style-type: none"> • Observe that animals, including humans, have offspring which grow into adults . • 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. 	<ul style="list-style-type: none"> • Know that plants and animals produced offspring that grow into adults. • Know that animals, including humans, need food, water and air to survive. • Know the basic food groups: fruit and vegetables, carbohydrates, protein, dairy, fat and sugary foods. • Know that more than half of our diet should be made up of carbohydrates, fruit and vegetables. • Know that fats and sugary foods should be eaten rarely. • Know that humans need to exercise regularly to be strong and fit. • Know that keeping clean, including washing and brushing teeth, is an important part of staying healthy. 	
Prior Knowledge	Year 3 Knowledge	Vocabulary
<ul style="list-style-type: none"> • Identified common animals including fish, amphibians, reptiles, birds and mammals. . • Identified common animals that are carnivores, herbivores and omnivores. • Described and know the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • Know the basic parts of the human body and say which part of the body is associated 	<ul style="list-style-type: none"> • Know 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. • Know that humans and some other animals have skeletons and muscles for support, protection and movement. • Describe the simple function of the basic parts of the digestive system in humans. • Identify the different types of teeth in humans and their simple functions. • Construct and interpret a variety of food chains, identifying producers, predators and prey. 	<p>Year 1 energy, growth, habitat, fish, amphibian, reptile, bird, mammal, offspring, carnivore, herbivore, omnivore, vertebrate, skeleton, organ</p> <p>Year 2 Air food water Baby toddler child teenager adult life cycle bar chart centimetres metre stick height balanced diet healthy food groups fruit vegetables vitamins minerals cereals carbohydrates energy meat, fish eggs protein dairy products high energy foods fats sugars food pyramid exercise</p>

Year 2 – Living Things and their Habitats

NC Objectives	Year 2 Knowledge	
<ul style="list-style-type: none"> • 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 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. 	<ul style="list-style-type: none"> • Know that living things move, grow, consume nutrients and reproduce; that dead things used to do these things, but no longer do; and that things that never lived have never done these things. • Know that polar bears are an example of an animal adapted to its environment. • Know the microhabitat suited to a mealworm • Know that rainforest animals adapt to their rainforest habitat using the knowledge from Year 1 (mammal, reptile, fish, bird, amphibians) • Know that plants absorb energy from the Sun; that this energy is consumed by herbivorous animals; and that carnivorous animals eat other animals. • Know that the arrows on a food chain show the direction that the energy travels. • Know the food chains in the rainforest/local area • Know the Life cycle of a tree frog/caterpillars/butterflies 	
Awe and Wonder	Year 3 Knowledge	Vocabulary
<ul style="list-style-type: none"> • Which animals hunt, and which animals are hunted? Why? • What animals live in our school environment? • How are animals and plants 'adapted' to live in their habitats • How do seasons affect our animals and plants? • Which animals hibernate and why? • Why do snails hibernate, but slugs don't? 	<ul style="list-style-type: none"> • Recognise that living things can be grouped in a variety of ways. • Explore and use classification keys to help group, identify and name a variety of living things in the local environment. • Recognise that environments can change and that this can sometimes pose dangers to living things. 	<p>Year 1 habitat, growth, absorption, herbivore, carnivore, omnivore, Trees can be deciduous or evergreen.</p> <p>Year 2 Living Dead Alive Plants Animals Offspring Adult Survival Identify Classify Rainforest Adapt Depend Food Chain Life cycle Organism Dependency Food web Habitat microhabitat alive dead never been alive life processes oxygen energy shelter reproduce survival interdependent seed dispersal predator prey minibeasts cleavers burdock warbler oak tree meal worm choice chamber meal beetle</p>

Year 1 – Seasons

NC Objectives	Year 1 Knowledge	
<ul style="list-style-type: none"> • Observe changes across the 4 seasons • Observe and describe weather associated with the seasons and how day length varies. 	<ul style="list-style-type: none"> • Know that days are longer in the summer and shorter in winter • Know that weather changes through the year, getting hotter in the summer and colder in the winter • Know there are four seasons in each year: Autumn, Summer, Spring and Winter. • Know daylight is when it is light outside. • Know the amount of daylight changes with each season. • Know the weather includes the temperature outside, the wind direction and the rain cloud, snow and sun. • Know in winter, the weather is colder. It is cold enough to freeze, frost or ice. • Know the day is shortest in the year and the nights are the longest. 	
Prior Knowledge	Awe and Wonder	Vocabulary
<ul style="list-style-type: none"> • Developing an understanding of change. • Observe and explain why certain things occur (<i>e.g. leaves falling off trees, weather changes</i>). • Observe similarities, differences, patterns and change. • Question about the place they live or the natural world. 	<ul style="list-style-type: none"> • Why do more frequent days of rain saturate the ground? • How long does it take for the ground to dry after it has been raining? • How does rainfall and temperature change over time in our school? • Which leaf is the strongest/best shade cover/best at directing water? • What is the purpose of leaves? • Why do you think leaves turn brown in Winter? • What colours can we find outside? Does this change across the seasons? • What effect does rain have on the environment? 	<p>Year 1 Season, Spring, Summer, Autumn, Winter, Changes, Weather, Rainfall, Windy, Sunshine, Hot, cold, hibernation, emigration</p>

Year 1 – Everyday Materials (concept 2 – matter)

NC Objectives	Year 1 Knowledge	
<ul style="list-style-type: none"> • 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 everyday materials on the basis of their simple physical properties 	<ul style="list-style-type: none"> • Know from observation how to distinguish between materials made of wood, plastic, glass, metal, water, rock • Know that an object is made from/of a material • Know that materials can be hard, soft, strong, weak, absorbent, heavy, light, solid and runny, smooth and rough; these descriptions denote the properties of a material. 	

Prior Knowledge	Year 2 Knowledge	Vocabulary
<ul style="list-style-type: none"> • Ask questions about the place they live. • Discuss changes they have observed such as natural and found objects. • Manipulate materials to achieve an effect. 	<ul style="list-style-type: none"> • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Explore how shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<p>Year 1 matter, property, wood, plastic, glass, metal, water, rock, hard, soft, bumpy, smooth, rough, rigid, flexible, transparent, waterproof/not waterproof, absorbent, opaque.</p> <p>Fabric, Leather, Glass, Metal, Brick, Stone, Clay, Wood, Liquid, Sand, Man-made, Natural</p> <p>Year 2 Materials Fabric wood glass plastic card metal clay paper concrete rock rubber fur feathers rubber wool cotton carpet brick leather Properties bendy hard Strong Transparent Opaque Flexible Rigid Elastic Waterproof liquid rigid runny soft rough sharp shiny dull smooth slimy solid stretchy Attributes Communicate Natural Manmade Stretch Push Pull Twist Shape Altered Force Elastic Explanation</p>

Year 2 – Use of Everyday Materials (concept 2 – matter)

NC Objectives	Year 2 Knowledge	
<ul style="list-style-type: none"> • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses • Compare how things move on different surfaces. • Discover how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching 	<ul style="list-style-type: none"> • Know that materials can have useful properties for a purpose (including being waterproof, strong, hard, soft, flexible, rigid, light or heavy.) • Know that many types of plastic are waterproof, that steel (a type of metal) is strong, that rock is hard, that cotton wool is soft, that rubber is flexible, that rock is rigid, and that iron (a type of metal) is heavy. • Know that materials can be changed to by squashing, bending, twisting and stretching. 	
Prior Knowledge	Lower Key Stage 2 Knowledge	Vocabulary
<ul style="list-style-type: none"> • Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, metal, plastic, glass, water and rock, • Describe the simple physical properties of a variety of everyday materials. • Compare and group everyday materials on the basis of their simple properties. 	<p>States of matter</p> <ul style="list-style-type: none"> • Compare and group materials together, according to whether they are solids, liquids or gases. • 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 (°C). • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. <p>Rocks</p> <ul style="list-style-type: none"> • Compare and group different rocks on the basis of their appearance and simple physical properties. • Describe how fossils are formed when things that have lived are fossilized. • Recognise that soils are made from rocks and organic matter. 	<p>Year 1 matter, property, wood, plastic, glass, metal, water, rock, hard, soft, bumpy, smooth, rough, rigid, flexible, transparent, waterproof/not waterproof, absorbent, opaque.</p> <p>Fabric, Leather, Glass, Metal, Brick, Stone, Clay, Wood, Liquid, Sand, Man-made, Natural</p> <p>Year 2 Materials Fabric wood glass plastic card metal clay paper concrete rock rubber fur feathers rubber wool cotton carpet brick leather Properties bendy hard Strong Transparent Opaque Flexible Rigid Elastic Waterproof liquid rigid runny soft rough sharp shiny dull smooth slimy solid stretchy Attributes Communicate Natural Manmade Stretch Push Pull Twist Shape Altered Force Elastic Explanation</p>

Working Scientifically (concept 4 Being Scientific – investigating in a systematic and methodical way)

EYFS	Year 1	Year 2
<p>Questioning To demonstrate curiosity about the world around them.</p>	<p>Questioning Ask simple questions stimulated by their exploration of their world:</p> <ol style="list-style-type: none"> 1. Everyday materials 2. Animals / humans 3. Plants 4. Seasons 	<p>Questioning Ask simple questions and recognising that some can be answered in different ways:</p> <ol style="list-style-type: none"> 1. Use of every day Materials 2. Animals inc. humans 3. Plants 4. Living things and their habitats
<p>Observe, measuring & using equipment Use senses and simple measuring equipment to explore the world around them.</p>	<p>Observe, measuring & using equipment -Make measurements using non-standard units of measurement. <i>Measuring amount of water in 24 hours a plant drink</i> -Observe closely using their senses and simple equipment – <i>Spring 2 – senses tests</i></p>	<p>Observe, measuring & using equipment -Make measurements using non-standard units of measurement. -Use equipment for observation and measuring correctly -Observe closely <i>Autumn 1 – measuring feet/height using metre stick</i></p>
<p>Performing simple tests Respond to prompts to say what happened to objects, living things or events.</p>	<p>Performing simple tests Perform simple test to explore a question or idea suggested to them with support. <i>Autumn 1 – Michael Recycle – which material is most absorbent?</i> <i>Autumn 2 – Icy Issues – Does the ice melting cause sea levels to rise?</i></p>	<p>Performing simple tests Identify things to measure or observe that are relevant to the question / idea they are investigating using a simple test. <i>Autumn 1 – best way to remove bacteria from hands</i> Suggest a practical way of how to find things out to answer the question they are investigating.</p>
<p>Identify and classifying Sort / match objects, living things and events in their own way.</p>	<p>Identify and classifying Recognise basic features, similarities and differences of objects, events or living things. Sort and group objects in different ways <i>Autumn 1 – sorting recyclable items into materials</i></p>	<p>Identify and classifying Make comparisons between basic features / components of objects, living things to support identification / and or classification. <i>Autumn 1 – sorting and classifying foods</i> <i>Autumn 2 – sorting toys/materials</i> <i>Spring 1 – sorting living/non living</i> Sort and group objects or living things on the basis of their observations and explain why.</p>

<p>Using evidence for conclusions/answering questions Talk about what they have found out or what they think might happen based on their own experiences with support and prompting</p>	<p>Using evidence for conclusions/answering questions Use their ideas to suggest answers to questions</p> <p>Be able to say what has changed when observing objects, events (seasons) or living things Seasonal changes throughout the year SLC opportunities throughout each topic</p>	<p>Using evidence for conclusions/answering questions Use their observations and ideas to suggest answers to questions. Listing healthy lunch box Similarities/differences –human/rainforest animal</p> <p>Respond to suggestions to identify some evidence needed to answer a question.</p>
<p>Gathering and Recording Data Talk to an adult about what has been found out.</p>	<p>Gathering and Recording Data Present evidence they have collected in simple templates provided to them to help in answering questions.</p> <p>Simple tables, charts or diagrams Bar charts, venn diagrams, tally charts, identification charts, human bar chart</p>	<p>Gathering and Recording Data Gather and record data in appropriate ways with increasing independence to help in answering questions.</p> <p>Draw tables bar charts Autumn 1 Favourite juice – pictograms, bar charts, tally charts Autumn 2 – waterproof experiment – materials keep us dry Spring 2 – conditions of growth of plants Summer 1 – tally charts/photos of findings</p>

