



Cycle A Year 1/2		Cycle B Year 1/2			Through 1 year in cycle A or B - Seasonal Changes
Programme of study	Materials	Plants	Living things and their habitats	Animals inc Humans	
Coverage	Properties of different materials and changes of materials	Identifying trees and plants	Habitats, micro habitats and lifecycles	The human body and senses. Name common animals. Exercise, health and babies	Weather forecasts and seasonal changes
Content (NC Objectives)	<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 together a variety of everyday materials on the basis of their simple physical properties. ✓ 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. 	<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 basic structure of a variety of common flowering plants, including trees. ✓ 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. 	<ul style="list-style-type: none"> ✓ 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. ✓ 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 ✓ explore and compare the differences between things that are living, dead, and things that have never been alive 	<ul style="list-style-type: none"> ✓ identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. ✓ 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) ✓ 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. 	<ul style="list-style-type: none"> ✓ observe changes across the four seasons ✓ observe and describe weather associated with the seasons and how day length varies.
Notes and guidance	<ul style="list-style-type: none"> ✓ explore, name, discuss and raise and answer questions about everyday materials to become familiar with the names of materials and properties such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent. ✓ explore and experiment with a wide variety of materials, not only those listed in the programme of study, but including for example: brick, paper, fabrics, elastic, foil. 	<ul style="list-style-type: none"> ✓ use the local environment throughout the year to explore and answer questions about plants growing in their habitat. ✓ observe the growth of flowers and vegetables that they have planted. ✓ become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem). 	<ul style="list-style-type: none"> ✓ be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. ✓ be introduced to the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'micro-habitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). ✓ compare animals in familiar habitats with animals found in less familiar habitats, for 	<ul style="list-style-type: none"> ✓ learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes. ✓ use the local environment throughout the year to explore and answer questions about animals in their habitat. ✓ understand how to take care of animals taken from their local environment and the need to return them safely after study. ✓ become familiar with the common names of some fish, amphibians, 	<ul style="list-style-type: none"> ✓ observe and talk about changes in the weather and the seasons. <p>Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.</p>

	<ul style="list-style-type: none"> ✓ identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass). ✓ think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials. ✓ find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam. 	<ul style="list-style-type: none"> ✓ use the local environment throughout the year to observe how different plants grow. ✓ be introduced to the requirements of plants for germination, growth and survival, as well as to the processes of reproduction and growth in plants. ✓ <i>Note: Seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them.</i> 	<p>example, on the seashore, in woodland, in the ocean, in the rainforest.</p> <ul style="list-style-type: none"> ✓ should raise and answer questions that help them to become familiar with the life processes that are common to all living things. ✓ raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other, for example, plants serving as a source of food and shelter for animals. 	<p>reptiles, birds and mammals, including those that are kept as pets.</p> <ul style="list-style-type: none"> ✓ be introduced to the importance of exercise and nutrition for humans. ✓ be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs. Growing into adults can include reference to baby, toddler, child, teenager, adult. The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. ✓ be introduced to the basic needs of animals for survival. 	
<p>Working Scientifically</p>	<ul style="list-style-type: none"> ✓ asking simple questions and recognising that they can be answered in different ways <ul style="list-style-type: none"> ✓ observing closely, using simple equipment ✓ performing simple tests ✓ identifying and classifying ✓ using their observations and ideas to suggest answers to questions <ul style="list-style-type: none"> ✓ gathering and recording data to help in answering questions. 				
<ul style="list-style-type: none"> ✓ performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?' ✓ comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs) ✓ observing closely, identifying and classifying the uses of different materials, and recording their observations. 	<ul style="list-style-type: none"> ✓ observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants. ✓ describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees. ✓ compare and contrast what they have found out about different plants. ✓ observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth 	<ul style="list-style-type: none"> ✓ construct a simple food chain that includes humans (e.g. grass, cow, human). ✓ describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there. ✓ sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. ✓ describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in 	<ul style="list-style-type: none"> ✓ using their senses to compare different textures, sounds and smells. ✓ using their observations to compare and contrast animals at first hand or through videos and photographs ✓ describing how they identify and group them ✓ grouping animals according to what they eat. ✓ observing, through video or first-hand observation and measurement, how humans, grow ✓ asking questions about what humans need to stay healthy ✓ suggesting ways to find answers to their questions. observing, through video or first-hand observation and measurement, how different animals grow 	<ul style="list-style-type: none"> ✓ keep records of how plants have changed over time, for example the leaves falling off trees and buds opening. ✓ making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change 	

		<ul style="list-style-type: none"> ✓ setting up a comparative test to show that plants need light and water to stay healthy. 	<ul style="list-style-type: none"> winter?' and talk about ways of answering their questions. ✓ describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there. 	<ul style="list-style-type: none"> ✓ asking questions about what things animals need for survival ✓ suggesting ways to find answers to their questions. 	
Identifying and Classifying	<ul style="list-style-type: none"> ✓ Focus on asking questions about the similarities and differences between things. ✓ Going outside to explore the world around them at all times of the year. ✓ Reporting by producing scientific drawings of their observations, increasing in fine detail. ✓ Developing scientific vocabulary. 				
	<ul style="list-style-type: none"> ✓ Which materials will float and which will sink? ✓ We need to choose a material to make an umbrella. Which materials are waterproof? ✓ Which materials are shiny and which are dull? ✓ Which materials will let electricity go through them, and which will not? 	<ul style="list-style-type: none"> ✓ How can we sort the leaves? ✓ How can we identify the trees that we observed on our tree hunt? 	<ul style="list-style-type: none"> ✓ How would you group these plants and animals based on what habitat you would find them in? ✓ How would you group things to show which are living, dead, or have never been alive? 	<ul style="list-style-type: none"> ✓ What are the names for all the parts of our bodies? ✓ How can we organise all the animals in the pet shop? ✓ Is there the same level of light in the evergreen wood compared with the deciduous wood? ✓ Which offspring belongs to which animal? 	<ul style="list-style-type: none"> ✓ How would you group these things based on which season you are most likely to see them in?
Comparative testing	<ul style="list-style-type: none"> ✓ Report findings using tally charts, pictograms, or block charts 				
	<ul style="list-style-type: none"> ✓ Which materials are the most flexible? ✓ Which materials are the most absorbent? ✓ Which shapes make the strongest paper bridge? ✓ Which material would be best for the roof of the little pig's house? 	<ul style="list-style-type: none"> ✓ Which type of compost grows the tallest sunflower? ✓ Which tree has the biggest leaves? ✓ Do cress seeds grow quicker inside or outside? 	<ul style="list-style-type: none"> Do amphibians have more in common with reptiles or fish? 	<ul style="list-style-type: none"> ✓ Is our sense of smell better when we can't see? ✓ Do bananas make us run faster? 	<ul style="list-style-type: none"> ✓ In which season does it rain the most?
Pattern seeking	<ul style="list-style-type: none"> ✓ Begin to look for patterns in their measurements and observations. ✓ Describe them both orally and in writing. ✓ Start to think about cause and effect relationships. ✓ Start to use appropriate vocabulary to discuss these. 				
	<ul style="list-style-type: none"> ✓ Is there a pattern in the types of materials that are used to make objects in a school? ✓ Do magnetic materials always conduct electricity? 	<ul style="list-style-type: none"> ✓ Is there a pattern in where we find moss growing in the school grounds? ✓ Do bigger seeds grow into bigger plants? 	<ul style="list-style-type: none"> ✓ What conditions do woodlice prefer to live in? ✓ Which habitat do worms prefer – where can we find the most worms? 	<ul style="list-style-type: none"> ✓ Do you get better at smelling as you get older? ✓ Which age group of children wash their hands the most in a day? 	<ul style="list-style-type: none"> ✓ Do trees with bigger leaves lose their leaves first in autumn? ✓ Does the wind always blow the same way?
Research	<ul style="list-style-type: none"> ✓ Pose their own 'big question'. ✓ Interpret the information they find and consider its relevance in answering their questions. 				

	<ul style="list-style-type: none"> Use a range of secondary sources, including books, websites, and video. Listen to presentations from experts and science professionals to get their information, or ask them questions in interviews and letters. 				
	<ul style="list-style-type: none"> How are bricks made? Which materials can be recycled? How have the materials we use changed over time? 	<ul style="list-style-type: none"> What are the most common British plants and where can we find them? How does a cactus survive in a desert with no water? 	<ul style="list-style-type: none"> How does the habitat of the Arctic compare with the habitat of the rainforest? How are plastics made? (living vs non-living vs dead) 	<ul style="list-style-type: none"> How are the animals in different to the ones that we find in Britain? Do all animals have the same senses as humans? What food do you need in a healthy diet and why? What do you need to do to look after an egg/chick and keep it healthy? 	
Ideas over time	<ul style="list-style-type: none"> Report findings using posters, leaflets, newspapers, reports or letters Timeline of scientists 				
	<ul style="list-style-type: none"> How are building materials different now to when Queen Elizabeth I was on the throne? What ideas did Chinese monks have in 800 CE that led to their discovery of gunpowder? How has glass making changed since it was first made in ancient Egypt? How have the materials that humans use for tools changed since the Stone Age? 	<ul style="list-style-type: none"> How did Beatrix Potter help our understanding of mushrooms and toadstools? What ideas did botanist Arthur Tansley have about habitats in 1935? 	<ul style="list-style-type: none"> What ideas did Charles Darwin have about evolution and adaptation? How have the materials we use changed over time? 	<ul style="list-style-type: none"> In the 1500s, tobacco plants were grown in Britain for medicine. How have our ideas about these plants changed? How did French doctor Renè Laennec's ideas improve medicine? What strange ideas did Italian scientist Luigi Galvani have about animals in 1780? Why did he think that? When the first fizzy drink machine was invented in 1775, scientist Joseph Priestley said it was the cure to many health problems. What ideas do scientists have about fizzy drinks today? How did George Washington Carver use science to improve farming in America? 	
End of Unit TAPS Assessments	<p>Describing and sorting materials</p> <ul style="list-style-type: none"> Can children carry out a simple test? Can children use test results to group materials into those which float or sink? <p>Materials and light</p> <ul style="list-style-type: none"> Can children test the reflectiveness of materials? Can children compare materials on the basis of their reflectiveness? Can children discuss different ways to test reflectiveness? <p>Waterproof Materials</p> <ul style="list-style-type: none"> Can children discuss/use different ways to test how waterproof materials are? 	<p>Plants</p> <ul style="list-style-type: none"> Can children make careful observations of similarities and differences between plants? Can children label the basic parts of a plant? <p>Comparing plant growth in different conditions</p> <ul style="list-style-type: none"> Can children observe closely, noticing differences and similarities? Can children measure and compare the height of plants? 	<p>Adaptation</p> <ul style="list-style-type: none"> Can children explain adaptation Woodlice Habitat Can children identify where plants and animals live? Can children make a record of where plants and animals live? Can children discuss why they might live in chosen habitat?.... 	<p>Animal body parts</p> <ul style="list-style-type: none"> Can the children label basic parts of the human body? Can the children say which part of the body is associated with each sense? <p>Animal classification</p> <ul style="list-style-type: none"> Can the children name a variety of animals including fish/amphibians / reptiles/ birds/ mammals? Can the children classify animals according to different animal groups and/or what they eat? <p>Comparing Handspans</p> <ul style="list-style-type: none"> Can children compare different hand spans? 	<p>Seasonal Change</p> <ul style="list-style-type: none"> Can children observe and record changes across the seasons? Can children observe and describe the weather associated with each season and how the day length varies?

	<ul style="list-style-type: none"> ✓ Can children compare materials on the basis of waterproofness? 			<ul style="list-style-type: none"> ✓ Can children suggest answers to their questions about hand spans? <p>Nature Spotters</p> <ul style="list-style-type: none"> ✓ Can children use spotter sheets to identify plants/animals? ✓ Can children identify the types of plants/animals they are looking for? 	
Additional TAPS activities	<ul style="list-style-type: none"> ✓ Explore a range of materials and describe how they look and feel. ✓ Sorting materials using two opposite properties. ✓ Test materials to see if they are suitable for a boat. ✓ Ask children to sort the materials into most reflective and least reflective. ✓ Make an umbrella for a teddy – which is the best material – investigate. ✓ Sort materials into magnetic or non-magnetic ✓ Discussions to talk about suitability of materials for a project eg building a house for a lego figure. ✓ Test different papers to see how waterproof they are and then make their own record of their findings. ✓ Materials hunt around school and explain suitability. ✓ Rocket mice investigation (forces/materials) 	<ul style="list-style-type: none"> ✓ Take photos of plants and make into a class book with scribed comments. ✓ Collect leaves, observe features and identify. ✓ Use a range of materials to build a label a flowering plant. ✓ Draw seeds before and after they have grown, observing changes. ✓ Observe plant growth and then order plant life cycle. 	<ul style="list-style-type: none"> ✓ Explore a local habitat and create a map of the plants and animals they find. ✓ Sorting pictures of objects into living and non-living and explaining why 	<ul style="list-style-type: none"> ✓ Make a model person using clay or plasticine and label. ✓ Group discussion about animals and groups. ✓ Children select from a range of pictures and labels to sort animals into groups ✓ Try out a range of exercises and discuss the effect on their body.. ✓ Sort and sequence life cycles. ✓ Match offspring to adults. 	<ul style="list-style-type: none"> ✓ Look at a tree now and in a different season and explain what has happened.
Investigations that work well	<ul style="list-style-type: none"> ✓ Making a boat (paper bowls, takeaway containers, wooden lollisticks) ✓ Making houses for the 3 Pigs (bundled straws and kebab sticks, sugar cubes and dienes). Puffed by flapping a whiteboard, but would be better with bellows of some sort. 				