



Year 2 Autumn Science: Chemistry Materials	
Previous learning	
<p>In Year 1, the children learnt that materials have different properties. In EYFS, children learnt that some materials are magnetic and some materials are non-magnetic.</p> <p>This project teaches children about the uses of everyday materials and how materials' properties make them suitable or unsuitable for specific purposes. They begin to explore how materials can be changed.</p>	
Substantive Knowledge in Science	Disciplinary knowledge in Science
<p>Some objects and materials can be changed by squashing, bending, twisting, stretching, heating, cooling, mixing and being left to decay.</p> <p>A material's physical properties make it suitable for particular purposes, such as glass for windows and brick for building walls.</p> <p>Many materials are used for more than one purpose, such as metal for cutlery and cars. Recycling is making old, used materials into new objects.</p>	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Identify and classify.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p>
Lesson 1	Exploring everyday materials <ul style="list-style-type: none"> To observe everyday materials in and around my school.
Lesson 2	Bending, stretching, twisting and squashing <ul style="list-style-type: none"> To test materials and understand that they can be shaped in different ways.
Lesson 3	Linking properties to uses <ul style="list-style-type: none"> To identify and compare the suitability of a variety of everyday materials.
Lesson 4	Testing paper <ul style="list-style-type: none"> To notice patterns and relationships in their data and explain what they have done and found out using simple scientific language.
Lesson 5	The problem with materials <ul style="list-style-type: none"> To understand recycling and the problem with materials.
Lesson 6	Investigation <ul style="list-style-type: none"> To use different methods for testing the properties of materials and record my data.
Vocabulary	
window, brick, cutlery, cars, purpose, absorbent twist, squash, rigid, push, pull, flexible, stretch, twist, squash, bend	

Year 2 Autumn 2, Spring 1 Science: Biology Living things and their habitats	
Previous learning <p>In Year 1, the children learnt that the local environment is a habitat for living things and can change during the seasons.</p> <p>This project teaches children about habitats and what a habitat needs to provide. They explore local habitats to identify and name living things and begin to understand how they depend on one another for food and shelter.</p>	
Substantive Knowledge in Science <p>Living things are those that are alive. Dead things are those that were once living but are no longer. Some things have never been alive.</p> <p>Living things carry out the seven life processes: moving, breathing, using their senses, feeding, getting rid of waste, having offspring and growing.</p> <p>All living things live in a habitat to which they are suited and it must provide everything they need to survive.</p> <p>Local habitats include parks, woodland and gardens.</p>	Disciplinary knowledge in Science <p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Identify and classify.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p>
Lesson 1	Living and non-living things <ul style="list-style-type: none"> To sort the things into those that are living and those that are non-living.
Lesson 2	Identifying plants and animals in a habitat <ul style="list-style-type: none"> To identify and name a variety of plants and animals in their habitats, including microhabitats.
Lesson 3	Why do these animals live in this habitat? <ul style="list-style-type: none"> To understand why animals live in certain habitats.
Lesson 4	Creating food chains <ul style="list-style-type: none"> To 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.
Lesson 5	Animal adaptations <ul style="list-style-type: none"> To understand how animals become adapted to their habitat.
Lesson 6	Investigation <ul style="list-style-type: none"> To use information about animals, plants, food sources, water sources, and places of shelter to name a mystery habitat.
Vocabulary	
beaches, rainforests, deserts, oceans, microhabitat, living, alive, dead, near-alive	

Year 2 Autumn 1 Science: Biology Animals, including humans

Previous learning	
<p>In Year 1, pupils learnt that ears are used for hearing, eyes are used to see, the nose is used to smell, the tongue is used to taste and skin gives the sense of touch. They learnt that animals and plants are living things, and plants change over time.</p> <p>This project teaches children about the basic needs of humans for survival, including the importance of exercise, nutrition and good hygiene. They learn how human offspring grow and change over time into adulthood.</p>	
Substantive Knowledge in Science	Disciplinary knowledge in Science
<p>Human offspring go through different stages as they grow to become adults. These include baby, toddler, child, teenager, adult and elderly.</p> <p>A healthy lifestyle includes exercise, good personal hygiene, good quality sleep and a balanced diet.</p> <p>Germs are microorganisms that can cause illness in humans.</p> <p>Washing hands with soap and clean running water helps humans avoid getting ill and spreading germs to others.</p>	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Identify and classify.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p>
Lesson 1	<p>Human life cycle</p> <ul style="list-style-type: none"> To describe the stages of human development (baby, toddler, child, teenager, adult and elderly).
Lesson 2	<p>Nutrition</p> <ul style="list-style-type: none"> To discuss what we need to stay healthy
Lesson 3	<p>Exercise</p> <ul style="list-style-type: none"> To understand the importance of regular exercise for the heart and lungs.
Lesson 4	<p>Animals</p> <ul style="list-style-type: none"> To find out about and describe the basic needs of animals for survival (water, food and air).
Lesson 5	<p>Good hygiene routines</p> <ul style="list-style-type: none"> To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.
Lesson 6	<p>Investigation</p> <ul style="list-style-type: none"> To investigate and observe how easily germs can spread from person to person.
Vocabulary	
offspring, baby, toddler, child, teenager, adult, elderly,	

<p>Year 2 Summer 1 Science: Biology Plants</p>
Previous learning

In Year 1, the children learnt that plants are living things. Common plants include the daisy, daffodil and grass. Trees are large, woody plants and are either evergreen or deciduous. All living things (plants and animals) change over time as they grow and mature.

This project teaches children about the growth of plants from seeds and bulbs. They observe the growth of plants firsthand, recording changes over time and identifying what plants need to grow and stay healthy.

Substantive Knowledge in Science		Disciplinary knowledge in Science
<p>A habitat is a place where a living thing lives. A microhabitat is a very small habitat.</p> <p>Germination is the development of a plant from a seed.</p> <p>Plants need water, light and a suitable temperature to grow and stay healthy. Without any one of these things, they will die.</p> <p>Plants grow from seeds and bulbs. Seeds and bulbs need water and warmth to start growing (germinate). As the plant grows bigger, it develops leaves and flowers.</p>		<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Identify and classify.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p>
Lesson 1	<p>Plants and their parts</p> <ul style="list-style-type: none"> To know that objects, materials and living things can be looked at, compared and grouped according to their features. 	
Lesson 2	<p>Exploring seasonal plants</p> <ul style="list-style-type: none"> To identify and name a variety of plants and animals in their habitats, including microhabitats. 	
Lesson 3	<p>Germination investigation</p> <ul style="list-style-type: none"> To observe and describe how seeds and bulbs grow into mature plants. 	
Lesson 4	<p>What do plants need to grow?</p> <ul style="list-style-type: none"> To investigate what plants need to grow and be healthy. 	
Lesson 5	<p>Unusual plants</p> <ul style="list-style-type: none"> To use research to find out about the needs of plants. 	
Lesson 6	<p>Investigation</p> <ul style="list-style-type: none"> To use a range of methods (tables, charts, diagrams and Venn diagrams) to gather and record simple data with some accuracy. 	
Vocabulary		
warmth, germinate, leaves, flowers, branch, bulb, dormant flower bud, flowering plant, leaf, stem		

Year 2
Summer
Science: Biology
Living things and their habitats 2

Previous learning

In Year 1, the children learnt that ears are used for hearing, eyes are used to see, the nose is used to smell, the tongue is used to taste and skin gives the sense of touch. Children learnt that there are a variety of common animals that are carnivores, herbivores

and omnivores.

This project teaches children about growth in animals by exploring the life cycles of some familiar animals. They build on learning about the survival of humans by identifying the basic needs of animals for survival, including food, water, air and shelter.

Substantive Knowledge in Science		Disciplinary knowledge in Science
<p>Invertebrates are animals without a backbone. Invertebrates include worms, molluscs, crustaceans, insects, arachnids and myriapods.</p> <p>Microhabitats are small habitats within a larger habitat. Examples of microhabitats are rock pools, ponds, hedgerows and under logs.</p> <p>Animals need water, food, air and shelter to survive. Their habitat must provide all these things.</p> <p>All food chains start with a plant, followed by animals that either eat the plant or other animals.</p>		<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Identify and classify.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p>
Lesson 1	Habitats	
	<ul style="list-style-type: none"> To identify habitats that are suited for living things, describing how different habitats provide the basic needs of different kinds of animals 	
Lesson 2	Introducing invertebrates	
	<ul style="list-style-type: none"> To identify and name a variety of invertebrates. 	
Lesson 3	Microhabitats and food chains.	
	<ul style="list-style-type: none"> To understand and identify a range of microhabitats. 	
Lesson 4	Animal needs	
	<ul style="list-style-type: none"> To find out about and describe the basic needs of animals, including humans, for survival (water, food and air). 	
Lesson 5	Life process of reproduction	
	<ul style="list-style-type: none"> To describe the basic life cycles of some familiar animals (egg, caterpillar, pupa, butterfly; egg, chick, chicken; spawn, tadpole, froglet, frog). 	
Lesson 6	Insect life cycles	
	<ul style="list-style-type: none"> To describe the life cycle of an insect. 	
Vocabulary		
fish, amphibians, reptiles, birds, invertebrates, mammals, adult, arachnid, backbone, crustacean, egg, embryo, hatching, insect, metamorphosis, microhabitat, mollusc, myriapod, offspring, pupa, reproduction, worm		

Year 2
Summer 2
Science: Biology
Loving things and their habitats

Previous learning

In Year 1, the children learnt that ears are used for hearing, eyes are used to see, the nose is used to smell, the tongue is used to

taste and skin gives the sense of touch.

This project teaches children about the structure of animals, including fish, amphibians, reptiles, birds, mammals and invertebrates. They identify and describe their common structures, diets, and how animals should be cared for.

Substantive Knowledge in Science		Disciplinary knowledge in Science
<p>Many animals behave differently in different seasons in the United Kingdom.</p> <p>These different behaviours are linked to their life cycles, with spring often being the time for new offspring.</p> <p>Humans impact the physical environment in many ways: overpopulation, pollution, burning fossil fuels, and deforestation.</p> <p>Reusing, recycling, shopping locally and walking to school help support our habitats and environment.</p>		<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Identify and classify.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p>
Lesson 1	Seasonal changes	
	<ul style="list-style-type: none"> To explore how an animal behaves in each season. 	
Lesson 2	Human impacts	
	<ul style="list-style-type: none"> To discuss positive steps we can take to support our local habitats. 	
Lesson 3	School grounds	
	<ul style="list-style-type: none"> To plan and make their improvement to the school grounds to support local habitats. 	
Lesson 4	Habitat improvement	
	<ul style="list-style-type: none"> To understand how their habitat improvement will be constructed and how they will work safely. 	
Lesson 5	Sustainable materials	
	<ul style="list-style-type: none"> To compare the suitability of a range of everyday materials for particular uses, including wood, metal, plastic, glass, brick, rock, paper and cardboard. 	
Lesson 6	Evaluate quality and impact	
	<ul style="list-style-type: none"> To evaluate the quality and impact of their habitat improvement. 	
Vocabulary		
Earth, environment, landfill, natural resource, non-recyclable, pollution, recyclable, recycling, reduce, reuse, rubbish sustainability		