

Science Curriculum Year 1

Term	Autumn 1	Autumn 2	Summer 1	Summer 2
Topic	Seasonal Change	Everyday Materials	Plants	Animals including humans
Sticky Knowledge	<p>Weather can change</p> <p>There are lots of different types of weather: Rain, Sun, Cloud, Wind, Snow, etc</p> <p>Days are longer and hotter in the summer</p> <p>Days are shorter and colder in the winter</p> <p>There are four seasons: Spring, Summer, Autumn, Winter</p>	<p>There are many different materials that have different describable and measurable properties.</p> <p>Materials that have similar properties are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass).</p> <p>The properties of a material determine whether they are suitable for a purpose.</p>	<p>Plants grow from seeds/bulbs.</p> <p>Plants need water and light to grow and survive.</p> <p>Plants are important.</p> <p>We can eat lots of plants</p>	<p>There are many different animals with different characteristics</p> <p>Animals have senses to help individuals survive. When animals sense things they are able to respond.</p> <p>Animals need food to survive</p> <p>Animals need a variety of food to help them grow, repair their bodies, be active and stay healthy.</p>
Vocabulary	Seasons, spring, summer, autumn, winter, windy, sunny, overcast, snow, rain, temperature	Hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy/not bendy, waterproof/not waterproof, absorbent, opaque	Leaves, trunk, branch, root, seed, bulb, flower, stem, wild, garden, deciduous, evergreen	Amphibians, birds, fish, mammals, reptiles, carnivores, herbivore, omnivore, sight, hearing, touch, taste, smell, head, neck, ear, mouth, shoulder, hand, fingers, leg, foot, thumb, eye, nose, knee, toes, teeth, elbow
Prior Learning	<p>In Early Years children should: Developing an understanding of change.</p> <p>Observe and explain why certain things may occur (e.g. leaves falling off trees, weather changes).</p> <p>Look closely at similarities, differences, patterns and change.</p> <p>Comments and questions about the place they live or the natural world.</p>	<p>In Early Years children should: Be able to ask questions about the place they live.</p> <p>Talk about why things happen and how things work.</p> <p>Discuss the things they have observed such as natural and found objects.</p> <p>Manipulates materials to achieve a planned effect.</p>	<p>In EYFS children should: Make observations of plants.</p> <p>Learn some names of plants, trees and flowers.</p> <p>Name and describe different plants, trees and flowers.</p> <p>Show some care for the world around them.</p>	<p>In Early Years children should: Be able to identify different parts of their body</p> <p>Have some understanding of healthy food and the need for variety in their diets.</p> <p>Be able to show care and concern for living things.</p> <p>Know the effects exercise has on their bodies.</p> <p>Have some understanding of growth and change.</p> <p>Can talk about things they have observed including animals</p>
National Curriculum Objectives	<p>Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	<p>Distinguish between and object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, metal, plastic, glass, water and rock,</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials based on their simple properties</p>	<p>Identify and name a variety of common, wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants.</p> <p>Identify and name the roots, trunk, branches and leaves of trees.</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p>
Key Questions	<p>Why do more frequent days of rain saturate the ground?</p> <p>How long does it take for the ground to dry after it has been raining?</p> <p>Does more rain take longer to dry?</p> <p>Do countries with higher temperatures have less rain?</p> <p>How does rainfall and temperature change over time in our school grounds?</p>	<p>It is recommended that materials be taught three times through KS1. Give a theme for each topic e.g. buildings, exploration, toys, the seaside.</p> <p>Plan to investigate a couple of classes of materials and properties in each topic so children get a depth of experience each topic and cover all the classes of materials over the key stage</p> <p>Buildings</p> <p>Which rocks are the least crumbly?</p>	<p>How do plants grow?</p> <p>What do plants need to grow?</p> <p>Do all plants need water?</p> <p>Are all plants green?</p> <p>Why do seeds look different? Can plants grow as big in the shade?</p> <p>What is the biggest/smallest/smelliest (etc) tree/flower/plant on the planet?</p>	<p>What do animals eat?</p> <p>Do all animals eat the same food?</p> <p>Which of our senses is the most accurate at identifying food?</p> <p>Do all animals hunt?</p> <p>Why are animals different colours and patterns</p>

	<p>Which leaf is the strongest/best shade cover/best at directing water? What do you notice about different leaves? What purpose to leaves serve for a tree? 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? What would happen if there was too much rain? What would happen if there wasn't enough rain?</p>	<p>Which materials absorb the most water? Which type of brick would be the easiest to drag to make a pyramid? Which material would be the strongest to use as a floor tile? Toys & Nice things Which fabric would make the softest blanket? The baby has spilt her drink, which material would absorb the drink the best? We want to make a really slippery slide; which liquid would be best to use? Which chocolate will melt the fastest on a warm plate (a model of a warm hand) Which wrapping papers are strong enough to wrap and send a present? Clothing & Materials Which material could be used to make a waterproof hat for the teacher when she is on the playground at playtime? Which plastic would be flexible enough to make a belt? Which material could I wrap my ice egg / snowman in to stop it melting, or would it make it melt quicker? What could I wrap a chicken egg in to keep it warm when it is waiting to hatch? What could you paint on the runaway gingerbread man that would allow him to swim the river and get away from the fox and not turn to mush?</p>		
<p>Future Learning</p>	<p>In Year 3 children will: Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by a solid object Find patterns in the way that the sizes of shadows change.</p>	<p>In Year 2 children will: 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 shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>In Year 2 Children will: Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and warmth to grow and stay healthy.</p>	<p>In Year 2 children will: Know that animals, including humans, have offspring which grow into adults Know the basic stages in a life cycle for animals, including humans. Find out 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</p>

Science Curriculum Year 2

Term	Autumn 1	Autumn 2	Summer 1	Summer 2
Topic	All living things and their habitats	Uses of everyday materials	Plants	Animals including humans
Sticky Knowledge	Some things are living, some were once living but now dead and some things never lived. There is variation between living things. Different animals and plants live in different places. Living things are adapted to survive in different habitats. Environmental change can affect plants and animals that live there.	Materials can be changed by physical force (twisting, bending, squashing and stretching)	Plants grow from seeds/bulbs Plants need light, water and warmth to grow and survive Flowers make seeds to make more plants (reproduce) Plants are important • We need plants to survive (to clean air, to eat) We can eat different parts of the plants (leaves, stems, roots, seeds, fruit)	Animals move in order to survive. Different animals move in different ways to help them survive. Exercise keeps animal's bodies in good condition and increases survival chances. All animals eventually die. Animals reproduce new animals when they reach maturity. Animals grow until maturity and then do not grow any larger.
Vocabulary	Living, dead, never alive, habitats, micro-habitats, food, food chain, leaf litter, shelter, seashore, woodland, ocean, rainforest, conditions, desert, damp, shade,	Waterproof, fabric, rubber, cars, rock, paper, cardboard, wood, metal, plastic, glass, brick, twisting, squashing, bending, matches, cans, spoons,	Leaves, trunk, branch, root, seed, bulb, flower, stem, wild, garden, deciduous, evergreen, observe, grow, compare, record, temperature, predict, measure, diagram, germinate, warmth, sunlight.	Living, dead, never alive, habitats, micro-habitats, food, food chain, leaf litter, shelter, seashore, woodland, ocean, rainforest, conditions, desert, damp, shade
Prior Learning	In Early Years children should: Comment and question about the place they live or the natural world. Show care and concern for living things and the environment. Talk about things they have observed such as plants and animals. Notice features of objects in their environment. Comment and ask questions about their familiar world.	In Year 1 children should: Distinguish between and 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 together a variety of everyday materials based on their simple properties.	In Year 1 Children should: 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. Identify and name the roots, trunk, branches and leaves of trees	In Year 1 children should: 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.
National Curriculum Objectives	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 micro-habitats	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.	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and warmth to grow and stay healthy.	Know that animals, including humans, have offspring which grow into adults Know the basic stages in a life cycle for animals, including humans Find out 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.

	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.			
Key Questions	<p>How do animals eat?</p> <p>Do all animals eat the same thing?</p> <p>Which animals hunt, and which animals are hunted? Why?</p> <p>What animals live in our school environment?</p> <p>How are animals and plants 'adapted' to live in their habitats?</p> <p>Why do animals and plants like to live in different places?</p> <p>How do seasons affect our animals and plants?</p> <p>Which animals hibernate and why?</p> <p>How do habitats change over our school year?</p>	<p>Which materials absorb the most water?</p> <p>Which fabric would make the softest blanket?</p> <p>The baby has spilt her drink, which material would absorb the drink the best?</p> <p>We want to make a really slippery slide; which liquid would be best to use?</p> <p>Which chocolate will melt the fastest on a warm plate (a model of a warm hand)</p> <p>Which wrapping papers are strong enough to wrap and send a present?</p> <p>Which material could be used to make a waterproof hat for the teacher when she is on the playground at playtime?</p> <p>Which material could I wrap my ice egg / snowman in to stop it melting, or would it make it melt quicker?</p> <p>What could I wrap a chicken egg in to keep it warm when it is waiting to hatch?</p> <p>What could you use as a crash mat for Humpty Dumpty?</p>	<p>Do cress produce seeds, how could we find out?</p> <p>Do all plants produce flowers and seeds?</p> <p>What is different between freshly cut and planted flowers?</p> <p>Do plants flower all year round?</p> <p>What are flowers for?</p> <p>What happens to a plant after it has produced seeds?</p>	<p>How long do should my pets live for?</p> <p>Do all animals grow and live the same way?</p> <p>Do bigger animals live longer?</p> <p>Why are we all different heights?</p> <p>How and why do we grow and change?</p>
Future Learning	<p>In Year 4 children will:</p> <p>Recognise that living things can be grouped in a variety of ways explore and use classification keys to help group,</p> <p>Identify and name a variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things</p>	<p>In Year 3 children will:</p> <p>Compare and group together different kinds of rocks based on their appearance and simple physical properties</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p>In Year 3 Children will:</p> <p>Identify and describe the functions of different parts of the flowering plant: roots, stem/trunk/leaves and flowers</p> <p>Explore the part flowers play in a flowering plant's life cycle, including pollination, seed formation and seed dispersal</p> <p>Explain the requirements of plants for life and growth (air, light, water, nutrients from soil, room to grow) and how they vary between plants · Know the way in which water is transported between plants</p>	<p>In Year 3 children will:</p> <p>Identify that animals, including humans, need the right types and amount of nutrition, and they cannot make their own food; they get their nutrition from what they eat.</p> <p>Know how nutrients, water and oxygen are transported within animals and humans.</p> <p>Know about the importance of a nutritious, balanced diet.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement:</p>