



Year	1	Topic	Plants
<p><u>National Curriculum aims</u></p> <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. 			

Prior learning	Key vocabulary
<ul style="list-style-type: none"> • Plant seeds and care for growing plants. (Nursery - Plants) • Understand the key features of the life cycle of a plant and an animal. (Nursery - Plants) • Begin to understand the need to respect and care for the natural environment and all living things. (Nursery - Plants) • Explore the natural world around them. (Reception - Living things and their habitats) • Recognise some environments that are different to the one in which they live. (Reception - Living things and their habitats) 	<p>Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud</p>

Key vocabulary with definitions			
leaf	A flat part of a stem that is attached to the stem and collects sunlight.	root	The part of the plant that is usually underground, holds the plant in the ground and takes the water from the soil.
flower	The part of the plant that blossoms.	seed	The small parts produced by plants from which new plants grow.
bud	The young part of the plant that develops into a flower or leaf.	trunk	The woody stem of a tree that connects the leaves with the roots.
petal	The coloured part of a flower that attracts insects.	branch	A woody part of a tree that grows from the trunk.
berry	Berries are small, fleshy fruits that usually have many seeds.	stem	The main part of the plant that supports the leaves and flowers.
fruit	The part of the flower that contains the seeds.	bark	The outside cover of tree trunks and branches.
blossom	A flower that grows before the fruit.		

WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE

Key learning

Key facts about plants

Growing locally, there will be a vast array of plants which all have specific names.
Learn the names of some common trees eg Ash, Beech, Birch, Oak

These can be identified by looking at the key characteristics of the plant.

Some trees keep their leaves all year while other trees drop their leaves during autumn and grow them again during spring.

Parts of a plant

Plants have common parts, but they vary between the different types of plants.

See vocabulary for parts and definitions,



Common misconceptions

Some children may think:

- plants are flowering plants grown in pots with colored petals and leaves and a stem
- trees are not plants

- all stems are green
- a trunk is not a stem
- blossom is not a flower.
- all leaves are green

Activities

- Make close observations of leaves, seeds, flowers etc.
- Compare two leaves, seeds, flowers etc.
- Classify leaves, seeds, flowers etc. using a range of characteristics.
- Identify plants by matching them to named images.
- Make observations of how plants change over a period of time.
- When further afield, spot plants that are the same as those in the local area studied regularly, describing the key features that helped them.
- Use school grounds and local walk to make observations.

Possible evidence

For ARE

- Can sort and group parts of plants using similarities and differences
- Can use simple charts etc. to identify plants
- Can collect information on features that change during the year
- Can use photographs to talk about how plants change over time
- Can name trees and other plants that they see regularly
- Can describe some of the key features of these trees and plants e.g. the shape of the leaves, the colour of the flower/blossom

Future learning

- | | |
|---|---|
| <ul style="list-style-type: none"> • Observe and describe how seeds and bulbs grow into mature plants. (Y2 - Plants) • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (Y2 - Plants) • Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats) • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. (Y3 - Plants) • Investigate the way in which water is transported within plants. (Y3 - Plants) | <ul style="list-style-type: none"> • Can point out trees which lost their leaves and those that kept them the whole year • Can point to and name the parts of a plant, recognising that they are not always the same • e.g. leaves and stems may not be green • For GD • Compare and contrast different plants • Sequence pictures of how plants changes over time • Describe how deciduous trees changes throughout the year • Explain why some plants are only seen at certain times of the year |
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Working scientifically skills covered in this topic

Asking questions	➤ Asking questions about the basic structure of plants and how they change over time.
Observing	<ul style="list-style-type: none"> ➤ Observing leaves, seeds and flowers. ➤ Observing how plants change over time. ➤ Observe what happens to trees at different times if the year.
Using other sources of information	➤ Use photos to look at how plants and trees change over time.
Recording	➤ Label basic parts of plants on a diagram.
Patterns Groups	<ul style="list-style-type: none"> ➤ Identify and name plants by matching them to named images. ➤ Classify leaves, seeds, flowers etc. using a range of characteristics. ➤ Group plants using similarities and differences.



Year	1	Topic	Animals
<p><u>National Curriculum aims</u></p> <ul style="list-style-type: none"> 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). 			

Prior learning		Key vocabulary	
<ul style="list-style-type: none"> Use all their senses in hands-on exploration of natural materials. (Nursery - Humans) 		head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, names of animals experienced first-hand from each vertebrate group,	
Key vocabulary with definitions			
head	The top part of the body	tail	The lengthened growth at end of the body of an animal
body	A person's or animal's whole physical self	wing	The part of a bird or bat that is used for flying
eyes	The organs that are used for sight	claw	A sharp curved nail on the toe of an animal
ears	The organs that are used to hear	fin	The part of a fish used to help them swim
mouth	The part of the face used to eat, breath and talk	scales	The hard plate that covers the skin of a fish or reptile
leg	The part of the body used to walk	feather	Lightweight soft covering found on birds
teeth	Teeth are used to bite and to chew food and found in the mouth	fur	The soft covering of animals to keep them warm
beak	The hard opening of the mouth found in birds and reptiles	hooves	The hard coverings that protect the toes of many animals
paws	The foot of a four-legged animal with claws		

WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE

Key learning

Animals vary in many ways having different structures e.g. wings, tails, ears etc. They also have different skin coverings e.g. scales, feathers, hair. These key features can be used to identify them.

Animals eat certain things - some eat other animals, some eat plants, some eat both plants and animals.

Common misconceptions

Some children may think:

- only four-legged mammals, such as pets, are animals
- humans are not animals
- insects are not animals
- all 'bugs' or 'creepy crawlies', such as spiders, are part of the insect group
- amphibians and reptiles are the same.

Activities

- Make first-hand, close observations of animals from each of the groups.
- Compare two animals from the same or different groups.
- Classify animals using a range of features.
- Identify animals by matching them to named images.
- Classify animals according to what they eat.

Future learning

- 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. (Y2 - Living things and their habitats)
- Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. (Y6 - Living things and their habitats)
- Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)

Possible evidence

For ARE


- Can sort and group animals using similarities and differences
- Can use simple charts etc. to identify unknown animals
- Can create a drawing of an imaginary animal labelling its key features
- Can use secondary resources to find out what animals eat, including talking to experts e.g. pet owners, zookeepers etc.
- Can use first-hand close observations to make detailed drawings

For GD

- group animals that belong to: carnivores, herbivores and omnivores
- describe differences between the different animal groups (e.g. birds have feathers but mammals have fur)
- identify animals which are more likely to be seen in different seasons
- explain why some animals are only seen at night

Working scientifically skills covered in this topic

Asking questions	<ul style="list-style-type: none">➤ Asking questions about animals, how they are similar, how they differ and how they can be grouped.
Observing	<ul style="list-style-type: none">➤ Make close observations of animals from different animal groups.
Using other sources of information	<ul style="list-style-type: none">➤ Research about minibeasts using books and information.
Recording	<ul style="list-style-type: none">➤ Tally minibeasts found in a given tally chart.➤ Create a drawing of a imaginary animal and add basic labels to identify its features.
Patterns Groups	<ul style="list-style-type: none">➤ Identify animals by matching them to named images.➤ Classify reptiles, mammals and amphibians in a simple table.➤ Classify carnivore, herbivore and omnivore in a Venn diagram.➤ Compare two animals from the same or different groups.

	Year	1	Topic	Everyday materials
	Key: Blue = Spring 1 Purple = Summer 2 Red = both			
National Curriculum aims <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. 				

Prior learning	Key vocabulary
<ul style="list-style-type: none"> Use all their senses in hands-on exploration of natural materials. (Nursery - Materials, including changing materials) Explore collections of materials with similar and/or different properties. (Nursery - Materials, including changing materials) 	<ul style="list-style-type: none"> Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through

Key vocabulary including definitions

object	An object is something that you can touch.	tears	The act of breaking apart a material by force
material	A material is what the object is made from.	waterproof	Property of a material that will not let water pass through it
hard	A material that is rigid and strong	absorbent	A material that soaks up liquid easily
soft	A material that is not hard and can be squeezed	smooth	Having no roughness, lumps, or holes
stiff	A material that is firm or and not bend easily	rough	Being uneven and not smooth
bendy	An object that bends easily into a curved shape	dull	A material that is not bright or reflective
stretchy	A material that can be pulled and returns to its original shape	shiny	A material that is bright and reflects light

WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE

Key learning

- Distinguish between an object and the material from which it is made and know that objects are made from 1 or more materials.
- Identify and name a variety of everyday materials, (including wood, plastic, glass, metal, water, and rock) and know that some objects can be made from different materials (e.g. plastic, metal or wooden spoons).
- Describe the simple physical properties of a variety of everyday materials and to describe these properties (e.g. shiny, stretchy, rough etc).
- Some materials e.g. plastic can be in different forms with very different properties
- Objects can be grouped based on the materials they are made from.
- Every material has different properties. For example, paper is soft and smooth.

Key questions:

- Which materials are some objects made from?
- What words can I use to describe materials?
- How are these materials the same and how are they different?

Natural and Man-made

Natural materials are materials found in nature such as animals, plants or rock

 chalk	 sand	 leather	 gold
 cotton	 coal	 wood	 wool

Man-made materials are materials which have been produced by humans.

 bricks	 glass	 paper	 plastic
 rubber	 steel	 polyester	 nylon

Properties of materials

Material	Properties
Wood	opaque, hard and strong
Glass	transparent and waterproof
Metal	shiny, hard, smooth and strong
Plastic	waterproof and transparent
Fabric	stretchy and opaque
Bricks	rough and rigid
Leather	bendy and opaque
Paper	flexible and thin

How can a material change shape?

The shape of some materials can be changed when they are stretched, twisted, bent or squashed.



Common misconceptions

Some children may think:

- only fabrics are materials
- only building materials are materials
- only writing materials are materials
- the word 'rock' describes an object rather than a material
- 'solid' is another word for hard.

Activities

- *Classify objects made of one material in different ways e.g. a group of object made of metal.*
- *Classify in different ways one type of object made from a range of materials e.g. a collection of spoons made of different materials.*
- *Classify materials based on their properties.*
- *Test the properties of objects e.g. absorbency of cloths, strength of party hats made of different papers, stiffness of paper plates, waterproofness of shelters.*

Possible evidence

- Can sort objects and materials using a range of properties
- Can choose an appropriate method for testing an object for a particular property
- Can use their test evidence to answer the questions about properties e.g. "Which cloth is the most absorbent?"
- Can label a picture or diagram of an object made from different materials
- Can describe the properties of different materials

Future learning

- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials)

Working scientifically skills covered in this topic

Asking questions	➤ Asking questions about what materials are like and which are most suitable.
Simple Tests	➤ Simple test into the best material for umbrella.
Using equipment	➤ Using pipettes to add water to materials.
Simple Fair Tests	➤ Setting up a fair test when investigating the best material for an umbrella.
Observing	➤ Observe properties of different materials.
Measuring	➤ Counting number of drops that go through the material in investigation.
Recording	➤ Recording the number of drops that go through each material in a given table.
Patterns Groups	➤ Classify materials by matching up names with pictures. ➤ Classify materials based on their properties.
Explaining results	➤ Best material for umbrella evaluation based on findings from investigation.















Year	1	Topic	Seasonal changes
<p>National curriculum aims</p> <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. 			

Prior learning	Key vocabulary
<ul style="list-style-type: none"> • Understand the key features of the life cycle of a plant and an animal. (Nursery - Plants & Animals, excluding humans) • Explore the natural world around them. (Reception - Seasonal changes) • Describe what they see, hear and feel whilst outside. (Reception - Seasonal changes) • Understand the effect of changing seasons on the natural world around them. (Reception - Seasonal changes) 	<p>weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow, seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length</p>

Key vocabulary with definitions			
weather	Weather is what the sky and the air outside are like outside	sunset	Sunset is the time in the evening when the sun disappears out of sight from the sky.
season	A season is a period of time during the year that happens at the same time each year.	day length	The day length is how long the day is between the sunrise and sunset.
sunrise	The rising of the sun above the horizon.	puddle	A very small pool of usually dirty or muddy water on the ground.
rainbow	A rainbow is a multicolored arc or curved line in the sky	thunder	Thunder is the loud sound that happens after a flash of lightning when the air around it gets very hot.
lightning	Lightning is a powerful burst of electricity that happens very quickly during a thunderstorm.		

WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE

Key learning

What is a season?	<ul style="list-style-type: none"> The year is divided into four parts according to the weather and daylight hours. Each part is called a season. 	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">Autumn</td> <td> <ul style="list-style-type: none"> Leaves begin to change colours to oranges, reds and browns and fall from the tree. </td> <td rowspan="2" style="text-align: center;">  </td> </tr> <tr> <td style="text-align: center;">Winter</td> <td> <ul style="list-style-type: none"> Trees are bare without leaves. Branches and twigs are most visible. </td> <td style="text-align: center;">  </td> </tr> </table>	Autumn	<ul style="list-style-type: none"> Leaves begin to change colours to oranges, reds and browns and fall from the tree. 		Winter	<ul style="list-style-type: none"> Trees are bare without leaves. Branches and twigs are most visible. 	
Autumn	<ul style="list-style-type: none"> Leaves begin to change colours to oranges, reds and browns and fall from the tree. 							
Winter	<ul style="list-style-type: none"> Trees are bare without leaves. Branches and twigs are most visible. 							
What are the seasons called and when do they occur in England?	<ul style="list-style-type: none"> Autumn - September, October and November Winter - December, January and February Spring - March, April and May Summer - June, July and August 							
What happens in Autumn?	<ul style="list-style-type: none"> Temperatures get progressively colder The weather is very changeable 12 hours of light per day on average 							
What happens in Winter?	<ul style="list-style-type: none"> Temperatures are at their coldest The weather is generally wet, windy and cloudy at the start of the season becoming drier and much colder in the later part of the season. 8 hours of light per day on average. 							
What happens in Spring?	<ul style="list-style-type: none"> Early spring can be quite cold Occasionally the lowest temperatures of the year can occur in March There is a fair chance of snow earlier in the season often in March Temperatures get progressively warmer throughout the season. 13 hours of light per day on average 	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">Spring</td> <td> <ul style="list-style-type: none"> New leaves and buds begin to grow. </td> <td rowspan="2" style="text-align: center;">  </td> </tr> <tr> <td style="text-align: center;">Summer</td> <td> <ul style="list-style-type: none"> Trees appear full of leaves. </td> <td style="text-align: center;">  </td> </tr> </table>	Spring	<ul style="list-style-type: none"> New leaves and buds begin to grow. 		Summer	<ul style="list-style-type: none"> Trees appear full of leaves. 	
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Summer	<ul style="list-style-type: none"> Trees appear full of leaves. 							
What happens in Summer?	<ul style="list-style-type: none"> The warmest and sunniest of the seasons Thunderstorms are more likely in the summer 16 hours of light per day on average 							

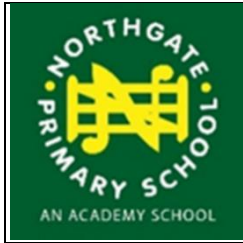
Common misconceptions

<p>Some children may think:</p> <ul style="list-style-type: none"> it always snows in winter it is always sunny in the summer there are only flowers in spring and summer 	<ul style="list-style-type: none"> it rains most in the winter All leaves turn colour in autumn and fall off
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Activities	Possible evidence
<ul style="list-style-type: none"> • Collect information about the weather regularly throughout the year. Present this information in tables and charts to compare the weather across the seasons. • Collect information, regularly throughout the year, of features that change with the seasons e.g. plants, animals, humans. Present this information in different ways to compare the seasons. • Gather data about day length regularly throughout the year and present this to compare the seasons. 	<p>For ARE</p> <ul style="list-style-type: none"> • Can describe weather in different seasons over a year • Can describe days as being longer (in time) in the summer and shorter in the winter • Can describe other features that change through the year • Use the evidence gathered to describe the general types of weather and changes in day length over the seasons. • Use their evidence to describe some other features of their surroundings, e.g. themselves, animals, plants that change over the seasons • Demonstrate their knowledge in different ways e.g. making a weather forecast video, writing seasonal poetry, creating seasonal artwork
Future learning	<p>For GD</p> <ul style="list-style-type: none"> • Use secondary data to describe weather in another setting • Explain why animals are easier to spot at different times of year e.g. migrating birds and hibernating animals
<ul style="list-style-type: none"> • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light) • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and space) The seasons and the Earth's tilt, day length at different times of year, in different hemispheres. (KS3) 	

Working scientifically skills covered in this topic

Asking questions	➤ Asking questions about how seasons are different and what happens in each season.
Observing	➤ Observe what it is like in different seasons.
Using other sources of information	➤ Recording information about the different seasons from season videos and photos.
Recording	➤ Record daily weather in given table.
Patterns Groups	<ul style="list-style-type: none"> ➤ Classify seasons by drawing the weather that typically occurs then. ➤ Identify changes in the different seasons.



Year	1	Topic	Humans
National Curriculum aims <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. 			

Prior learning	Key vocabulary
<ul style="list-style-type: none"> Use all their senses in hands-on exploration of natural materials. (Nursery - Humans) Name and describe people who are familiar to them. (Reception - Humans) 	head, body, eyes, ears, mouth, teeth, leg, senses, touch, see, smell, taste, hear, fingers, skin, eyes, nose, ear, tongue

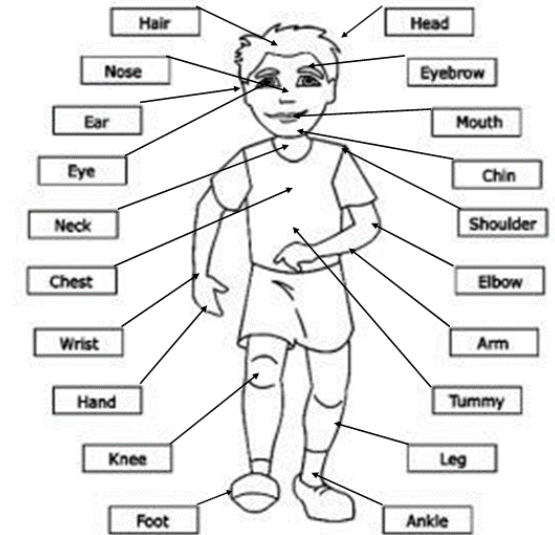
Key vocabulary with definitions			
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senses	How we explore the world using our bodies	skin	The organ that covers the body
hear	What sounds feel like in the ears	eyes	The organs that are used for sight
taste	What food feels like in the mouth	nose	The organ that is used to smell
smell	What things feel like in the nose	head	The top part of the body
see	What things look like	leg	The part of the body used to walk
touch	What things feel like	teeth	Teeth are used to bite and to chew food and found in the mouth
mouth	The part of the face used to eat, breath and talk	ears	The organs that are used to hear
body	A person's or animal's whole physical self	fingers	The parts of the body used to touch and feel

WHAT PUPILS NEED TO KNOW OR DO TO BE SECURE

Key learning

- Humans have different body parts and different parts are associated with a different sense.
- Humans have key parts in common, but these vary from person to person. Humans (and other animals) find out about the world using their senses.
- Humans have five senses - sight, touch, taste, hearing and smelling.



Common misconceptions

- Some children may think: Humans are not animals.
- A sense is not a body part.

Activities	Possible evidence
<ul style="list-style-type: none"> • Make first-hand close observations of parts of the body e.g. hands, eyes. • Compare two people. • Take measurements of parts of their body. • Compare parts of their own body. • Look for patterns between people e.g. Do people with big hands have big feet? • Classify people according to their features. • Investigate human senses e.g. Which part of my body is good for feeling, which is not? Which food/flavours can I identify by taste? Which smells can I match? 	<p>For ARE</p> <ul style="list-style-type: none"> • Can use first-hand close observations to make detailed drawings • Can name body parts correctly when talking about measurements and comparisons e.g. "My arm is x straws long." "My arm is x straws long and my leg is y straws long. My leg is longer than my arm." "We both have hands, but his are bigger than mine." "These people have brown eyes and these have blue." • Can talk about their findings from investigations using appropriate vocabulary e.g. "My fingers are much better at feeling than my toes" "We found that the crisps all taste the same." • Can label key features on a picture/diagram • During PE lessons, can follow instructions involving parts of the body • Can label parts of the body on pictures and diagrams • Can explore objects using different senses
<ul style="list-style-type: none"> • Future learning 	
<ul style="list-style-type: none"> • 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. (Y2 - Living things and their habitats) 	

Working scientifically skills covered in this topic

Asking questions	➤ Asking questions about our bodies and how people are different.
Using equipment	➤ Using cubes to measure body parts
Simple Fair Tests	➤ Measuring using cubes in a fair way
Observing	➤ Making popcorn and observing in relation to senses
Measuring	➤ Take measurements of different parts of the body using cubes.
Recording	<ul style="list-style-type: none"> ➤ Adding labels onto pictures/diagrams eg parts of body. ➤ Recording body part measurements in a given table.
Patterns Groups	<ul style="list-style-type: none"> ➤ Look for patterns between people e.g. Do people with big hands have big feet? ➤ Classify people according to their features.

