Year I - Animals including humans - LIFE

National Curriculum objectives

- Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).
- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Notes and guidance

- 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, reptiles, birds and mammals, including those that are kept as pets.

Sticky knowledge

• There are many different animals with different characteristics.
• Animals have senses to help individuals survive. When animals sense things they are able to respond.
• Animals need food to survive.
• Animals need a variety of food to help them grow, repair their bodies, be active and stay healthy.

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.
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. These senses are linked to particular parts of the body.

Vocabulary

Amphibians, birds, fish, mammals, reptiles, carnivores, herbivore, omnivore, sight, hearing, touch, taste, smell, head, body, neck, ear, mouth, shoulder, hand, fingers, leg, foot, thumb, eye, nose, knee, toes, teeth, elbow
leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves
• Names of animals experienced first-hand from each vertebrate group
• Senses - touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue
N.B.
The children need to be able to name and identify a range of animals in each group e.g. name specific birds and fish. They do not need to use the terms mammal, reptiles etc. or know the key characteristics of each, although they will probably be able to identify birds and fish, based on their characteristics.
The children also do not need to use the words carnivore, herbivore and omnivore. If they do, ensure that they understand that carnivores eat other animals, not just meat.
Although we often use our fingers and hands to feel objects, the children should understand that we can feel with many parts of our body.

Key scientists

Chris Packham
(Animal Conservationist)

Linked texts

One Year with Kipper
(Mick Inkpen)
Snail Trail
(Ruth Brown)
Superworm
(Julia Donaldson & Axel Scheffler)

Prior Learning

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.(ELG)
In Early Years children should:
• be able to identify different parts of their body.
• Have some understanding of healthy food and the need for variety in their diets.
• Be able to show care and concern for living things.
• Know the effects exercise has on their bodies.
• Have some understanding of growth and change.
• Can talk about things they have observed including animals

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 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.

Enquiry						
Comparative tests	**Identify and classify**	**Observation over time**	**Pattern seeking**	**Research**	**Ideas over time**	**Key Questions**
Is our sense of smell better when we cannot see?	How can we organise all the zoo animals? What are the names for all the parts of our bodies?	How does my height change over the year?	Do you get better at smelling as you get older?	Do all animals have the same senses as humans?	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?	• What do animals eat? • Do all animals eat the same food? • Which of our senses is the most accurate at identifying food? • Do all animals hunt? • Why are animals different colours and patterns?
Report findings using tally charts, pictograms, or block charts Perform simple tests, gather and record data.	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.	Observe using magnifying glasses Take photographs to evidence observations over time Record own drawings over time	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.	Pose their own 'big question'. Interpret the information they find and consider its relevance in answering their questions. 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.	Report findings using posters, leaflets, newspapers, reports or letters Timeline of scientists	

Linked TAPS Assessment	Other linked TAPS	Working scientifically	
Animal body parts • Can the children label basic parts of the human body? • Can the children say which part of the body is associated with each sense? **Animal classification** • 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?	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.	• asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions.	• 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. • using their senses to compare different textures, sounds and smells.

Year 1 - Everyday Materials - MATTER

National Curriculum objectives

- 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.

Notes and guidance

- 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

Sticky knowledge

All objects are made of one or more materials. Some objects can be made from different materials e.g. plastic, metal or wooden spoons. Materials can be described by their properties e.g. shiny, stretchy, rough etc. Some materials e.g. plastic can be in different forms with very different properties.

There are many different materials that have different describable and measurable properties.
• Materials that have similar properties are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass).
• The properties of a material determine whether they are suitable for a purpose.

Vocabulary

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, *opaque, transparent, translucent*

Key scientists

William Addis (Toothbrush Inventor)
Charles Mackintosh (Waterproof coat)
John McAdam (roads)

Linked texts

The Great Paper Caper *(Oliver Jeffers)*
Who Sank the Boat *(Pamela Allen)*
The Story of Cinderella *(Walt Disney)*

Prior Learning

- 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.(ELG)

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)

Possible 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.

Enquiry						
Comparative tests	Identify and classify	Observation over time	Pattern seeking	Research	Ideas over time	Key Questions
Which materials are the most flexible? Which material is the most absorbent? 	We need to choose a material to make an umbrella. Which materials are waterproof? Classify one type of object made from different materials. Which materials float and sink? 	What happens to materials over time if we bury them in the ground? What happens to shaving foam over time? 	Is there a pattern in the types of materials that are used to make objects in a school? 	How are bricks made? Which materials can be recycled? 	How are building materials different now to when Queen Elizabeth I was on the throne?	Buildings • Which rocks are the least crumbly? • 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?
Report findings using tally charts, pictograms, or block charts Perform simple tests, gather and record data.	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.	Observe using magnifying glasses Take photographs to evidence observations over time Record own drawings over time Ask questions about what they have observed to find out more.	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.	Pose their own 'big question'. Interpret the information they find and consider its relevance in answering their questions. 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.	Report findings using posters, leaflets, newspapers, reports or letters Timeline of scientists	

<table>
<tr><th>Linked TAPS Assessment</th><th>Other linked TAPS</th><th colspan="2">Working scientifically</th></tr>
<tr><td>Describing and sorting materials
Can children carry out a simple test?
Can children use test results to group materials into those which float or sink?</td><td>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.
Label a picture, naming all the different materials.</td><td>asking simple questions and recognising that they can be answered in different ways
observing closely, using simple equipment
performing simple tests
identifying and classifying
using their observations and ideas to suggest answers to questions
gathering and recording data to help in answering questions.</td><td>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?’</td></tr>
<tr><th colspan="2">Activities</th><th colspan="2">Possible Evidence</th></tr>
<tr><td colspan="2">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.</td><td colspan="2">Can label a picture or diagram of an object made from different materials
Can describe the properties of different materials
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?</td></tr>
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Year 1 - plants - LIFE

National Curriculum objectives

- 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.

Notes and guidance

- 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).

Sticky knowledge

• Plants grow from seeds/bulbs
• Plants need light and water to grow and survive
• Plants are important
• We can eat lots of plants

Growing locally, there will be a vast array of plants which all have specific names. These can be identified by looking at the key characteristics of the plant. Plants have common parts, but they vary between the different types of plants. Some trees keep their leaves all year while other trees drop their leaves during autumn and grow them again during spring.

Vocabulary

Leaves, trunk, branch, root, seed, bulb, flower, blossom, petal, fruit, stem, bud, wild, garden, deciduous, evergreen

Names of trees in the local area

Names of garden and wild flowering plants in the local area

Key scientists

Beatrix Potter (Author & Botanist)

Linked texts

Tree: Seasons Come, Seasons Go (Patricia Hegarty and Britta Teckentrup)
A Little Guide to Wild Flowers (Charlotte Voake)
The Things That I LOVE about TREES (Chris Butterworth)
Harry's Hazelnut (Ruth Parsons)

Prior Learning

Explore the natural world around them, making observations and drawing pictures of animals and plants (ELG)

Future learning

• 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)

Possible misconceptions

Some children may think:
• plants are flowering plants grown in pots with coloured petals and leaves and a stem
• trees are not plants
• all leaves are green
• all stems are green
• a trunk is not a stem
• blossom is not a flower

Enquiry						
Comparative tests	**Identify and classify**	**Observation over time**	**Pattern seeking**	**Research**	**Ideas over time**	**Key Questions**
Which type of compost grows the tallest sunflower? Which tree has the biggest leaves?	How can we sort the leaves that we collected on our walk?	How does a daffodil bulb change over the year? How does my sunflower change each week? How does the oak tree change over the year?	Do trees with bigger leaves lose their leaves first in autumn? Is there a pattern in where we find moss growing in the school grounds?	What are the most common British plants and where can we find them?	How did Beatrix Potter help our understanding of mushrooms and toadstools?	How do Plants grow? • What do Plants need to grow? • Do all plants need water? • Are all plants green? • Why do seeds look different? • Can plants grow as big in the shade? • What is the biggest/smallest/smelliest (etc) tree/flower/plant on the planet?
Report findings using tally charts, pictograms, or block charts Perform simple tests, gather and record data.	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.	Observe using magnifying glasses Take photographs to evidence observations over time Record own drawings over time	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.	Pose their own 'big question'. Interpret the information they find and consider its relevance in answering their questions. 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.	Report findings using posters, leaflets, newspapers, reports or letters Timeline of scientists	

Linked TAPS Assessment	Other linked TAPS	Working scientifically	
Plants • Can children make careful observations of similarities and differences between plants? • Can children label the basic parts of a plant?	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.	• asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions.	• 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.

Activities	Possible Evidence
• 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	• 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 • 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 • 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

Year 1 - Seasonal changes - ENERGY

National Curriculum objectives

- observe changes across the four seasons
- observe and describe weather associated with the seasons and how day length varies.

Notes and guidance

- observe and talk about changes in the weather and the seasons.
- Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.

Sticky knowledge

Weather can change
There are lots of different types of weather: Rain, Sun, Cloud, Wind, Snow, etc
Days are longer and hotter in the summer
Days are shorter and colder in the winter
There are four seasons: Spring, Summer, Autumn, Winter

In the UK, the day length is longest at mid-summer (about 16 hours) and gets shorter each day until mid-winter (about 8 hours) before getting longer again. The weather also changes with the seasons. In the UK, it is usually colder and rainier in winter, and hotter and dryer in the summer. The change in weather causes many other changes. Some examples are: numbers of minibeasts found outside; seed and plant growth; leaves on trees; and type of clothes worn by people.

Vocabulary

Seasons, spring, summer, autumn, winter
Weather, windy, sunny, overcast, snow, rain, temperature
Sun, sunrise, sunset, day length

Key scientists

Dr Steve Lyons (Extreme Weather) Holly Green (Meteorologist)

Linked texts

Tree: Seasons Come, Seasons Go (Patricia Hegarty and Britta Teckentrup)
One Year with Kipper (Mick Inkpen) After the Storm (Nick Butterworth)

Prior Learning	Future learning	Possible misconceptions
Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. (ELG)	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)	Some children may think: • it always snows in winter • it is always sunny in the summer • there are only flowers in spring and summer • it rains most in the winter.

Enquiry						
Comparative tests	**Identify and classify**	**Observation over time**	**Pattern seeking**	**Research**	**Ideas over time**	**Key Questions**
In which season does it rain the most?	How would you group these things based on which season you are most likely to see them in?	How does the oak tree change over the year? How does the colour of a UV bead change over the day?	Do trees with bigger leaves lose their leaves first in autumn? Does the wind always blow the same way?	Are there plants that are in flower in every season? What are they?		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? • Does more rain take longer to dry? • Do countries with higher temperatures have less rain? • How does rainfall and temperature change over time in our school grounds? • 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?
Report findings using tally charts, pictograms, or block charts Perform simple tests, gather and record data.	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.	Observe using magnifying glasses Take photographs to evidence observations over time Record own drawings over time Ask questions about what they have observed to find out more.	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.	Pose their own 'big question'. Interpret the information they find and consider its relevance in answering their questions. 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.	Report findings using posters, leaflets, newspapers, reports or letters Timeline of scientists	

Linked TAPS Assessment	Other linked TAPS	Working scientifically	
Seasonal Change • 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?	Look at a tree now and in a different season and explain what has happened.	• asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions.	• 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.

Activities	Possible Evidence
• 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.	• Can name the four seasons and identify when in the year they occur • 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