

Science

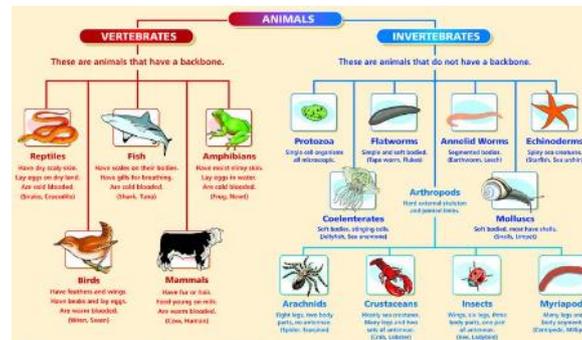
Living things and their habitats Year 4

Remember when

Grouped animals by type vertebrates, fish, reptiles, amphibians, birds, mammals and invertebrates. (Y1/Y2/Y3)
 Grouped animals by what they eat: carnivores, herbivores and omnivores. (Y1/Y2/Y3)
 Name common wild and garden plants and deciduous and evergreen trees. (Y1)
 Describe habitats (including microhabitats) and the animals and plants that can be found there. (Y2)
 Living things depend on each other to survive. (Y2)

Sticky knowledge

Living things can be grouped according to different criteria (where they live, what type of organism they are, what features they have). A classification key is a tool that is used to group living things to help us identify them. Habitats can change throughout the year and this can affect which plants and animals live there. Humans can have positive and negative effects on the environment: positive effects can be nature reserves, ecological parks and negative effects can be litter, urban development.



Key vocabulary

classification
 environment
 excretion
 growth
 habitat
 invertebrates
 life processes
 living things
 locality
 microhabitat
 movement
 nutrition
 organism
 reproduction
 respiration
 sensitivity
 species
 vertebrates

National Curriculum

Recognise that living things (including those in the locality) can be grouped in a variety of ways
 Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
 Recognise that environments can change and that this can sometimes pose dangers to living things.

Common Misconceptions

Some children may think that:

- the death of one of the parts of the food chain or web has no or limited consequences on the rest of the chain.
- there is always plenty of food for wild animals.
- animals are only land-living creatures.
- animals and plants can adapt to their habitats, however they change.
- all changes to habitats are negative.

LO and Enquiry type	Knowledge and Skills	Lesson outline
<p>Lesson 1</p> <p>LO: To know plants and animals can be grouped in different ways</p> <p>Enquiry type: Grouping and classifying.</p>	<p>SK: animals and plants can be grouped according to their features</p> <p>Skill: Gather, record and present data in a variety of ways to help in answering questions</p>	<p>Introduce living things</p> <p>Show children animals and plants can be grouped based on similarities and differences.</p> <p>Introduce/ recap the terms vertebrates and invertebrates</p> <p>Provide children a range of organisms- Generate criteria for sorting organisms.</p> <p>LA- Complete Venn diagram using own group criteria.</p> <p>GD- Sort into a Carroll diagram using own group criteria.</p> <p>Plenary game - What am I? Attach a name of animal to a child's back. Children to ask yes/no questions based on the knowledge from the lesson to identify which animal they are.</p>
<p>Lesson 2</p> <p>LO: To be able to use a classification key to classify vertebrates</p>	<p>SK: A classification key is a tool that is used to group living things to help us identify them</p> <p>Skill: Recording findings using simple scientific language, drawings,</p>	<p>Introduction to classification keys. What is classification? - BBC Bitesize</p> <p>Whole year group activity outside. Ask children a way of dividing the whole group into two sub-groups (Must be Yes/No: 'Are you a boy?') Write the question on paper/the ground using chalk and have two arrows facing outwards for 'yes' and 'no'. Children will divide themselves into the sub-</p>

<p>Enquiry type: Grouping and classifying.</p>	<p>labelled diagrams, keys, bar charts, and tables</p>	<p>groups and continue to ask yes/no questions until the children can be divided no further.] Repeat activity classifying sweets in groups. Apply knowledge learned in this lesson to classifying vertebrates individually.</p> <p>Game – Guess who? Choose another child in the class (can include teachers). Children will then ask yes/no questions in order to figure out which child has been picked.</p>
<p>Lesson 3</p> <p>LO: To be able to group and classify invertebrates.</p> <p>Enquiry type: Grouping and classifying.</p>	<p>SK: invertebrates are animals that do not have a backbone. They can be classified into different groups</p> <p>Skill: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	<p>Introduce/ recap the terms- vertebrates and invertebrates (quick sorting activity) Show a classification key with a mistake- can they spot the mistake?</p> <p>LA- Children sort organisms under classification key headings. Ext: Create own simple example using organisms given. GD- Create own criteria for sorting given organisms Chn understand habitats can change throughout the year, this affects plants/ animals which live there.</p> <p>Go into the school grounds to collect invertebrates using pooters (talk to pupils about safely collecting and taking back to the original habitat). Pupils use classification keys to identify them. Make their own classification keys based on what they have found.</p>
<p>Lesson 4</p> <p>LO: To be able to group and classify plants.</p> <p>Enquiry type: Grouping and classifying.</p>	<p>SK: A classification key can be used to identify different plants</p> <p>Skill: Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	<p>Recap the different groups of living things, making sure to include plants. What different plants do you know? Deciduous and evergreen trees wild flowers knowledge from year 1</p> <p>How do we know which plant is which? Give pupils different plants and trees- how could we group them? Pupils could group the pictures into trees, grass, flowering plants etc.</p> <p>Use different classification keys to identify plants in the school grounds i.e. grass, twig, leaves, flowers. Pupils choose one group of plants to create a classification key for.</p>
<p>Lesson 5</p> <p>LO: To know that humans can have a negative impact on an animals' habitat</p> <p>Enquiry Type: Research</p>	<p>SK: Environments may change naturally e.g. flooding, fire, earthquake</p> <p>Humans also cause environmental change e.g. littering, plastic pollution, building on green spaces</p> <p>Skill: reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>	<p>If humans made changes to an animal's environments, do you think this might have an impact? E.g. Before and after (Park changed to local supermarket) how might the organisms be affected?</p> <p>Discuss how negative human impact influences our world; deforestation (prior learning – year 3), climate change/polar ice caps, pollution/dumping, pesticides, building housing estates. Discuss that natural disasters can also have negative effects.</p> <p>Own opinions. Discuss and mind map ways that humans/natural disasters are having a negative effect on the environment (focus on those listed above – topical), write in what impact it causes to the plants and animals in surrounding areas. Write this up into a table in books.</p> <p>https://www.bbc.co.uk/bitesize/articles/zrsbn9g https://www.bbc.co.uk/bitesize/clips/z7x2tfr https://www.bbc.co.uk/bitesize/clips/zwywmnb</p>
<p>Lesson 6</p> <p>LO: To know humans can have a positive impact on the environment</p> <p>Enquiry type: Research.</p> <p>30499-Save our bees FULL.pdf (stem.org.uk)</p>	<p>SK: Humans can have a positive impact on the environment e.g. campaigning, building nature reserves</p> <p>Skill: Gather, record and present data in a variety of ways to help in answering questions</p>	<p>Recap negative human influence on environments. How could we make positive changes in order to repair some of the damages done?</p> <p>Why are bees so important to the wild? Think about what you have eaten this week. How much of this would not be available if it weren't for bees? Consider the environment of different types of bee. What does the bee need to survive? Have examples of the types of bees and the reasons for their decline. Children to match in groups. How can we prevent this from happening?</p> <p>Bee role play activity to show how infection can spread and endanger a hive. (STEM link provided for resources)</p>

		<p>How could we make the school environment more bee-friendly? Each group to focus on how to save each major bee species. Create a placard on flipchart paper/posters showing different ways to save bees, and ways we as a school community could help. Ask Mrs Knight if these can be displayed around school.</p> <p>Go out to the allotment in small groups and plant bee-friendly flowers.</p>	
Working towards	<p style="text-align: center;">End of unit assessment</p> <p>Working at Age related expectations</p>		Working at a greater depth