Year 6: Living things and their habitats

Topic overview for teachers

This topic overview is based on the PLAN knowledge matrix (for England). Please use link: https://www.planassessment.com/living-things-y6

The matrix includes:

- National Curriculum learning objectives
- Key learning
- Key vocabulary
- Common misconceptions
- Possible activities & evidence

Age 10-11

The Association for Science Education

Year 6 – Living things and their habitats

Topic	Key Learning	page
Classification of living things and the work of Carl Linnaeus	• Living things can be grouped according to **characteristics**. • The two main groups are **animals** and **plants.** • Other living things include **fungi** and **micro-organisms** (such as **mushrooms**, **yeast** and **bacteria**). • Carl Linnaeus devised a formal **classification** system for all living things, which is still used today.	4
Animals with a backbone: Vertebrates	• **Animals** can be divided into two main groups: **vertebrates** (animals with backbones) and **invertebrates** (animals without backbones)**.** • **Vertebrates** can be divided into five main groups: **Fish, Reptiles, Amphibians, Birds and Mammals.** • Each vertebrate group has distinctive characteristics.	5
Making branching keys and classifying vertebrates	• **Branching keys** are useful for classifying things, using descriptions of features or characteristics. • **Vertebrates** can be divided into five main groups: **Fish, Reptiles, Amphibians, Birds and Mammals.** • Each vertebrate group has distinctive characteristics.	6

Year 6 – Living things and their habitats

Topic	Key Learning	page
Making a mythical animal	• Living things can be grouped according to **characteristics**. • Some animals can be hard to classify when they appear to have features from more than one group.	7
Animals without a backbone: Invertebrates	• **Animals** can be divided into two main groups: **vertebrates** (animals with backbones) and **invertebrates** (animals without backbones)**.** • **Invertebrates** can be divided into many groups. These groups include **insects, slugs & snails (molluscs), spiders (arachnids)** and **worms.**	8
Plant classification: characteristics of flowering and non-flowering plants	• **Plants** can be divided broadly into two main groups: **flowering plants** and **non-flowering plants** • **Flowering plants** reproduce with seeds which are protected by a flower or fruit. • **Non-flowering plants** include **conifers**, **ferns**, and **mosses.**	9

Living things and their habitats

Classification of living things and the work of Carl Linnaeus

Key Learning

- Living things can be grouped according to **characteristics**.
- The two main groups are **animals** and **plants.**
- Other living things include **fungi** and **micro-organisms** (such as **mushrooms**, **yeast** and **bacteria**).
- Carl Linnaeus devised a formal **classification** system for all living things, which is still used today.

I can…

- Group examples of animals, plants and fungi/ micro-organisms.

Suggested activities and website links

- Explore prior knowledge about classifying animals and plants.

BBC clip about plants
https://www.bbc.co.uk/bitesize/clips/z2k4d2p

- Find out about Carl Linnaeus and grouping living things by characteristics. https://www.tigtagworld.co.uk/film/carl-linnaeus-PRM00688/
- Make a table to classify animals, plants, fungi and microorganisms
- *Optional: Find out more about micro-organisms and fungi (see lesson plan page 6).*

Living things and their habitats

Animals with a backbone: Vertebrates

Key Learning

- **Animals** can be divided into two main groups: **vertebrates** (animals with backbones) and **invertebrates** (animals without backbones).
- **Vertebrates** can be divided into five main groups: **Fish, Reptiles, Amphibians, Birds and Mammals.**
- Each vertebrate group has distinctive characteristics.

I can…

- Describe the characteristics of Fish, Reptiles, Amphibians, Birds and Mammals.

Suggested activities and website links

- **Odd one out – ladybird, crab, tortoise.**

BBC clips on vertebrates & invertebrates
https://www.bbc.co.uk/bitesize/topics/zn22pv4/articles/z8mbqhv

https://www.bbc.co.uk/bitesize/topics/zn22pv4/articles/zp6g7p3

- **Describing characteristics of vertebrates**

BBC clip on features of vertebrates
https://www.bbc.co.uk/teach/class-clips-video/science-ks2--ks3-classification-of-organisms/zh7g92p

Optional: Find out more about a vertebrate of your choice (see lesson plan page 6).

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Making branching keys and classifying vertebrates

Key Learning

- **Branching keys** are useful for classifying things, using descriptions of features or characteristics.
- **Vertebrates** can be divided into five main groups: **Fish, Reptiles, Amphibians, Birds and Mammals.**
- Each vertebrate group has distinctive characteristics.

I can…

- Make a branching key to classify a group of objects.
- Make a branching key to classify vertebrates (animals with a backbone).

Suggested activities and links to websites

- Learning to make a branching key with liquorice allsorts (packet of sweets or cut out sweets).

Thank you to SAPS for this activity – more details on p.19 of their guide: www.saps.org.uk/attachments/article/1377/SAPS%20book%205%20-%20Grouping%20and%20Classification%20-%202016.pdf

- Making a branching key to classify four vertebrates.
- *Optional: Making a key for all five vertebrate groups.*

Living things and their habitats

Making a mythical animal

Key Learning

- Living things can be grouped according to **characteristics**.
- Some animals can be hard to **classify** when they appear to have features from more than one group.

I can…

- Explain why classifying some animals, like a platypus, can be difficult.
- Make up a mythical (fictional) animal with features from two or more different vertebrate groups.

Suggested activities and links to websites

- Find out about the platypus and why scientists found it difficult to classify.

https://www.tigtagworld.co.uk/film/why-do-we-classify-PRM00146/

https://www.bbc.co.uk/programmes/p004jl2c

- Discuss the features of mythical creatures, such as the dragon.
- Find out about Carl Linnaeus and the Hydra https://youtu.be/lmQVnEMWtFc
- Design, draw and label a mythical vertebrate creature.

Living things and their habitats

Animals without a backbone: Invertebrates

Key Learning

- **Animals** can be divided into two main groups: **vertebrates** (animals with backbones) and **invertebrates** (animals without backbones)**.**
- **Invertebrates** can be divided into many groups. These groups include **insects, slugs & snails (molluscs), spiders (arachnids)** and **worms.**

I can…

- Describe some characteristics of invertebrates found in gardens, parks and woodland.
- Use a tally chart to record data.
- Plot a bar graph.

Suggested activities and links to websites

- **Odd one out – millipede, earthworm, beetle.**

BBC clip on exoskeletons
https://www.bbc.co.uk/bitesize/clips/zmj8q6f

NHM clip on earthworms
https://www.nhm.ac.uk/discover/earthworm-heroes.html

Survey of garden invertebrates

- **Using an identification key.**
- **Making a tally chart and plotting a bar graph.**

Woodland Trust website page on invertebrates
https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/animals/other-invertebrates/

Optional: Great Bug Hunt run by ASE.
http://www.schoolscience.co.uk/bughunt

Living things and their habitats

Plant classification: characteristics of flowering and non-flowering plants

Key Learning

- **Plants** can be divided broadly into two main groups: **flowering plants** and **non-flowering** plants
- **Flowering plants** reproduce with seeds which are protected by a flower or fruit.
- **Non-flowering plants** include **conifers**, **ferns**, and **mosses.**

I can…

- Describe the characteristics of flowering and non-flowering plants.
- Use a statement key to classify a group of plants.

Suggested activities and links to websites

- Explore prior knowledge about flowering and non-flowering plants.

https://www.bbc.co.uk/bitesize/clips/zsdkjxs

https://www.youtube.com/watch?v=cgVlrtGnG6s

- Discuss features of flowering plants, conifers, ferns and mosses.

https://www.dkfindout.com/uk/animals-and-nature/plants/

https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/plants/

- Make a paired-statement key to classify six plants.
- *Optional: Find out more about local trees (see lesson plan page 6).*