Science – Year 6

Living Things and Their Habitat

How do characteristics support classification?

NC objectives - **areas of study**	End point of area of study	KS2 Teacher Assessment Framework objectives	Vocabulary		
			Basic	Adventurous	Technical
describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics.	Children build on their knowledge from year 4 about grouping and classifying living things and the work of Carl Linnaeus. They look in detail at the classification system and how broad groupings can be sub-divided. They observe and classify animals into commonly found vertebrates and reasons for classifying them in a certain way.	use the observable features of plants, animals and microorganisms to group, classify and identify them into broad groups, using keys or other methods (year 6)	fish, birds amphibians, reptiles, mammals, warm-blooded, cold-blooded insects, spiders, snails, worms,		flowering, non-flowering, mosses, ferns, conifers invertebrate, vertebrates,

Knowledge

Substantive Knowledge

- Retrieval of knowledge about plants and animals from previous learning. (Y4 and KS1)
- Pupils know the lifecycle of different animals and plants and can explain how animas can be grouped in different ways according to characteristics and diet.
- Lesson 1
- LO To know how living things are classified.
- **fish, birds, amphibians, reptiles, mammals, warm-blooded, cold-blooded, insects, invertebrate, vertebrates,**
- Use MRS NERG to decide if things would be classified as alive or not (print the MRS NERG slides for children to explore around the room or pull out of envelopes to discuss)

Disciplinary Knowledge

Working as biologists and micro-biologists, children ask and answer questions about living things and the way they are classified into sub groups and the reasons for that.

Similarities and differences

Through first hand experiences, children observe and classify animals into commonly found vertebrates and invertebrates. They explain why living things are placed in one group and not another.

Evidence

• Children to know how plants meet the MRS NERG criteria (tropisms and respiration). • Lesson 2 • LO To know how to classify vertebrates. • **vertebrates,** • • Use observable features and behaviours to identify fish, amphibians, mammals, birds and reptiles. • Lesson 3 • LO To know about different types of invertebrates. • **invertebrate,** • • Know that an arthropod Know that an arthropod is an invertebrate with a hard, external skeleton and jointed limbs • Know that insects are a type of arthropod; their bodies consist of six legs, a head, a thorax and an abdomen; most insects also have a pair of antennae and a pair of wings (e.g. wasp) • Know that an arachnid (e.g. spider) is a type of arthropod with eight legs and no antennae or wings Know that a crustacean is a type of arthropod with two pairs of antennae (e.g. woodlouse) • Know that a myriapod is an arthropod with a flat and long or cylindrical body and many legs (e.g. centipede) • Know that a crustacean is a type of arthropod with two pairs of antennae (e.g. woodlouse) • Lesson 4 • To know about micro-organisms • **Micro-organism, bacteria** • • Know that there are three types of micro-organism: viruses, fungi and bacteria; of these three, viruses are often not really considered to be alive by many scientists mainly because they reproduce asexually • Know about Alexander's discovery of penicillin as an example of helpful bacteria Discuss how life would be different if Alexander Fleming had not discovered penicillin.	Using classification keys, children identify animals and plants in the local environment. They research unfamiliar animals and plants from other habitats and decide where they belong in the classification system. Trips for pond dipping could be organised, for pupils to be given identification and classification keys to correctly name pond creatures based on their features. They record data about what is found using tables, diagrams and labels. They create their own classification keys using suitable questioning. They report findings from observations and first-hand experience to draw conclusions and explain results and findings. Using scientific evidence presented to them they can use this to support or refute ideas or arguments.

- Lesson 5
- To know how to create a classification key
- **fish, birds, amphibians, reptiles, mammals, warm-blooded, cold-blooded, insects, spiders, snails, worms, flowering, non-flowering, mosses, ferns, conifers, invertebrate, vertebrates,**
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- Know that keys are a useful tool for field work
- Understand that closed questions support classification
- Know how to use the knowledge gained in this unit and in Y4 to create a classification key for living things from one habitat (eg. A pond).
- Lesson 6
- LO To know about Carl Linnaeus as a pioneer of Classification
- **Classification,**
- Revisit David Attenborough from Y4 Knowledge
- Know that Carl Linnaeus was a famous scientist who studied life and created a system for sorting living things into different groups
- Use secondary sources to understand the 5 kingdoms as a way of more complex classification

Discuss how classification helps scientists around the world who work with animals and plants.

Concepts

Biology	Chemistry	Physics	

SKILLS

1. Compare	2. Explore	3. Identify	4. describe	5. classify
6. Question	7. observe	8. test	9. record	10. research

ASSESSMENT

KNOW MORE, REMEMBER MORE, DO MORE...

In this unit of learning, progress has been made when a learner knows more. This 'distance travelled' from the starting point is evidenced through them remembering more and doing more: in books, low stakes quizzes, retrieval, use of mind maps, answering the big question and being able to feel more confident about this unit.