

Medium Term Plan: Supporting Implementation of LTP/Progression Grid

<p>Subject: Science Year: UKS2 year B – Living things and their habitats (classification) NC/PoS:</p> <ul style="list-style-type: none">• 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• give reasons for classifying plants and animals based on specific characteristics.
<p>Prior Learning (what pupils already know and can do)</p> <p>Know there is an animal kingdom grouped into vertebrates and non- vertebrates. Vertebrates can be grouped into mammals, fish, birds, reptiles, and amphibians. Know there is a plant kingdom which can be grouped into flowering and non-flowering plants. Use of sorting tree. Know the features of living things are movement, respiration, sensitivity, growth, reproduction, excretion, and nutrition</p>
<p>End Goals (what pupils MUST know and remember)</p> <ul style="list-style-type: none">• Know Carl Linnaeus as a pioneer of classification• Know to classify flowering plants into grasses, shrubs, cereals, and deciduous trees• Know to classify non-flowering plants into algae, mosses, ferns, and coniferous trees• Know to classify animals which are vertebrates – have backbones - (birds, fish, reptiles, mammals, amphibians)• Know to classify animals which are invertebrates – no backbones- into molluscs, annelids, arachnids, crustaceans, sponges, echinoderms, and insects• Know micro-organisms can be classified into bacteria, viruses, fungi, algae, and protozoa
<p>Key Vocabulary</p> <p>invertebrates, insects, spiders, snails, and worms, branching tree, classify, environment, representation, pooter, mosses, ferns, flowering plants, conifers, shrubs, cereal, grasses, spores, micro-organism, nucleus, unicellular, multicellular, bacteria, fungi, viruses, protists, algae, uses of, food production, cleaning products, decomposers, penicillin, yeast, antibiotics</p>
<p>Session 1: review prior learning</p> <p>Recap: Life cycles of an insect, mammal, amphibian, reptile, amphibian, and bird Introduce Carl Linnaeus – all living things can be grouped – labelled all living things using binomial system (2 names) https://www.youtube.com/watch?v=-LVunuIOT4w BBC Teach – Carl Linnaeus https://www.youtube.com/watch?v=Gb_IO-SzLgk Carl Linnaeus Natural History Museum</p>
<p>Session 2: Recap – who is Carl Linnaeus? Classifying vertebrates</p> <p>Children learn to classify animals which are invertebrates – no backbones- into molluscs, annelids, arachnids, crustaceans, sponges, echinoderms, and insects</p> <p>Lo: <u>Using a branching key to classify invertebrates</u></p> <p>Recap: classification of vertebrates from the animal kingdom – mammals, birds, reptiles, fish, and amphibians. Sort photographs of animals Include misconceptions - dolphin, whale, platypus, shark, bat and a bee and a snail. Where would the bee and snail fit?</p>

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Introduce invertebrates through watching

<https://www.youtube.com/watch?v=19x1rkFgrF4> and how we group them into insects,



spiders, snails, and worms and more

Create a branching tree using photographs of 4 invertebrates

Give reasons for classification

Vocabulary: invertebrates, insects, spiders, snails, and worms, branching tree, classify

Session 3: Recap: Give children a selection of invertebrates and ask them to group them according to their classification

Lo: To present data on invertebrate found in the local environment

Explore grounds using insect pooter and collect animals.

Safety: Model how to use pooter and ensure animals are returned to place where they were found

Give reasons for classifying

Children record and represent data (tally, bar graph)

Vocabulary: environment, representation, pooter

Session 4: Recap: invertebrates from in the local environment, life cycle of a flowering plant

Children learn to classify flowering plants into grasses, shrubs, cereals, and deciduous trees and non-flowering plants into algae, mosses, ferns, and coniferous trees

Lo: Using observation to classify plants

<https://www.youtube.com/watch?v=cqVlrtGnG6s> classifying and grouping plants

Sort photographs into the groups: Flowering plants, conifers, ferns, mosses

Explore grounds to find examples of plants and classify (look in woodland for ferns and mosses) give reasons for classification

Flowering plants include grasses, shrubs, cereal, and deciduous trees

Non-flowering plants are mosses, ferns, and conifers

N.B. flowering plants and conifers produce seeds, ferns and mosses produce spores)

Vocabulary: mosses, ferns, flowering plants, conifers, shrubs, cereal, grasses, spores

Session 5: Recap: How are plants classified?

Children learn micro-organisms can be classified into bacteria, viruses, fungi, algae, and protozoa

Lo: to research microorganisms

<https://www.youtube.com/watch?v=9JW63U2mzqo>

A microorganism is an organism which is microscopic, making it too small to be seen unaided by the human eye

Children research microorganisms through internet and books.

- Bacteria are single celled organisms and come in all sorts of shapes including rods, spirals, and spheres
- Fungi have complex cells like animals and plants and get food by decomposing matter
- Viruses do not have an organised cell structure and can infect animals and plants and make them sick
- Protists are any other organism that is not a plant, animal, bacteria, or fungi
- Algae are protists that perform photosynthesis and are very similar to plants but don't have leaves, roots, and stems

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Investigate the microorganisms on hands by pressing hand in bread and storing in a clear Ziplock bag. Do not open bag because of spores. Who has the hands with the most microbes on?

Set up a clear zip bags or boxes with different foods in for the children to see the different types of moulds. E.g. strawberries, orange, and other fruits

Vocabulary: micro-organism, nucleus, unicellular, multicellular, bacteria, fungi, viruses, protists, algae

Session 6: Recap: the different types of microorganisms

LO: to research the uses of microorganisms

Watch PowerPoint from cgp plus

Used in some cleaning products, food production, aid digestion, penicillin and can be decomposers

Vocabulary: uses of, food production, cleaning products, decomposers, penicillin, yeast, antibiotics

Link to career scientist:

https://pstt.org.uk/application/files/7916/2851/6348/Marine_biologist_-_Dawood_Qureshi.pdf

https://pstt.org.uk/application/files/2416/2851/6697/Veterinary_Surgeon_-_Daniella_Dos_Santos.pdf

https://pstt.org.uk/application/files/6216/3525/6982/Plant_Biologist-Angie_Burnett.pdf

Scientists who have helped develop understanding in this field: Carl Linnaeus