Medium Term Plan: Supporting Implementation of LTP/Progression Grid

Subject: Science   Year: UKS2 year B

NC/PoS:
- 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.

Prior Learning (what pupils already know and can do)
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.

End Goals (what pupils MUST know and remember)
To know Carl Linneaus as a pioneer of classification
To classify flowering plants into grasses, shrubs, cereals and deciduous trees
To classify non-flowering plants into algae, mosses, ferns and coniferous trees
To classify animals which are vertebrates – have backbones - (birds, fish, reptiles, mammals, amphibians)
To classify animals which are invertebrates – no backbones- into snails and slugs, worms, spiders, and insects
To know micro-organisms can be classified into bacteria, viruses, fungi, algae and protozoa

Key Vocabulary
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

Session 1: review prior learning

Recap :Life cycles of an insect, mammal, amphibian and bird
Introduce Carl Linneaus – 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 Linneaus
https://www.youtube.com/watch?v=Gb_IO-SzLgk Carl Linneaus Natural History museum

Session 2:
Lo: Using a branching key to classify invertebrates
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?
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

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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
Lo: Using observation to classify plants
https://www.youtube.com/watch?v=cgVlrtGnG6s 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?
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

Investigate the microrganisms 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 micobes 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 Linneaus

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