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| Subject: Science Year: Year 6NC/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.
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| 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 classificationTo classify flowering plants into grasses, shrubs, cereals and deciduous treesTo classify non-flowering plants into algae, mosses, ferns and coniferous treesTo 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 insectsTo know micro-organisms can be classified into bacteria, viruses, fungi, algae and protozoa |
| Key Vocabularyinvertebrates, 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 learningRecap :Life cycles of an insect, mammal, amphibian and birdIntroduce 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 invertebratesRecap: classification of vertebrates from the animal kingdom – mammals, birds, reptiles, fish and amphibians. Sort photographs of animalsInclude 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 moreCreate a branching tree using photographs of 4 invertebratesGive reasons for classificationVocabulary: 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 environmentExplore grounds using insect pooter and collect animals.Safety: Model how to use pooter and ensure animals are returned to place where they were foundGive reasons for classifyingChildren 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 plantLo: Using observation to classify plants<https://www.youtube.com/watch?v=cgVlrtGnG6s> classifying and grouping plantsSort photographs into the groups: Flowering plants, conifers, ferns, mossesExplore grounds to find examples of plants and classify (look in woodland for ferns and mosses) give reasons for classificationFlowering plants include grasses, shrubs, cereal and deciduous treesNon-flowering plants are mosses, ferns and conifersN.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 fruitsVocabulary: micro-organism, nucleus, unicellular, multicellular, bacteria, fungi, viruses, protists, algae |
| Session 6:Recap: the different types of microorganismsLO: to research the uses of microorganismsWatch powerpoint from cgp plusUsed in some cleaning products, food production, aid digestion, penicillin and can be decomposersVocabulary: 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 |