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| Subject: Science Year: Year 6  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  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 |