**Year group 6 - Living things and their habitats**

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| The learning objectives to be covered:  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.    Common misconceptions:   * all microorganisms are harmful * mushrooms are plants. | | | | | | | |
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|  | Session 1 | Session 2 | Session 3 | Session 4 | Session 5 | Session 6 |  |
| Science Knowledge LO: | To know the characteristics of different types of animal | To know who Carl Linnaeus was and how he used his classification system. | To understand what is meant by a branching key and how these are used | To know different types of invertebrates and explain their characteristics. | To know different flowering and non-flowering plants and use these to classify. | To know different types of microorganism | To know how to use data to make conclusions |
| Scientific Enquiry LO | To identify and group animals based on their characteristics | To research Carl Linnaeus and his classification system | To identify and create a branching key to classify vertebrates | To identify and describe some characteristics of vertebrates and invertebrates | To identify and describe the characteristics of flowering and non flowering plants | To investigate helpful and harmful microorganisms | To use data to form conclusions |
| Vocab to be covered | Classify, sort, group, similarities, differences, compare. | Carl Linnaeus, Linnaean, classification, standard, domain, kingdom, phylum, class, order, family, genus, species. | Characteristic classify Classification Invertebrate Vertebrate Branching key fish, amphibians, reptiles, birds, mammals. | Carl Linnaeus, Linnaean, classification, standard, domain, kingdom, phylum, class, order, family, genus, species. | Flowering plant, non flowering plant, paired statement key, pollination. | Microorganism, fungus, bacteria, virus, microscopic, mould, hypothesis | Microorganism, fungus, bacteria, virus, microscopic, mould, conclusion |
| Assessment | WTS: Children can sort less animals with support into already decided categories.  EXS: Children can sort 32 animals into groups with 2 groups already decided for them.  GDS: Children can independently identify how to split the animals into groups and use their characteristics as reasoning for this. | WTS: With support, children can discuss Carl Linnaeus and how his system works.  EXS: Children can research the work of Carl Linnaeus and how his classification system has been used for living things.  GDS: Children can research the work of Carl Linnaeus and how his classification system has been used for living things. Children can present their findings to others and make reference to animals within specific kingdoms. | WTS: With support, children can discuss how to use a branching key and how they could split vertebrates using this.  EXS: Children can use a branching key to identify 8 given vertebrates  GDS: Children can independently use their knowledge of branching keys and choose 8 vertebrates to sort. | WTS: With support, children can design an animal and discuss its features.  EXS: Children can design an animal using the knowledge of what invertebrates and vertebrates have.  GDS: Children can design an animal using the knowledge of what invertebrates and vertebrates have. Children are able to talk about this in detail and also talk about this as part of the Linnean system. | WTS: With support, children can discuss flowering and non flowering plants.  EXS: Children can identify flowering and non flowering plants.  GDS: Children can identify flowering and non-flowering plants and use these in a classification key. | WTS: With support, I children can decide how to plan and carry out a simple investigation and discuss this with an adult.  EXS: Children can decide how to plan and carry out a simple investigation and begin to follow simple steps for this.  GDS: Children can decide how to plan and carry out a simple investigation. Children can take control and recognise how they are going to record this data including graphs and charts. | WTS: With support, children can record their data and use this to discuss their findings.  EXS: Children can record their data and use this to share with them their conclusion to a given question.  GDS: Children can record their data and use this to share with them their conclusion to a given question. Children can identify where improvements were needed to improve the validity of the investigation. |
| Activities | Big Question: How can vertebrates be classified?  You can also classify animals as vertebrates – with a backbone, or invertebrates – without a backbone.  Watch BBC bitesize to find out whether ladybirds, crabs or tortoises have a backbone. <https://www.bbc.co.uk/bitesize/topics/zn22pv4/articles/z8mbqhv>  <https://www.bbc.co.uk/bitesize/topics/zn22pv4/articles/zp6g7p3>  Explore the characteristics that help classify vertebrates. For example, birds are warm blooded, lay eggs with hard shells and have feathers.  Activity: Create a mind map of the five | Big Question: How can we classify living things?  Plants come in many shapes and sizes. What makes plants different from animals? Watch this short BBC clip about plants <https://www.bbc.co.uk/bitesize/clips/z2k4d2p>  Watch this clip about Carl Linnaeus. He was an eighteenth century scientist interested in organising plants and animals into groups. He wasn’t successful the first time! <https://www.tigtagworld.co.uk/film/carl-linnaeus-PRM00688/>  Provide the children with the picture cards ask them to classify these living things by grouping into Animals, Plants and Fungi / Microorganisms  Give children something living that they have to research and explain how it fits into the Linnaean system. | Big Question: How can we use a branching key to classify vertebrates?  Investigate… Spread out about 10 different liquorice allsorts. Talk or think about their features:  • Round or square?  • Number of different colours?  • Smooth or rough surface?  Move on to using the branching key to identify vertebrates.  For example:  Birds and mammals are warm blooded; fish, reptiles and amphibians are cold blooded.  Fish and reptiles have scales; birds, mammals and amphibians do not.  Vertebrates can be classified using a branching key. Think about some questions you could ask when making a key for vertebrates.  Activity: Create a branching key for a mammal, a fish, a reptile and a bird. | Big question: What are the features of vertebrates and invertebrates?  Children discuss the different features of both vertebrates and invertebrates.  Whole class explores one animal together such as a platypus and looks at its features. What animal group do we think this belongs to?  Children design their own creature with an accompanying factfile to describe/show their creature. They use their understanding of the different features to talk about their creature and give reasons for the choices they make. | Big question: What do you already know about flowering and non-flowering plants?  Why are the flowers of some plants brightly coloured and those of other plants a dull green or brown? - Insect-pollinated plants usually have coloured petals. Many trees and grasses have dull, hanging flowers as they rely on the wind for pollination. Using the PowerPoint explore examples of non-flowering plants. Explain how a paired statement key works using the PowerPoint. Activity: use a paired statement key to classify hazel tree, buttercup, bracken, moss, spruce tree and grass. | Big question: What are microorganisms?  Begin by explaining what microorganisms are. Discuss helpful/harmful.  Matching activity -children could match the helpful and harmful microorganisms.  On the side of the room put a variety of materials for the children to look at.  Different types of bread (longer life/shorter life)  Different bags  Encourage children to think about what we could test when thinking about bacteria.  Examples -  Does the temperature impact the amount of bacteria that grows?  Does the type of bread impact?  etc… | Begin by revisiting the bread from last week's investigation.  Children look at their findings to make conclusions on their given question.  Once again, encourage independence with this. |