Science – Living things and their habitats – Year 5 and Year 6

Year 5 NC - pupils should be taught to:	How we do this in Year 5	Year 5 Vocabulary	Year 6 NC - pupils should be taught to:	How we do this in Year 6	Year 6 Vocabulary
Describe the life process of reproduction in some plants and animals <u>How working scientifically can be met</u>	*(Children have learnt about the parts of a flower and the processes of pollination and fertilisation in Year 3)* Explain sexual and asexual reproduction (sexual reproduction in more detail). Recap what they learnt in Year 3 about the parts of a flower and their function - look for children who can identify and explain the function of the different parts of a flower. Recap pollination - look for children who can describe the different ways plants reproduce through the processes of pollination and fertilisation. Highlight the differences between asexual and sexual reproduction in plants. Describe some familiar examples of plants that reproduce asexually. Identify advantages/ disadvantages of each type of reproduction. Look	Sexual, asexual, reproduction, gamete, cell, pollen, ovule, fusion, fertilisation, pollination. Asexual, sexual, reproduction, cuttings, roots.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals <u>How working scientifically</u> • sort and group • give reasons for classification • observable characteristics and based on similarities and differences	Recap classification and keys. Discuss that scientists who classify living things by comparing are called taxonomists. Children act as taxonomists to classify animals for a new zoo, by sorting and grouping the animals – look for children who can think of ways to sort and group the animals based on their similarities and differences. A Single Method? Children discuss how they classified the animals with the members of their group. Groups discuss whether and why taxonomists may use a single, standard method of classification. Discuss why it is important to have a standard system of classification. Ask children to discuss possible problems caused by not following a standard system. Describe Carl Linnaeus and his work on the classification system.	Classify, sort, group, similarities, differences, compare. Carl Linnaeus, Linnaean, classification, standard, domain, kingdom, phylum, class, order, family, genus, species.

	for children who can identify the advantages and disadvantages of each type of reproduction. Making New Plants - take cuttings from a geranium plant. This is an artificial method of asexual reproduction. Any cuttings that develop roots over the next few weeks can be planted into pots of compost. These new plants will be genetically identical to the parent plant. Children explain this method of asexual reproduction - look for children who are able to explain their understanding of asexual reproduction in plants, and how this makes new plants.		• identify the characteristics	Explain the Linnaean system of classification and give examples for each level. Show the children how a species can be classified at each level of the standard system. Explain how the genus and the species gives a living thing its scientific name. Describe and explain microorganisms and describe the examples of microorganisms e.g. plankton, mould, yeast etc. Describe the helpful and harmful uses and effects of microorganisms What Makes Mould Grow? Mouldy bread investigation. Explain their conclusions and describe how they could use the results of their investigation to keep bread mould-free for longer. Explain how Microorganisms are classified and explain the main difference in the structure of the cells of	Microorganism, fungus, bacteria, virus, microscopic, mould. Microorganism, cell, eukaryote, nucleus, DNA, fungus, virus, bacteria.

				different microorganisms, in particular fungi and bacteria - identify which is a fungus cell and which is a bacterium cell. Use different colours of play dough to sculpt their own single-celled Microorganism in a petri dish – look for children who are able to use the characteristics of the different cells to create their own microorganism, and who can describe its uses and effects.	
Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird <u>How working scientifically can be met</u> • describe and compare • identify similarities and differences	*(Children have learnt about the stages of the human life cycle in lesson 1 of the Y5 Animals Including Humans unit)* Discuss animals that are mammals. Use a rabbit's life cycle to order correctly. Describe sexual reproduction in mammals Discuss monotreme - mammals such as the duck-billed platypus that do not give birth to their young, but lay eggs instead. Children watch this BBC clip showing the moment of conception and the growth of a baby. https://www.bbc.co.uk/bitesize/clips/zpmqxnb *This clip should be	Sexual, reproduction, gamete, male, female, sperm, ovum, fertilise, pregnancy, gestation, montreme, marsupial, young.	Give reasons for classifying plants and animals based on specific characteristics. <u>How working scientifically can be met</u> • classify a creature based on its characteristics • group and classify • give reasons	Recap different groups of vertebrates and invertebrates. Match the characteristics with the correct groups of animals. Describe the discovery of the platypus. Point out the defining characteristics and explain why the platypus is classified as a mammal and not a reptile or bird. Create a field guide to the organisms found in the local habitat: -identify living things in the habitat around their school -keep a list of the plants and animals they find	Classify, organism, species, vertebrates, invertebrates, mammals, birds, amphibians, reptiles, fish, insects, arachnids, molluscs, crustaceans, annelids, plants, flowering, non-flowering.

	checked beforehand to ensure it is suitable for the children in your class* Describing Reproduction - look for children who understand the process of sexual reproduction, and can order and describe the stages. Describe the three different groups of mammals (placentals, marsupials and monotremes) and discuss examples of animals in each group. Children describe the stages of the life cycle of one of the different mammals e.g. a platypus (a monotreme), a kangaroo (a marsupial) or a rabbit (a placental). Look for children who can order and describe the life cycles. Comparing Life Cycles - consider the similarities and differences between the different mammals. Introduce Jane Goodall and explore Jane's work with chimpanzees in Tanzania. Explain the fact that chimpanzees are an endangered species, and the threats they face in	Family tree, chimpanzee, Jane Goodall, life cycle, endangered, extinct.		-classify the organisms they found Look for children who can classify living things according to their characteristics and give reasons for their classification choices	

	the wild. Briefly describe the work of the Jane Goodall Institute, and the way it works to protect chimpanzees in the wild. Children work in groups to create an advert to ask for donations to the Institute. Explain metamorphosis. Talk about animals they know that undergo metamorphosis. Amphibians and Insects – explore and describe the stages of the different life cycles. Look for children who can identify similarities and differences between the life cycles, spotting common features and between insects and amphibians. Explain the role of eggs in a bird's life cycle. Children discuss parts of an egg, and crack open an egg to see if they can identify these parts. Identify and explain the function of the parts of an egg. Life Cycle of a Bird -	Metamorphosis, amphibian, insect, transform, larvae, pupa, nymph, egg. Egg, yolk, albumen, embryo, bird, mammal, amphibian, insect, plant, life cycle, reproduce.			

	children try to order the stages of the life cycle of a bird and discus each stage. Comparing Life Cycles: children watch this clip to identify different types of plants animals and the stages of their life cycles. https://www.bbc.co.uk/bitesize/clips/zp62tfr Children take on the role of wildlife presenters - write a script to narrate a programme all about life cycles of different animals. Children perform their script to an audience. Look for children who can describe and compare the life cycles of plants, mammals, birds, insects and amphibians.				