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| Subject: Science Year: LKS2 Year 4 – Living things and their habitats  NC/PoS:   * Recognise that living things can be grouped in a variety of ways. * Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. * Recognise that environments can change and that this can sometimes pose dangers to living things. |
| **Prior Learning** (what pupils already know and can do)  Know that living things all use the following processes: movement, respiration, sensitivity, growth, reproduction, excretion and nutrition. Name a variety of common wild and garden plants, including deciduous and evergreen trees. Name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Describe and compare the structure of a variety of common animals: fish – have a backbone, gills and fins; amphibians – have moist, skin that absorbs water and oxygen; reptiles – have tough scales and lungs for breathing air; birds- light skeletal system and muscles to help it fly: mammals- have hair or fur, females produce milk for their young. Name a variety of plants and animals in their habitats. |
| **End Goals** (what pupils MUST know and remember)   * Know examples of how living things can be grouped – invertebrates (no backbone) vertebrates (have a backbone) and plants can be classified into flowering and non-flowering plants * Know how to use a classification key to help group, identify and name a variety of living things – e.g. Can it fly, does it crawl, does it belong in… * Know how to identify invertebrates (annelids, sponges, echinoderms, insects, molluscs, crustaceans, arachnids) and vertebrates (amphibians, birds, fish, mammals, and reptiles) * Know how environments can change and how it can potentially pose a danger to living things -global warming, litter, oil spill, chemical pollution, deforestation, and land development * Know environments can change and have a positive effect – nature reserves, parks and gardens, community gardens and ponds |
| **Key Vocabulary**: vertebrate, invertebrate, molluscs, arachnids, crustaceans, insects, classification key, antennae, segmented body, woodlouse, centipede, beetle, algae, mosses, ferns and coniferous tree, cereals, global warming, litter, oil spill, chemical pollution, land development, nature reserves, |
| **Curriculum Connections**   * Geography: biomes linked to lines of latitude. * PSHE: Emphasising environmental conservation * RE: Stewardship of the world, Humanism * Mathematics: Using graphs to classify and group living organisms. * IT: grouping and presenting (decision trees) |
| **Career Opportunities**   * Ecologist: Studies relationships between organisms and their environments. * Wildlife Conservationist: Protects species and habitats. * Taxonomist: Classifies and names species. * Environmental Consultant: Provides advice on biodiversity and conservation. |
| Session 1: Recap session  Revisit living things all use the following processes: movement, respiration, growth, reproduction  Revisit: names of common wildflowers – dandelion, forget-me-not, cornflower; garden flowers – rose, fuchsia, geranium; deciduous trees – ash, oak, beech, silver birch, alder; evergreen trees pine, spruce, cedar  Revisit comparing the structure of a variety of common animals: fish – have a backbone, gills and fins; amphibians – have moist, skin that absorbs water and oxygen; reptiles – have tough scales and lungs for breathing air; birds- light skeletal system and muscles to help it fly: mammals- have hair or fur, females produce milk for their young.  Revisit plants and animals in their habitats.  Vocabulary: |
| Session 2: Recap: Name and identify common wildflowers, garden flowers and trees from session 1.  Children learn that vertebrates have a backbone and include fish, amphibians, reptiles, birds and mammals. Invertebrates include snails and slugs (molluscs), worms (annelids), spiders (arachnids), crustaceans, echinoderms and insects.  Suggested resources:  <https://www.youtube.com/watch?v=bsjP3940BHA> invertebrates from 4:18  <https://www.bbc.co.uk/bitesize/topics/z484382/articles/z8mbqhv> what is an invertebrate?  <https://www.bbc.co.uk/bitesize/topics/z484382/articles/zp6g7p3> what is a vertebrate?  Children sort photographs using a classification key    Vocabulary: vertebrate, invertebrate, molluscs, annelids, arachnids, crustaceans, echinoderms, sponges and insects, classification key |
| Session 3: Recap: What are the vertebrate groups? Name the invertebrate groups.  Children learn to use a classification key to identify animals in their local environment.  Suggested resources:  Use ‘pooters’ to collect any mini-beasts, place cream sheet under bush and gently shake, use magnifying glasses  Children produce their own classification key to sort the animals they found after modelling from teacher.  Vocabulary: antennae, segmented body, woodlouse, centipede, beetle |
| Session 4: Recap: what animals were found in the local environment?  Children learn plants can be classified into flowering and non-flowering plants. Flowering plants include grasses, shrubs, cereals and deciduous trees. Non-flowering plants can be classified into algae, mosses, ferns and coniferous trees.  Suggested resources:  <https://www.youtube.com/watch?v=cgVlrtGnG6s> classifying and grouping plants  <https://www.dkfindout.com/uk/animals-and-nature/plants/flowering-plants/>  <https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/plants/grasses-and-sedges/>  <https://www.dkfindout.com/uk/animals-and-nature/plants/non-flowering-plants/>  <https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/plants/ferns/>  Children sort photographs using a classification key    Vocabulary: flowering, non-flowering, algae, mosses, ferns and coniferous trees, grasses, shrubs, cereals and deciduous trees |
| Session 5: Recap: how might we classify plants? Name types of flowering plants. Name types of non-flowering plants.  Children learn to use a classification key to identify plants in their local environment.  Suggested resources:  Children produce their own classification key to sort the plants they found after modelling from teacher.  Vocabulary: leaves, flowers (plants in local environment – white clover, nettles, grasses, ivy, dog rose) |
| Session 6: Recap: what plants are there in the local environment?  Children learn environments can change and potentially pose a danger to living things -global warming, litter, oil spill, chemical pollution, deforestation and land development. Environments can change and have a positive effect – nature reserves, parks and gardens, community gardens and ponds  Use ypte.org.uk Living things and their habitats for images  Vocabulary: negative, positive, global warming, litter, oil spill, chemical pollution, deforestation, land development, nature reserves, parks and gardens, community gardens, ponds |