

Biology

Living Things & Their Habitats

Working Scientifically Drives All of the Substantive Knowledge

NC Objectives	Key Scientific Knowledge	Key Vocabulary	Working Scientifically
Year 2			
To explore and compare the differences between things that are living, dead, and things that have never been alive	<p>To be able to identify characteristics for life e.g. growth, reproduction, movement, response to environment</p> <p>To know that e.g. plants/ animals/ mushrooms are alive (and can die)</p> <p>To know that only living things that have 'lived' (in a scientific sense) can die (characteristics of life stop)</p> <p>To identify things that have never been alive e.g. metals,</p>	<p>Characteristic, reproduction, growth, environment, compare, same, different, similar</p> <p>Alive, dead, living, have never lived, metal</p> <p>Research, spiritual, scientific,</p>	<p>Use observations to suggest answer to questions. Which of these is living/ is dead/ has never lived.</p> <p>Support children in raising questions (Huge potential for discussion/ extension. Some chn will know that plastics come from oil/ organic matter; so not many things 'never have lived'.)</p> <p>Does a deciduous tree 'die' in Winter? Is fire alive? What does death mean? (non religious/ spiritual sense- purely scientifically/ medically). How do you know if something is alive?</p> <p>Teacher asks: How do we know if something has lived/ has died/ never has lived? Explore/ discuss. Do things that are alive have things in common? Teacher explains that scientists call these 'Characteristics for life'.</p>
To identify that most living things live in habitats to which they are suited and describe	To know that animals live in habitats to which they are suited e.g. colder temperature= thicker fur;	Organism, habitat, suited, basic needs, survival, depend	Research the different ways animals/ plants are suited to dry/ cold/ hot environments/ habitats.

	<p>Pond: pond-weed, dragon-fly, frog/ froglet, tadpole/ frog-spawn, water boatman, newt,</p> <p>Micro-habitat (e.g. under log): woodlouse, worm, millipede, centipede, mushroom/ fungus,</p>		
To describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	<p>To understand that animals can eat other animals to obtain energy</p> <p>To be able to create a simple (3-part) food chain e.g. grass, rabbit, cow</p> <p>To be able to identify different sources of food, e.g. plants/ berries/ animals, rotting material/ organic matter</p>	Energy, eat/ consume, food chain, source of food,	<p>Create simple (3 parts) food chains (modelling) as diagrams, always starting with plant.</p> <p>Explain where different animals get their foods from; chn present findings orally.</p>

Year 4

To recognise that living things can be grouped in a variety of ways	<p>To identify the difference between invertebrates (lacking backbone) and vertebrates.</p> <p>To understand the terminology: Skeleton, exoskeleton, bones, backbone</p>	<p>Vertebrates (reptiles, birds, fish, mammals, amphibians – Yr 1 link)</p> <p>Invertebrates (insects, spiders, worms, snails, slugs)</p> <p>Exoskeleton,</p>	<p>Explore and group/ classify different vertebrates/invertebrate groups</p> <p>Observe examples of x-rays of vertebrates and decide which animal/ vertebrate group is being studied</p>
To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	To be able to use a classification key in identifying an organism (e.g. plant / animal) , based on its physical features	Classification key, identify, physical feature, group, environment	Explore and observe local environment using keys e.g. tree ID/ pond ID- school grounds/ Pilley Nature Reserve
To recognise that environments can change and that this can	To be able to identify how environments can change (e.g.	Environment, pollution, impact, climate change,	Research ways in which humans have positive/ negative impacts on living things

<p>sometimes pose dangers to living things.</p>	<p>seasonally/ through fire/ pollution/ deforestation/ climate change)</p> <p>To be able to identify naturally occurring changes and man-made changes to environments.</p> <p>To be able to identify the positive and negative impacts of these changes on living things e.g. some plants need fire to spread seeds; positive impact of humans setting up nature reserves)</p>	<p>natural, man-made, positive, negative,</p>	<p>Use scientific evidence to answer questions: e.g. What impact do humans have on the Great Barrier Reef/ Mount Everest/ beaches?</p>
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Year 5

<p>To describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p>	<p>To be able to describe the life cycles of mammals, an amphibian, an insect and a bird.</p> <p>To be able to identify differences in the life cycles of these</p>	<p>Life cycle, mammal, amphibian, insect, bird, egg, young, metamorphosis, complete, incomplete, pupa, larva, adult, baby, stage</p>	<p>Draw diagrams, using scientific language, to show details of these life cycles. Observe & research animals' life cycles in local environment</p> <p>Research work of naturalists' / animal behaviourists' e.g. Attenborough/ Goodall and how their observations of animal behaviour feeds into global understanding of a species (and what this can mean for the conservation of a species)</p> <p>Consider WHY it's important to understand the life-cycle of animals e.g. In order to conserve a species, you have to understand its needs e.g. food/ shelter, at different life cycle stages. Conservation/ Ecology link</p>
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<p>To describe the life process of reproduction in some <u>plants</u> and animals.</p>	<p>To describe the life process of reproduction in different plants e.g. ferns= produce spores, flowering plants make seeds, bulbs (asexual reproduction) make more bulblets)</p>	<p>Reproduction, asexual, sexual, male, female, bulb, seed, spore, tuber,</p>	<p>Observe over time & grow plants from seed/ bulb/root cuttings.</p> <p>Present findings orally and in writing: describe how some plants can reproduce asexually e.g. crocus/ potato (e.g. chit seed potatoes)</p>
<p>Year 6</p>			
<p>To 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</p>	<p>To be able to group animals into invertebrates/ vertebrate groups (Yr 4 revision), based on similarities/ differences.</p> <p>To be able to explain that scientists group animals/ plants/ micro-organisms based on common observable characteristics and similarities/ differences, giving examples.</p> <p>To understand what micro-organisms are and give examples e.g. bacteria (e.g. found in live yogurt; corona virus; flu virus, common cold-virus)</p>	<p>Classify, classification, Linnaeus, divide, sort, sub-divide (<i>Challenge: taxonomy</i>)</p> <p>Micro-organism, bacteria, virus, fungus</p>	<p>Chn should begin to name different groups e.g. kingdom, phylum...species</p> <p>Explore the significance of Carl Linnaeus' work –pioneer of classification- and how he organised groups. Use his work to raise further questions. (His work : System of Nature')</p> <p>Explore classification systems.</p>
<p>To give reasons for classifying plants and animals based on specific characteristics.</p>	<p>To be able to sort an animal/ plant/ micro-organism into a group based on specific characteristics.</p>		<p>Use classification keys/ systems to sort familiar and unfamiliar animal/ plants from the local environment/ from examples given into groups.</p> <p>Make own classification keys.</p>

