CAPTAIN WEBB PRIMARY SCHOOL

Science Curriculum – Key Knowledge and Skills

BIOLOGY

Range 4: Daycare	Range 5: Nursery	Range 6: Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants – Substantive								
I know that plants need to be cared for to keep them alive.	I know that from a seed, will grow a plant.	I know the name of some plants I am likely to see whilst I am outside at school (daffodils, daisy). I can make observational drawings of plants, which include the main parts (stem, flower, leaf).	I know that the main parts of a plant are the petals, stem, leaf, flower, seed and root. I know a range of common wild and garden plants. I know that the main parts of a tree are trunk, branches and root. I know a range of deciduous and evergreen trees and that evergreen tress keep their leaves all year.	I know how seeds and bulbs grow into mature plants. I know that plants need water, light and a suitable temperature to grow and stay healthy.	I know the functions of different parts of flowering plants (roots, stem/trunk, leaves and flowers). I know the way in which water is transported within plants. I know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.			
Vocabulary								
Plant, water, care	Seed, grow	Stem, flower, leaf, daffodil, daisy	root, stem, flower, seeds, petal, fruit, branch, trunk, oak, silver birch, ash, nettle, ivy, dandelion, rose, sunflower, lavender deciduous, evergreen	Bulb, water, light, suitable temperature, seedling, seed	Transport, stem, leaf, root hair, life cycle, pollination, seed dispersal			
Scientific enquiry - Disciplinary								
			What plants and trees grow in our local area? (Identifying, classifying, and grouping)	What conditions are best for plants to grow? (Comparative and fair testing) Can you observe what happens over time when you plant a seed? (Observation over time)	What happens to celery when it is left in a glass of coloured water? (Observation over time)			

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Range 4: Daycare	Range 5: Nursery	Range 6: Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
All Living things (and their habitats) – Substantive								
I know how to talk about some of the things I observe (i.e. plants, animals and natural found objects)	I know that I need to respect and care for living things.	I know some similarities and differences between the natural world around us and contrasting environments.		I know some of the life processes common to plants and animals, including humans. I know whether something is living, dead or never alive. I know a variety of worldwide habitats. I know that most living things live in habitats to which they are suited. I know a variety of microhabitats I know that certain living things depend on one another to survive I know what a simple food chain shows I know that animals obtain their food from plants and other animals		I know that living things can be grouped in a variety of ways (animals, plants, vertebrates, and invertebrates using Venn diagrams and Carroll diagram) I know that classification keys help group, identify and name a variety of living things (a classification key) I know how to classify animals found in my local environment I know that changing environments can sometimes pose dangers to living things	I know the characteristics of a mammal, amphibian, insect, reptile, fish and a bird (1) I know the differences between the life cycles of an amphibian and an insect (2) I know the differences between the life cycles of a bird and a mammal (3) I know the similarities and differences between life cycles of animals in different environments (4) I know the process of reproduction in plants (5 and 6) I know the importance of the work of naturalists and animal behaviourists (David Attenborough and Jane Goodall)	I know that living things are classified into broad groups according to common observable characteristics I know that plants can be classified based on their similarities and differences I know that some microorganisms can be harmful

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Vocabulary								
Animal, plant, leaf	Alive, not alive	Environments		Habitat, conditions, living, dead, never alive, food chain, shelter, depend, suitability, life processes, microhabitats		Classify, species, invertebrate, vertebrate, environment, classification key	Life cycle, bird, fish, amphibian, reptile, mammal, reproduction, asexual, fertilisation, germination, pollination, seed dispersal, metamorphosis	Microorganism, characteristics, fungi, virus, bacteria, mosses, ferns, flowering plants, conifers, algae, preservation
Scientific enquiry - Disciplinary								
				Can you group living, dead, and never alive things? (Identifying, classifying, and grouping) Which habitat do worms prefer, and where can we find the most worms? (Pattern seeking)		Which animals live in Dawley Pools? (Identifying, classifying, and grouping)		Which classroom in school if the dirtiest? (Observation over time)

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Animals Including Humans – Substantive								
I know that I need to care for animals. I know where my eyes, ears, mouth and nose are.	I know that a chick hatches from an egg. I know the names of some body parts (arms, legs, feet, hands and head).	I know what my five senses are. I know what a pet needs to be cared for. I know how to use my eyes, ears and hands to describe what I can see, hear and feel. I know how to care for the school guinea pig (water, food and a clean home). I know the names of animals I will see at the farm. I can make observational drawings of animals, which include the main parts.	I know the names of a variety of common animals and their body parts (birds, fish, amphibians, reptiles and mammals) I know a variety of common animals that are carnivores, herbivores and omnivores I know the main parts of the human body I know which parts of my body are linked to my senses	I know that animals, including humans, have offspring which grow into adults. I know the lifecycles of some living things I know the basic needs of animals, including humans, for survival (water, food and air) I know the importance of eating the right amounts of food for humans I know why exercise is important for humans I know why hygiene is important for humans	I know the importance of a nutritionally balanced diet I know that animals, including humans, cannot make their own food: they get nutrition from what they eat I know that humans have a skeletal system to protect our organs I know how the muscular system of a human helps you move	I know the basic parts of the digestive system in humans I know the name and the function of different types of teeth in humans I know why the teeth of herbivores and Carnivores are different I know how to construct and interpret a variety of food chains (identifying producers, predators and prey)	I know and can describe the changes as humans develop to old age I know that gestation periods vary between animals I know the changes humans experience during puberty, including physical and emotional changes I know menstrual wellbeing including the key facts about the menstrual cycle	I know the main parts of the human circulatory system and the function of the blood vessels. I know the functions of the heart. I know the components of blood. I know the ways in which nutrients and water are transported within animals, including humans. I know the impact of diet and exercise on the way my body functions (heart rate and salt).

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								I know the impact of drugs and alcohol on the way my body function
Vocabulary								
Animals, care, eyes, ears, nose, mouth	Egg, hatched, born, chick, hen, head, arms, legs, feet, hands	Senses, smell, touch, taste, hear, sight, food, home, water	bird, fish, amphibian, reptile, mammal, carnivore, herbivore, omnivore, feathers, scales, fur, skin, features, compare, fingers, foot, skin, hair, elbows, neck	human, adult, parent, young, offspring, air, exercise, lifecycle, basic needs, survival, hygiene, healthy, diet, height, growth, weight	nutrition, protein, carbohydrate, minerals, vitamins, fats, sugars, balanced diet, skeleton, skull, spine, ribcage, pelvis, femur, calcium, muscle	Stomach, intestines, liver, anus, mouth, canine, molar, incisor, digest, producer, prey, fibre, predator	Puberty, Life cycle, gestation, womb, elderly, reproduction, sperm, egg, fetus, baby, fertilisation,	circulation, heart, blood vessel, veins, capillaries, lungs, respiration, pulse, ventricle, aorta, atrium, artery, oxygen, lungs, Blood cells, inhale, breathing.
Scientific enquiry - Disciplinary								
			Does the poo belong to an omnivore, carnivore or a herbivore? (Research)	What food do you ned to be healthy? (research)	Do male humans have larger skulls than female humans? (Pattern seeking) How many bones does the human body have, and why do we need bones? Leading onto child led research (Research)	What are the functions of the main parts of the digestive system? (Research)	Is there a relationship between a mammal's size and tis gestation period? (Pattern seeking)	Does the child with the longest legs run the fastest? (Pattern seeking) What are the components of blood and what is their purpose? (Research)

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Evolution and Inheritance – Substantive								
								I know that fossils provide information about living things that inhabited the earth millions of years ago. I know that fossils, skeletons and DNA provide information about living things that inhabited the earth millions of years ago. I know why offspring vary and are not identical to their parents. I know how animals have adapted to suit their environment I know that lack of adaption can lead to extinction.
Vocabulary								
								Natural selection, characteristic, species, offspring, adapt, evolve, inherit, trait, extinct
Scientific enquiry - Disciplinary								
								Can you compare the skeletons of apes, humans, and Neanderthals – how are they similar, and how are they different? (Identifying, classifying, and grouping) What did Charles Darwin discover about the finches when he visited the Galapagos Islands? (Research)