

The Duke of Bedford Primary School – Knowledge progression – Science Biology

Biology				
	Plants	Animals, including humans	Evolution and inheritance	Living things and their habitats
EYFS	<p>Summer 1: Identify plants and non plants.</p> <p>Know that some plants are safe to touch and some aren't.</p> <p>Know that most flowering plants have a stem, leaves, roots and a flower.</p> <p>Know that plants need water and sun to grow.</p> <p>Know that fruits and vegetables come from plants.</p>	<p>Spring 1: Know that some animals are suitable to keep as pets and others are not.</p> <p>Know that animals needs food, water and shelter to stay alive.</p> <p>Know that animals have babies, some have live babies and some lay eggs which hatch into babies.</p> <p>Summer 2: Know that whales have fins, a blow hole and breath air like humans.</p> <p>Know that fish has fins, scales and gills which help them breathe under water. Fish lay eggs.</p>		<p>Spring 1: Know that a farm is a habitat and different animals live there.</p> <p>Identify common farm animals: cow, pig, sheep, goat, horse, donkey, duck, chicken.</p> <p>Know that farms have the things these animals need to stay alive.</p> <p>Summer 2: Know that whales and fish live in oceans or seas.</p> <p>Know that some animals cannot live underwater.</p> <p>Know that animals that live in water need food, water and shelter to survive.</p>
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Year 1	<p>Understand that some things are living and others are not living and be able to distinguish between these. Y1 P L1</p> <p>Know that plants are living things and be able to distinguish plants from other living things. Y1 P L1</p> <p>Recognise that trees and grasses are plants. Y1 P L3</p> <p>Know the differences between deciduous and evergreen trees (by observation). Y1 P L3</p> <p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Y1 P L1, L3, L5, L6</p> <p>Know that plants have features in common. Y1 P L2</p> <p>Identify and name the leaf, flower, root, and stem in plant specimens, diagrams and photographs. Y1 P L2</p> <p>Know that some trees have special names for plant parts, e.g. blossom, branch, trunk. Y1 P L4</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees. Y1 P L2, L4</p>	<p>Identify what an animal is. Y1 TOA L1</p> <p>Name some animals, e.g. pets, farm and zoo animals such as cats, dogs and fish. Y1 TOA L1</p> <p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Y1 TOA L1, L2, L3, L4, L6</p> <p>Recognise external features of animals, e.g. fur, feathers, wings, fins etc. Y1 TOA L1</p> <p>Identify differences and similarities between animals, including pets, that belong to different animal groups. Y1 POA L6; Y1 TOA L3</p> <p>Be able to sort animals by observable features (scales, wings, beaks). Y1 TOA L4</p> <p>Compare external features of humans with other animals. Y1 POA L5, L6</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Y1 POA L5, L6</p> <p>Know that different animals eat different things. Y1 TOA L5</p> <p>Distinguish between the diets of carnivores, herbivores and omnivores. Y1 TOA L5</p> <p>Know that animals can be sorted into groups by what they eat, e.g. herbivores, carnivores and omnivores. Y1 TOA L5</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Y1 TOA L2, L5, L6</p>		

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		<p>Name and identify the main human body parts (arms, legs, chest, head etc.). Y1 POA L1</p> <p>Name the five senses. Y1 POA L3</p> <p>Identify which body part is associated with each sense (for touch, skin rather than hands/fingers). Y1 POA L3, L4, L5</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Y1 POA L1, L2, L3, L4</p>		
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Year 2	<p>Understand that plants can produce seeds and new plants without human intervention. Y2 GP L1, L2, L3</p> <p>Know that when people grow plants from seeds they need to provide particular conditions. Y2 GP L2</p> <p>Be able to name basic plant needs. Y2 GP L2</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. Y2 GP L2, L3</p>	<p>Understand that all living things have the same basic needs to stay alive. Y2 FAE L1</p> <p>Know that animals, including humans, need to eat, drink and 'breathe' to stay alive. Y2 FAE L1</p> <p>Understand that different animals eat different food. Y2 FAE L2, L3</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Y2 FAE L1, L2</p> <p>Understand the importance for humans of eating the right amount of different types of food. Y2 FAE L5</p> <p>Understand the consequences of insufficient exercise, poor diet and poor personal hygiene. Y2 FAE L6</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Y2 FAE L5, L6</p>		<p>Know that it would be difficult for some living things to survive in habitats to which they were not suited. Y2 H L2, L6</p> <p>Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Y2 H L1, L2, L3, L5, L6</p> <p>Understand that within habitats there may be smaller habitats called micro-habitats. Y2 H L2, L3, L4, L5</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats. Y2 H L4</p> <p>Know that food can be of plant origin or animal origin. Y2 FAE L2</p> <p>Understand that some animals eat plants, that some eat other animals and that some eat both plants and animals. Y2 FAE L3</p> <p>Know that animals depend on plants and animals in their environment for food. Y2 FAE L3</p> <p>Know the term 'food chain' and recognise its sequential nature starting with green plants. Y2 FAE L3</p> <p>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. Y2 FAE L3, L4</p>
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Year 3	<p>Be able to recognise some living things as plants. Y3 POP L1</p> <p>Recognise that although they may look different, plants have some features in common, e.g. roots, stem, leaves. Y3 POP L1, L2</p> <p>Be able to recognise and name major plant parts. Y3 POP L1</p> <p>Know that not all plants have flowers. Y3 POP L1</p> <p>Know that each part of a plant has a different job to do (function). Y3 POP L2, L3, L4</p> <p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Y3 POP L1, L2, L3, L6</p> <p>Understand that plants need water to live. Y3 POP L2; Y3 WPN L1, L2</p> <p>Be able to identify the roots of a plant. Y3 POP L1, L2</p>	<p>Sort different types of food into groups. Y3 MF L1</p> <p>Know why we need different types of food to stay healthy. Y3 MF L1</p> <p>Understand that some foodstuffs can be harmful to some animals. Y3 MF L2</p> <p>Explain why undereating and overeating can be harmful. Y3 MF L3</p> <p>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Y3 MAF L1, L2, L3, L4, L6</p> <p>Name some common bones. Y3 MF L4</p> <p>Know bones are strong and rigid. Y3 MF L4</p> <p>Describe how muscles and tendons contract and relax to help with movement. Y3 MF L4</p>		

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	<p>Be able to describe the functions of the roots of plants. <i>Y3 POP L2</i></p> <p>Describe how water moves from the soil into a plant's roots and up through the stem through the plant. <i>Y3 POP L2</i></p> <p>Investigate the way in which water is transported within plants. <i>Y3 POP L2, L3</i></p> <p>Be able to name basic plant needs. <i>Y3 WPN L1, L6</i></p> <p>Know that without air, light, water and nutrients a plant will not thrive. <i>Y3 POP L2, L3; Y3 WPN L1, L6</i></p> <p>Recognise that plants need the correct amount of water to grow well, e.g. that plants will not grow well if they have too much or too little water. <i>Y3 WPN L2</i></p> <p>Know that plants can outgrow their containers and become root bound. <i>Y3 WPN L3</i></p> <p>Recognise that some soils are better at supporting plant growth than others. <i>Y3 WPN L4</i></p> <p>Understand that soil provides the nutrients to help plants grow. <i>Y3 WPN L4</i></p> <p>Recognise that fertilizers can provide additional nutrients to help plant grow. <i>Y3 WPN L5, L6</i></p> <p>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. <i>Y3 WPN L1, L2, L3, L4, L5, L6</i></p> <p>Understand that many plants grow from seeds. <i>Y3 POP L5</i></p> <p>Know that flowers are the parts of the plant where reproduction (new seed production) happens. <i>Y3 POP L4</i></p> <p>Know that seeds cannot form without a flower being pollinated. <i>Y3 POP L4</i></p> <p>Know that after pollination the plant produces fruit containing seeds. <i>Y3 POP L4, L5</i></p> <p>Be able to describe some forms of seed dispersal. <i>Y3 POP L5</i></p> <p>Be able to sequence the life cycle of a flowering plant. <i>Y3 POP L4, L5</i></p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. <i>Y3 POP L4, L5</i></p>	<p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement. <i>Y3 MAF L1, L2, L4, L6</i></p>		
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Year 4		<p>Know that the human body has organs and be able to name some. <i>Y4 HN L1</i></p> <p>Know that each organ has a function. <i>Y4 HN L1, L2</i></p> <p>Understand that some groups of organs work together in a system. <i>Y4 HN L1, L2</i></p> <p>Recognise that humans have a body system which digests (breaks down) food. <i>Y4 HN L1</i></p> <p>Know that this system is called the digestive system. <i>Y4 HN L1</i></p> <p>Be able to name and describe the main organs of the digestive system: teeth, mouth, tongue, oesophagus, stomach, small and large intestines, rectum and anus. <i>Y4 HN L1, L2</i></p>		<p>Recognise that there is a vast array of living things. <i>Y4 GLT L1</i></p> <p>Know that living things can be grouped according to features that they share. <i>Y4 GLT L2</i></p> <p>Use more than one way to sort the same group of living things. <i>Y4 GLT L2</i></p> <p>Recognise that living things can be grouped in a variety of ways. <i>Y4 GLT L1, L2</i></p> <p>Recall and use appropriately the term 'classification'. <i>Y4 GLT L3</i></p> <p>Use a simple classification key to identify and name a living thing. <i>Y4 GLT L5, Y4 GLT L6</i></p>

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		<p>Be able to sequence the process of digestion. Y4 HN L2</p> <hr/> <p>Describe the simple functions of the basic parts of the digestive system in humans. Y4 HN L1, L2</p> <hr/> <p>Know that teeth are part of the digestive system. Y4 HN L1, L2, L3</p> <hr/> <p>Recognise that human teeth are not all the same size or shape. Y4 HN L3</p> <hr/> <p>Be able to identify and name the main types of teeth in humans: incisor, canine, pre-molar, molar. Y4 HN L3</p> <hr/> <p>Understand that the shape of a tooth is linked to its function, e.g. slicing, tearing, chewing or grinding food. Y4 HN L2, L3</p> <hr/> <p>Identify the different types of teeth in humans and their simple functions. Y4 HN L1, L3, L4, L5, L6</p> <hr/> <p>Recognise that animals obtain their food from plants and other animals. Y4 DLT L1</p> <hr/> <p>Know that food is a basic need and the availability of food affects the animals found in an environment. Y4 DLT L1</p> <hr/> <p>Recognise that all food chains start with a plant and that arrows show the direction of the energy (food) being transferred i.e. 'gets eaten by...' Y4 DLT L2</p> <hr/> <p>Know that green plants are producers because they make their own food. Y4 DLT L2</p> <hr/> <p>Recognise that there is only one herbivore in a food chain. Y4 DLT L2</p> <hr/> <p>Define a predator as an animal that eats another animal and prey as an animal that gets eaten by another animal. Y4 DLT L2</p> <hr/> <p>Recognise that the same animal can be both predator and prey. Y4 DLT L2</p> <hr/> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey. Y4 DLT L1, L2, L3</p>		<p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Y4 GLT L3, L4, L5, L6</p> <hr/> <p>Recall the term 'environment'. Y4 DLT L1, L4</p> <hr/> <p>Understand that environments can be changed in positive ways, e.g. the creation of nature reserves, and in negative ways, e.g. deforestation. Y4 DLT L1, L4, L5, L6</p> <hr/> <p>Identify ways in which humans can reduce the effects of environmental change. Y4 DLT L5</p> <hr/> <p>Record the effects of small scale change on living things in a local environment. Y4 DLT L5</p> <hr/> <p>Recognise that environments can change and that this can sometimes pose dangers to living things. Y4 DLT L1, L3, L4, L5, L6</p>
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Year 5		<p>Know that humans have a life cycle. Y5 LC L1, L2, L5</p> <hr/> <p>Know that humans change in appearance and capabilities as they age. Y5 LC L4</p> <hr/> <p>Describe the changes as humans develop to old age. Y5 LC L4</p>		<p>Recognise that all living things have a life cycle. Y5 LC L1</p> <hr/> <p>Know that all life cycles have distinct stages. Y5 LC L1, L2</p> <hr/> <p>Know that some animals metamorphose during their life cycle. Y5 LC L3</p> <hr/> <p>Be able to describe the process of metamorphosis. Y5 LC L3</p> <hr/> <p>Be able to identify life cycle stages in different animals. Y5 LC L2, L3, L5</p>

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				<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Y5 LC L1, L2, L3</p> <hr/> <p>Be able to describe and sequence parts of plant and animal life cycles. Y5 LC L5</p> <hr/> <p>Understand that sexual reproduction in plants and animals requires fertilisation to occur, i.e. between two parents. Y5 LC L6</p> <hr/> <p>Know that some plants can reproduce without other plants. Y5 LC L5</p> <hr/> <p>Describe the life process of reproduction in some plants and animals. Y5 LC L5, L6</p>
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Year 6		<p>Know that the human body contains organs. Y6 OB L1</p> <hr/> <p>Know that each organ has a specific function. Y6 OB L1</p> <hr/> <p>Know that the heart is the organ that pumps blood around the body through blood vessels. Y6 OB L1</p> <hr/> <p>Understand that organs can also work together as a body 'system'. Y6 OB L1, L2</p> <hr/> <p>Know that together the heart, blood vessels and blood form the circulatory system. Y6 OB L2</p> <hr/> <p>Understand that blood picks up oxygen from the lungs and transports it through blood vessels to all of our organs. Y6 OB L2</p> <hr/> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Y6 OB L1, L2, L3, L6</p> <hr/> <p>Know that humans need water and food to survive. Y6 OB L2</p> <hr/> <p>Know that the substances in food that help us to grow and repair our bodies are termed 'nutrients'. Y6 OB L1, L2</p> <hr/> <p>Understand that it is the circulatory system that transports water and nutrients around our bodies. Y6 OB L1, L2</p> <hr/> <p>Describe the ways in which nutrients and water are transported within animals, including humans. Y6 OB L2, L3</p> <hr/> <p>Know that body systems respond to a person's physical needs, e.g. to run faster, to digest food. Y6 OB L3, L4, L5</p> <hr/> <p>Understand that some aspects of a person's lifestyle, e.g. lack of exercise, taking narcotics, will have an effect on the way their body functions. Y6 OB L4, L5, L6</p> <hr/> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Y6 OB L4, L5, L6</p>	<p>Know that geological time spans millions of years. Y6 EAI L1</p> <hr/> <p>Know that some living things that were on Earth millions of years ago, e.g. dinosaurs, are no longer inhabiting Earth. They are extinct. Y6 EAI L1</p> <hr/> <p>Understand that evolution is the process of change in living things over time. Y6 EAI L1, L2</p> <hr/> <p>Understand that some fossils are examples of living things that were once alive on Earth but are no longer living. Y6 EAI L1</p> <hr/> <p>Know that humans are a relatively recent species on Earth. Y6 EAI L1</p> <hr/> <p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Y6 EAI L1</p> <hr/> <p>Know that living things reproduce offspring similar to themselves. Y6 EAI L2</p> <hr/> <p>Understand that offspring will bear some similarities to each other, to their parents and to other living things of the same kind. Y6 EAI L2</p> <hr/> <p>Recognise that small inherited changes in physical characteristics, e.g. colour, size, shape of limbs etc. over time lead to variation in species. Y6 EAI L2</p> <hr/> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Y6 EAI L2, L3</p> <hr/> <p>Know that animals and plants exist and live in different environments. Y6 EAI L3</p> <hr/> <p>Know that not all animals or plants will survive to reproduce. Y6 EAI L3</p> <hr/> <p>Understand that variation in offspring over time can make animals and plants more or less able to survive in particular environments. Y6 EAI L3, L4, L5</p> <hr/> <p>Know that some adaptations to the environment in plants or animals can be advantageous if they keep the species alive for long enough to reproduce and pass on their features to a new generation. Y6 EAI L4, L5</p>	<p>Recognise common observable characteristics that can be used to group/classify living things. Y6 CLT L1</p> <hr/> <p>Know that germs and bacteria are living organisms called micro-organisms. Y6 CLT L2</p> <hr/> <p>Understand that micro-organisms form part of the classification system for living things. Y6 CLT L2</p> <hr/> <p>Identify the conditions needed to support the growth of micro-organisms. Y6 CLT L3</p> <hr/> <p>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. Y6 CLT L1, L2, L3, L6</p> <hr/> <p>Know that there is a scientific system for classifying living things. Y6 CLT L4</p> <hr/> <p>Identify the observable characteristics used to identify local plants. Y6 CLT L4, L5</p> <hr/> <p>Identify the observable characteristics to classify a specific species of plant, e.g. a buttercup. Y6 CLT L5</p> <hr/> <p>Identify the observable characteristics to classify a specific species of animal, e.g. an earthworm. Y6 CLT L6</p> <hr/> <p>Give reasons for classifying plants and animals based on specific characteristics. Y6 CLT L1, L4, L5, L6</p>

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			<p>Know that living things start from a common ancestor but have evolved to suit the environmental conditions. <i>Y6 EAI L4, L5</i></p> <hr/> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <i>Y6 EAI L4, L5, L6</i></p>	
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