# KS3 Biology – Living Things and their Environment.

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| Subject curriculum intent: | To develop in our students:<br>• An enjoyment of Science by providing relevant, interesting and challenging experiences and activities.<br>• Observational skills, by looking for patterns and contrasts.<br>• An inquiring mind and a logical approach to problem solving.<br>• The ability to draw conclusions from simple experiments and, where appropriate, to devise suitable experiments for further investigations.<br>• Communication skills in speaking and listening, written, diagrammatic and symbolic forms.<br>• Co-operation and a respect for others by being able to work as part of a team – the development of appropriate social skills.<br>• Confidence in their own abilities.<br>• A respect for the environment and a careful use of resources.<br>• An interest in the world about them and a greater understanding of it. |

| End of KS3 intent/outcome | End of KS4 intent/outcome | End of KS5 intent/outcome |
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| Students will build on their knowledge of science through the different areas – biology chemistry and physics. Students will 'work scientifically' to achieve the goals of each topic area they encounter. | Students will continue to develop their scientific knowledge through the different areas – biology, chemistry and physics. Students will 'work scientifically' to achieve the goals of each topic area they encounter. Students will be able to relate their scientific experiences to everyday life and have an understanding that science is all around them. | N/A |

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| Intent for this topic: | Students will learn that animals and plants have lots of different features. They will start to group animals in different ways and into their animal classes (birds, mammals, reptiles, amphibian and fish). Students will be able to build food chains and use food chains to build food webs. Students will learn about the plants and animals that can be found in different habitats and look at the different features. Students will also look at how plants and animals adapt to their habitats.<br><br>Students will 'work scientifically' to achieve these goals, learning the key features of scientific enquiry; observing over time, pattern seeking, identifying, classifying, investigating (fair tests) and researching. |
| Core vocabulary needed for this subject/topic: | **Subject:**<br>Biology, Chemistry, Physics<br>Observe, pattern, identifying, classifying, investigating, fair test, researching |

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| | **Topic:**<br>Animals, vertebrate, invertebrate, plants, habitat, features, physical features, food chain, food web, producer, consumer, predator, prey<br>Animal classes – mammals, birds, plants, reptiles, amphibians |
| Vocabulary pupils will have accessed in other topics or subject areas: | Animals, plants, environment, classify, research, food, change, similarities, differences |
| Key vocabulary taught within this topic: | Animals, vertebrate, invertebrate, plants, habitat, features, physical features, food chain, food web, producer, consumer, predator, prey<br>Animal classes – mammals, birds, plants, reptiles, amphibians |
| Big Questions | What do animals look like?<br>How are animals the same?<br>How are animals different?<br>What do animals eat?<br>How do animals live? |

**Prior knowledge: what pupils may already have studied**

| Key stage | Subject | Topic title | Term/year taught | Content/What might pupils already know? |
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| KS3 | Science | Why are plants important? | Autumn 1/Year 3 | Students will have looked at different plants and will be able to name key features of plants. |
| KS3 | Geography | Images of a country | Spring 2/Year 3 | Students may be aware of the different habitats from look at images from a different country e.g. deserts, rainforests. |
| KS3 | PSHE | Caring for the Environment | Autumn 2.Year 3 | Students will have learnt about the environment and how we can look after the environment. |

Links to other subjects: Grow it, Geography, PSHE

Equality, Diversity and Inclusion: Key Scientist – Carl Linnaeus (The man who named nature)

| | OU P Steps 5-6 | OU P Steps 7-8 | OU Step 1 | OU Step 2 | OU Step 3 |
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| **Subject specific knowledge** | Knows 2 features of familiar animals. E.g a bird has feathers and flies. | Knows 3 features of familiar animals. | Identifies a range of features of living things e.g. wings, claws, tusks | Knows the names of 3 common plants.<br><br>Use the correct vocabulary for the | Is aware that although plants and animals have the same "basic design" there are many |

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| | Identifies the differences between themselves and other people.<br><br>Knows the difference between a plant and a animal.<br><br>Names the different features of major groups using photographs and symbols<br><br>Sorts animals that live in hot places and cold places.<br><br>Identifies the sounds or movements that common, known animals make.<br><br>Understands that certain animals have features to help them survive. | Describes the differences between plants and animals.<br><br>Names the different features of major groups using photographs and key words.<br><br>Recognises that a photo of a plant or animal do not always look exactly like the real thing.<br><br>Identifies animals that live in hot places and those that live in cold places.<br><br>Understands that different animals have different features to help them survive.<br><br>Identifies when 2 habitats are different and can name a simple difference e.g. hot/cold, dry/wet | Knows the different animal classes – mammals, amphibians, birds, fish, reptiles<br><br>Identifies 3 types of plants and 3 types of animals found locally.<br><br>Identifies some obvious similarities in the features of plants and animals.<br><br>Understands that a food chain shows 'what eats what'.<br><br>Identifies the features of animals that live in hot places and those that live in cold places.<br><br>Name an animal that eats other animals.<br><br>Names an animal that is eaten by other animal<br><br>Describe simply an unusual environment e.g. desert or jungle.<br><br>Name some animals found in specific environment e.g. when shown picture of desert, can say what | features for an animal some of the time.<br><br>Knows the different animal classes – mammals, amphibians, birds, fish, reptiles<br><br>Can name the parts of a food chain e.g. producer, consumer, prey, predator<br><br>Explains that some animals hunt and some are hunted.<br><br>Explains that some animals have bones and some do not have bones.<br><br>Names animals that come out at night (nocturnal)<br><br>Identify two physical features in a habitat.<br><br>Suggest some plants and animals for a particular habitat<br><br>Identify some of the plants and animals in habitats.<br><br>Identify at least one plant and one animal | variations in the design.<br><br>Knows the correct vocabulary to describe any given animal.<br><br>Knows the different animal classes – mammals, amphibians, birds, fish, reptiles<br><br>Knows that a food web is made up of food chains<br><br>Can explain and understands the terms predator, prey, carnivore, herbivore and producer.<br><br>Explains the difference between a vertebrate and an invertebrate using clues/keywords.<br><br>Describes the features of animals that come out at night (nocturnal)<br><br>Understand the term 'Physical feature' and name a range of these in a known area.<br><br>Name animals and/or plants found in any habitat. |

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| | | | lives there without any other visual clues<br><br>Suggests where specific animals or plants might be found e.g. frog in pond, woodlice under log. | feature that helps it live in a particular place.<br><br>Suggest reasons as to why a particular plant or animal is found where it is. | Make sensible suggestions about why plants and animals are found in particular places. |
| **Subject specific skills** | Understands where to find a specific type of animal e.g. insect.<br><br>Demonstrate how an animal moves.<br><br>Labels a familiar feature on a common animal.<br><br>Describes the actions of a common animal<br><br>Groups animals into those that live on land and those that live in water.<br><br>Sorts pictures of animals into groups that share known features.<br><br>Match the simple body organ/feature to reason e.g. sharp teeth for eating, wings for flying. | Identifies similarities between animals.<br><br>Identifies differences between animals.<br><br>Sorts animals into 2 groups using a familiar feature<br><br>Starts to group animals into groups using obvious features e.g. feathers, fur, swims.<br><br>Builds simple food chain (3 animals) with staff help.<br><br>Identifies what eats what in known food chains<br><br>Demonstrates function of main body part.<br><br>Finds out some information from a book regarding animals or plants. | Sorts plants/animals according into 2 or more groups, whether they have or don't have a particular feature.<br><br>Identifies some obvious similarities in the features of plants and animals.<br><br>Identifies some obvious differences in the features of plants and animals.<br><br>Identifies a plant or animal using a very simple identification sheet.<br><br>Uses a 1 stage branching key to name animals.<br><br>Can group animals into mammals/birds/fish/reptiles/amphibians with some prompts. | Can identify some specimens from pictures.<br><br>Groups specimens into named groups e.g. birds, mini beasts, plants, vegetables<br><br>Uses a 2 stage branching key to name plants and animals.<br><br>Identifies a range of physical features of plants and animals.<br><br>Builds food chain (1 plant, 2 animals).<br><br>Names the predator and prey in a common food chain.<br><br>Identifies the plant (plant part) in a food chain.<br><br>Can classify animals into mammals/birds/fish/re | Identifies simple differences between insects, spiders and other mini beasts.<br><br>Uses a 3 stage branching key to name plants and animals.<br><br>Identifies vertebrates and invertebrates<br><br>Recognises features a plant or animal might use to protect itself.<br><br>Can independently construct a food chain with 3 stages.<br><br>Can classify animals into mammals/birds/fish/reptiles/amphibians using simple descriptions.<br><br>Draw a "physical features" map.<br><br>Research animals and name the features that |

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| | Matches particular feature of body e.g. striped leg to whole animal.<br><br>Assemble cut-out body parts to make complete animal. | Locates and names obvious body part e.g. beak, claw, paw.<br><br>Groups habitats according to simple criteria. | Starts to build simple food chain (3 animals).<br><br>Identifies what eats what in the food chain.<br><br>Group animals using a given criterion or classification key.<br><br>Identifies some actual examples of common plants and animals found locally using a simple identification key. | ptiles/amphibians independently.<br><br>Label a map of a known area with Physical features.<br><br>Identify and simply describe 2 habitats.<br><br>Group common animals into specific habitats.<br><br>Tell you simply why plants and animals live in particular habitats e.g. fish needs water.<br><br>Using examples identify the features that enable a plant and an animal to survive. | enable them to live I their specific habitat.<br><br>Record the plants and animals found particular habitats.<br><br>Measure some of the physical features – with data loggers or simple equipment.<br><br>Compare two habitats by recording physical features and plants/animals found there.<br><br>Predict accurately some of the plants and animals they would expect to find in a particular habitat. |
| **Suggested Activities** | • Look at different animals and their features.<br>• Make "What am I?" cards to get children to identify animal e.g. I have…<br>• Survey the school grounds/park and record what is found there - Two legs, two wings, a beak, feathers, webbed feet etc.<br>• Study two contrasting environments – look at the plants and animals found there.<br>• Give a series of clues to guess the plant or animal e.g. animal has smooth skin, lives in a pond and lives on land, jumps etc.<br>• Match a description to a particular plant or animal.<br>• Play 'the odd one out' – child picks 3 plant/animal pictures and others have to say why it is the odd one out.<br>• Discuss what would happen if something in a food chain died out for some reason.<br>• Use commercial keys to identify plants and animals.<br>• Let children construct simple branching keys – limit the number of specimens until confident with idea | | | | |

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| | • Identify plants and animals from different habitats but also record the features of where it was found. Link features to habitat<br>• Use pictures of plants and animals to devise food chains. Pupils could be labelled and act out different organisms in a food chain.<br>• Construct and label simple food chains.<br>• Construct simple food web using pictures and lengths of string.<br>• Discuss the interdependence of plants and animals in food chains and food webs. |
| **Possible Investigations/ Working Scientifically** | • Classify animals into their groups with obvious features – e.g. feathers, fur, fins<br>• Classify animals into their different animal classes – mammals, reptiles, birds, fish, amphibians<br>• Classify animals into vertebrates and invertebrates.<br>• Research the different animal classes and their different features.<br>• Research different habitats and the animals and plants that can be found there.<br>• Research how animals and plants adapt to their habitats.<br>• Look at the garden habitat and look at the plants and animals that can be found – investigate minibeasts. |
| **Personal development** | **Problem solving**<br>Investigations and matching exercises<br>**Communication skills**<br>Working as pairs in investigations, asking and answering questions<br>**Self-belief**<br>Learning new skills, practising them and demonstrating them.<br>**Self-management**<br>Working with new equipment<br>**Teamwork**<br>Working as groups to solve problems or find out new information |
| **Online resources**<br>Twinkl<br>CLEAPPS for risk assessments<br>BBC bitesize for video resources<br>Youtube<br>Resource folder on the school server<br>https://www.stem.org.uk/resources/elibrary/resource/34860/famous-scientists-fact-sheets | |
| **Evidencing Work**<br>**All work / evidence sheets need to be printed off (where appropriate levelled in accordance with the rubric), students need to self-assess and work needs to be put in student folders.** | |

RRS Articles:
This unit of work is linked to Articles of the UN Convention on the Rights of the Child.
Article 13 (freedom of expression)

Article 24 (health and health services)
Article 29 (goals of education)