Imagine, Believe, Achieve

Springdale First School

Year 2 / Science / Living things and their habitats

Children's prior learning in this area	Cultural Capital Opportunities	Key vocabulary and glossary
Rec Children know about similarities and differences in relation to …living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of …plants and animals and explain why some things occur, and talk about changes. **Yr 1** identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals identify and name a variety of common animals that are carnivores, herbivores and omnivores identify and name a variety of common wild and garden plants, including deciduous and evergreen trees	Trip to a wildlife habitat, e.g. Brownsea Island, Blashford Lakes Nature Reserve Visit from a beekeeper/mothkeeper to learn about how habitats are suited to their needs/how they survive in different seasons Outreach visit from Urban Heaths Partnership Visitors with animals – e.g. hedgehog, Giant African landsnails Out and about in school grounds experiencing the woodland and pond habitats in different seasons	Living / dead / never alive habitats / micro-habitats food chain shelter leaf litter seashore woodland ocean rainforest desert damp shade depend source suited needs conditions

Enquiry Question What makes something alive?	**Enquiry Question** Why do living things live in different habitats?	**Enquiry Question** Why do living things live in different habitats?
Concept Interpret the results – answer the question **Enquiry type:** Identifying, grouping, classifying	**Concept** Interpret the results – answer the question	**Concept** Present and report findings **Enquiry type:** Research using secondary sources
<u>I know how to explore and compare the differences between things that are living, dead, and things that have never been alive</u> **Learning point 1:** Children will learn that all things are either living, dead or have never been alive. **Learning point 2:** Living things are plants (including seeds) and animals. Living things all have certain processes (things that they do) that mean they are alive. Movement Respiration Sensitivity Growth Reproduction Excretion Nutrition **Make connections to prior learning – nutrition from Autumn term, looked at movement when investigating exercise and that we will be observing growth of the bulbs planted).** *Suggested activities: Draw some of this information out with questioning and providing challenge. E.g. If a child says, 'things that are alive move', challenge this with: 'robots and cars move – are they alive?'* (The children do not need to recall all 7 life processes with their proper names in Year 2 but they should be able to refer to some of the processes in their own way when explaining what makes something living. **Learning point 3:** Dead things include dead animals and plants that were once alive and parts of plants and animals that are no longer attached e.g. leaves and twigs, shells, fur, hair and feathers (This is a simplification, but appropriate for Year 2 children). **Learning point 4:** Objects made of rock, metal and plastic have never been alive (again ignoring that plastics are made of fossil fuels). An object made of wood (e.g. table) has never been alive in its current form but the material (wood) is dead. **Throughout these learning points, children should** use appropriate scientific language to communicate ideas (from Interim Teacher Assessment Framework) to compare living, once alive and never alive. They should show that they can classify things according to whether they are living, once alive or never alive. *Practise: Label 3 pictures with either living, dead or never alive.* *Apply: Explain why Sophie is incorrect about a car being alive because it moves.* *Deepen: Choose a picture from a choice of 3, identify whether it is living, dead or never alive and refer to life processes to explain.*	**<u>I know 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</u>** **Learning point 1:** A habitat is a natural place where specific plants and animals live. A habitat is not a home – it is the wider environment that the living thing is found in. **Learning point 2:** A habitat provides the basic things living things need – shelter, food and water. **Learning point 3:** Animals and plants live in a habitat to which they are suited, which means that animals have suitable features that help them move and find food and plants have suitable features that help them to grow well specific to that habitat. *Check: Cloze procedure / circle and explain against sticky knowledge.* *Practise: I do/we do: Identify why an animal, e.g. hare, is suited to its habitat considering how that habitat provides shelter, food and water. Multiple choice answers could scaffold the learning.* *Apply: You do: As above, but with a different animal, e.g. hedgehog. Multiple choice answers could scaffold the learning.* *Deepen: Discuss: Consider one of the animals discussed in the apply or practise. Why is this animal not suited to a different habitat, e.g. ocean or desert.*	**<u>I know how to identify and name a variety of plants and animals in their habitats</u>** **<u>I know 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</u>** Children will look at the five types of enquiry (using dual coding logos on working wall) and begin to understand that these are five different ways scientists find out answers to their questions. Children will recall that they did comparative and fair testing when investigating materials for a waterproof coat and pattern-seeking when they looked at the types of materials in the classroom compared to the types of materials in a bedroom. They will recall that they are observing over time as the observe the growth of the bulbs they planted. Children will consider today's enquiry question and understand that that if you cannot carry out an investigation you can research the answer. This means finding out the answer by reading information in books or on websites or by watching videos. *Suggested activities:* *As a class, children watch a video that teaches about animals being suited to different habitats and how the animals and plants depend on each other.* *Present what they found out on a scaffolded template.* *Example video :* How have different animals adapted to their habitats? - BBC Teach *Practise: Identify the habitat animals live in using word bank.* *Apply: Research and answer questions based on video.*

Enquiry Question What living things are found in the micro-habitats of our school grounds?	**Enquiry Question** How does seasonal change affect living things in a habitat?	**Enquiry Question** What is a food chain?
Concept observe closely, gather and record results **Enquiry type:** pattern-seeking	**Concept** present and report findings	**Concept** present and report findings
<u>I know how to identify and name a variety of plants and animals in their habitats, including microhabitats</u> **Learning point 1:** Within a habitat there are different micro-habitats. e.g. in a woodland – in the leaf litter, on the bark of trees, on the leaves. These micro-habitats have different conditions e.g. light or dark, damp or dry. These conditions suit the needs of different living things, providing so you will find different living things in these different micro-habitats. Give examples of how some micro-habitats provide food and shelter to different living things and how the plants and animals depend on each other. **Learning point 2:** Use simple identification sheets to identify plants and animals in the habitats of our school grounds: e.g. Flower bed, Leaf litter (Could use trowels to take a sample of leaf litter and soil from underneath and place in a tray to have a closer look), Bark of trees, under logs. Children will learn that using tally marks are a good way of recording data that you can count so that you remember what you found. *Practise: Have identification sheets printed and use them to identify the creature shown in a photo on the screen. Practise how to draw tally marks and counting tally marks.* *Apply: Survey school grounds for living things in some microhabitats and use tally marks to represent what they found.* *Deepen: Discuss: Why did we find lots of x in the leaf litter/bark/under logs? Why is that habitat suited to its needs?*	**<u>I know that the seasons affect the living things found in a habitat</u>** Seasonal change can affect living things in a habitat. Children should know that some birds migrate to warmer places when their habitat is cold. Children should understand that if they looked at the microhabitats in the Winter, they would not see as many living things. Children should understand that in Winter, minibeasts can either lie dormant, stay active in warm, sheltered places, or die off, leaving eggs or their juvenile state – e.g. caterpillars. *Some information (not sticky knowledge):* *Many insects lie dormant – the cold temperatures cause them to go into this state – it is like a pause button, a bit like hibernating.* *Many spiders will lay eggs in safe, dark spaces before they die when the Winter weather arrives. The eggs will hatch in Spring.* *Bees will stay in their hive over the Winter, clustering together to share body heat. They eat lots of honey over the Winter to keep up their body heat.* *Most wasps die off but a Queen wasp will hibernate in a warm place, perhaps burrowing underground, or going into a shed or attic.* *Butterflies in cold habitats will die off, leaving eggs or caterpillars. Some species will survive Winter in a cocoon.Monarch butterflies migrate from North America to Southern Carolina and Mexico.* *Practise: Match the living thing to what it does in the Winter.* *Apply: Explain why Winter can affect the living things in a habitat - word banks/sentence stems* *Deepen: Discuss: How have humans overcome the effects seasonal change has on their habitat?*	**<u>I know that the way that animals obtain their food from plants and other animals can be shown in a food chain</u>** All living things need energy to live. Living things get their energy from food. Plants make their own food with the help of sunlight, air and water. Animals and humans don't produce their own food, so they need to eat plants or other animals. Living things are all part of a food chain. A food chain shows how plants and animals depend on each other as their source of food. Arrows show the direction in which energy flows through the food chain from what is eaten to the 'eater'. Example video: What is a food chain? - BBC Teach *Check: group task – sort the images according to whether the living thing makes its own food or gets food by eating.* *Practise: Draw the arrows on a pre-given food chain to show the direction in which energy is being transferred. Complete a sentence: The arrows show….* *Apply: Complete food chains – cut and stick.* *Deepen: Discuss: Show a food chain – Point to one of the living things on the food chain. What would happen if these all got ill and died out? How would this affect the food chain/ Get across that all the parts fo the chain depend on each other.*

Enquiry Question Which conditions do woodlice like to live in?	**Enquiry Question** Which plants live in which habitat?
Concept plan, set up and perform an enquiry; predictions; interpret results -answer the question **Enquiry type:** pattern-seeking	**Concept** interpret results – answer the question
WALT: 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 living things, and how they depend on each other Animals and plants live in a habitat to which they are suited, which means that animals have suitable features that help them move and find food and plants have suitable es that help them to grow well. The habitat provides the basic needs of the animals and plants – shelter, foo vater. Pose enquiry question to children and tell them the four types of habitats they can predict the woodlice would prefer – dark and damp, dark and dry, bright and damp or bright and dry. Encourage children to refer to their experiences of where they found woodlice in the school grounds when making predictions. With support and modelling, encourage children to suggest different ways in which we could investigate this. Lead to: four 'microhabitats' in a tray/shoe box – e.g. dark and damp black paper, dark and dry black paper, bright and damp white paper and bright and dry white paper. Place woodlice inside and leave for half an hour. Observe how many woodlice were in each habitat and encourage children to interpret this to answer the question – which conditions do woodlice like to live in?	**WALT: identify and name a variety of plants in their habitats** **Learning point** like animals, plants have habitats. They are suited to the place where they live. **Learning point 2:** A cactus is found in a desert habitat. Because deserts are hot and dry, their roots are shallow to collect any small amount of water in the ground. Their stems can store this water for a long time. The spikes of a cactus are the leaves and they protect it from being eaten. Marram grass is found in a seaside habitat. A seaside habitat is harsh with no shade, bright sunshine, strong winds and salt water. It has long root systems to cope with the winds and glossy, rolled up leaves to prevent it from drying out. Sea grass lives under the sea. It only grows in shallow water as it needs lots of sunlight. They can cope with salt water. They have flexible blades that bend easily in the constant current of water. Bluebells are found in woodlands but also gardens. They have roots that go deep and pull the bulb deeper each year to protect it from Winter frost. Bluebells are suited to shade as they often grow under trees. *Suggested task: Name plants and match to habitats. Explain how they are suited to their habitats.*