

## Key Knowledge:

### Progression of Learning – Prior Learning:

- To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.

### What are the differences between living and non-living things?

- To know what a living thing is alive.
- To know that a living thing is called an organism.
- To know that a dead thing has been alive.
- To know that a non-living thing has never been alive.

### What is a habitat?

- To know that a habitat is a place that an animal or plant lives. It provides the animal with food, water and shelter.
- To know that living things live in environments to which they are particularly suited.
- To know that almost every place on Earth—from the hottest desert to the coldest ice pack—is a habitat for some kinds of animals and plants.
- To know that most habitats include a community of animals and plants along with water, oxygen, soil or sand, and rocks.
- To know the names of some specific habitats and what lives there.

### What do different habitats look like?

- To know the names of some specific habitats and what lives there, for example: forest (for example: oak trees, squirrels, foxes, badgers, snails, mice), meadow and plains (for example: wildflowers, grasses, prairie dogs), underground (for example: fungi, moles, worms), desert (for example: cacti, lizards, scorpions), water (for example: fish, oysters, starfish).

### What do habitats look like in the local area? What is a microhabitat?

- To know that a microhabitat is a very small, specific habitat for animals and plants, for example a pond or a rotting log. It differs to the wider environment around it.

### What do animals eat?

- To know that plants make their own food, but animals obtain food from eating plants or other living things


### What are food chains and what do they show?

- To know that a food chain is a way of picturing the relationships between living things. It is a diagram that shows us how animals are linked by what they eat, for example grass -> rabbit -> fox
- To know that most food chains start with organisms that make their own food, such as plants. Scientists call them producers

### Progression of Learning – Future Learning:

- To recognise that environments can change and that this can sometimes pose dangers to living things
- To construct and interpret a variety of food chains, identifying producers, predators and prey

## Lesson Sequence:

<p>Core Focus Text:</p> 	<p><b>Lesson 1A: Pre-Learning: Explore, Engage, Extend.</b> Discover what children know... and 'what children would like to know...' Completion of pre-learning Vital Vocabulary.</p>	<p><b>Lesson 1B: The Bigger Scientific Picture</b> Explore the name of the unit, considering the questions: 'why are we studying this unit?' and 'what are the big scientific ideas?' Explore the disciplines of Chemistry, Physics and Biology making extensive links to all areas of prior learning through retrieval opportunities, mind map creation, research and discussion.</p>
<p><b>What are the differences between living and non-living things?</b></p> <ul style="list-style-type: none"> <li>- Complete unit pre-assessment questions and glossary.</li> <li>- Teaching (Explain the different key terminology and allow children to explore different objects around them).</li> <li>- Vocabulary (living, non-living, alive).</li> <li>- Activity (Sort mixture of items into a table of living, non-living and dead objects. Challenge: Explainify question).</li> <li>- Scientific Enquiry (Identifying, classifying and grouping).</li> <li>- Working Scientifically (Sc2/1.4: identifying and classifying).</li> </ul>		
<p><b>What is a habitat?</b></p> <ul style="list-style-type: none"> <li>- Retrieval Activity (Applied example of knowledge from last lesson. Is a balloon moving?).</li> <li>- Teaching (Show video explaining what a habitat is. Ask children can they name as many as possible).</li> <li>- Vocabulary (habitat, inhabitant).</li> <li>- Activity (Children to justify whether the picture is a habitat or not and then to label the features of a number of habitats).</li> <li>- Scientific Enquiry (Identifying, classifying and grouping).</li> <li>- Working Scientifically (Sc2/1.1: asking simple questions and recognising that they can be answered in different ways).</li> </ul>		
<p><b>What do different habitats look like?</b></p> <ul style="list-style-type: none"> <li>- Retrieval Activity (vocabulary game to test knowledge of vocabulary from last lesson).</li> <li>- Teaching (Revisit previous lessons Explain how they are different types of habitats, explaining their features).</li> <li>- Vocabulary (habitat, environment).</li> <li>- Activity (Drawing different habitats and classifying animals that live there through fact files in addition to research themselves).</li> <li>- Scientific Enquiry (researching using secondary sources).</li> <li>- Working Scientifically (Sc2/1.4: identifying and classifying).</li> </ul>		
<p><b>What do habitats look like in the local area? What is a microhabitat?</b></p> <ul style="list-style-type: none"> <li>- Retrieval Activity (sorting and matching activities from knowledge from lesson 1-3)</li> <li>- Teaching (Explain key concept of something that is 'micro' is on a small-scale and is different to the wider external environment).</li> <li>- Vocabulary (microhabitat).</li> <li>- Activity (Conduct an investigation into exploring some of the microhabitats on the school field. Labelling, sketching and explaining the differences).</li> <li>- Scientific Enquiry (Identifying, classifying and grouping).</li> <li>- Working Scientifically (Sc2/1.2: observing closely, using simple equipment). (Sc2/1.4: identifying and classifying).</li> </ul>		
<p><b>What do animals eat?</b></p> <ul style="list-style-type: none"> <li>- Retrieval Activity (brain dump assessment about habitat knowledge).</li> <li>- Teaching (Explanation that animals get food from eating something. There are different types of animals, explaining the terminology of carnivores, omnivores and herbivores as 'Vital Vocabulary').</li> <li>- Vocabulary (herbivore, omnivore, carnivore).</li> <li>- Activity (completion of Venn Diagram as a classification activity).</li> <li>- Scientific Enquiry (Identifying, classifying and grouping).</li> <li>- Working Scientifically (Sc2/1.4: identifying and classifying).</li> </ul>		
<p><b>What are food chains and what do they show?</b></p> <ul style="list-style-type: none"> <li>- Retrieval Activity (Recap last lesson and the different things that animals can eat. Play sorting game).</li> <li>- Teaching (Revisit key terminology from last lesson Explain through a physical example that a food chain is a way of visualising what eats what).</li> <li>- Vocabulary (food chain, producer, consumer).</li> <li>- Activity (Children to draw food chains, that are labelled from their own research).</li> <li>- Scientific Enquiry (researching using secondary sources).</li> <li>- Working Scientifically (Sc2/1.5: using their observations and ideas to suggest answers to questions).</li> </ul>		
<p><b>Exit Task:</b> Mini assessment correcting the incorrect food chain.</p>		
<p><b>Common Misconceptions to Consider:</b></p> <ul style="list-style-type: none"> <li>- <b>Non-living means dead</b> - Non-living means that a thing has never been alive.</li> <li>- <b>Deserts are always hot and covered in sand</b> - A desert is an expanse of waterless land with little or no vegetation. It can be covered in sand, or it can be a polar region.</li> <li>- <b>An animal high on the food chain is a predator on all the organisms below it</b> - An animal on the food chain is only a predator on the organism directly below it.</li> <li>- <b>Eggs and seeds are non-living</b> - Both are living things.</li> <li>- <b>A nest is a habitat</b> - An animal's home and its habitat are different. A home provides shelter, but a habitat provides food, water and space to survive in.</li> <li>- <b>One species lives in one habitat</b> - Some species exist in many different habitats. Deer, for example, can be found in cold, high altitude forests, as well as hot, low-altitude canyons. One bird will live in different habitats if it migrates.</li> </ul>		

## Year 2 Science - Living Things and Their Habitats.

### Our Rainbow Promises

- Encourage **R**esilience and perseverance
- Develop **A**rticulate learners
- I**nfluence aspirations
- N**urture curiosity
- Instil **B**ritish and Christian Values
- Provide **O**pportunities to build upon knowledge and skills
- Promote **W**ellbeing and Health

### Scientific Enquiry:

*Observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (Controlled Investigations); researching using secondary sources.*

*Sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (e.g. grass, cow, human). They could describe the conditions in different habitats and micro-habitats (under log, on stone path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.*

### Local and Cross-Curricular Links

*Visit to a local habitat to look at micro-habitats. Link to next half-term science topic. English Poetry Link - Hurt No Living Things by Christina Rossetti.*

### Think like a Scientist by:

*Sorting/ grouping / comparing / classifying / identifying, researching, modelling, recording, questioning, planning including use of equipment and measurement, communicating, recording, concluding, collaborating.*

### National Curriculum Coverage

- *explore and compare the differences between things that are living, dead, and things that have never been alive*
- *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*
- *identify and name a variety of plants and animals in their habitats, including microhabitats*
- *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.*

### Transferrable Knowledge:

**Biology** (study of living things. *Bios* is Greek for life).

B1: Living things are special collections of matter that make copies of themselves, use energy and grow.

B3: The different kinds of life, animals, plants and microorganisms, have evolved over millions of generations into different forms in order to survive in the environments in which they live.

### Vital Vocabulary

- Alive
- Environment
- Dead
- Food
- Food chain
- Habitat
- Inhabitant
- Living
- Microhabitat
- Organism
- Producer
- Shelter

### Idioms:

*Like a fish out of water.*

R	Five strands of scientific enquiry, with child-led investigations.
A	Vital vocabulary, oracy opportunities including P4C and speak its, exit task and use of academic keystone words.
I	Visits from STEM Ambassadors. Opportunity to become Creation Champions. Study of key scientists.
N	Subject WOW. Quest approach to teaching. Five strands of scientific enquiry. Opportunities for wider scientific reading.
B	Focus on <b>creation</b> and <b>endurance</b> as our core Scientific Christian Values. <b>Mutual respect</b> for the ideas of other people as our core British Christian Values.
O	Knowledge and skills progressively sequenced; see planning overleaf.
W	Focus on health and wellbeing woven throughout the Curriculum, linked to Parish Spirit Curriculum. Appreciation of the natural world and sense of awe and wonder.