The Cathedral School Of St Peter and St John R.C Primary — Environment - Living Things and Their Habitats

Year Two – Environment - Living Things and Their Habitats

National Curriculum Objectives:

- Explore and compare the difference 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 micro habitats.
- Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name the different sources of food.

Non statutory: Pupils should be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. They should raise and answer questions that help them to become familiar with the life processes that are common to all living things. Pupils should be introduced to the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'micro-habitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). They should raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other, for example, plants serving as a source of food and shelter for animals. Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in woodland, in the ocean, in the rainforest. Pupils might work scientifically by: 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 stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.

Inspiring science key ideas:

- 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 micro-habitats.
- 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.

Working scientifically

- *Sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts.*
- *Describing how they decided where to place things.*
- *Exploring questions such as: 'Is a flame alive? Is a deciduous tree dead in winter?*
- *Talking about ways of answering their questions.*
- *Constructing a simple food chain that includes humans (e.g. grass, cow, human).*
- *Describing the conditions in different habitats and micro-habitats (under log, on stony path, under bushes).*
- *Finding out how the conditions affect the number and type(s) of plants and animals that live there.*

Prior learning

In Early Years:

- Comments and questions about the place they live or the natural world.
- Shows care and concern for living things and the environment.
- Can talk about things they have observed such as plants and animals.
- Notices features of objects in their environment.
- Comments and asks questions about their familiar world.

Year One:

- **Environment – Living things and their habitats is not taught as a Unit in Year One, however in the Plants Unit children will identify and name a variety of common wild and garden plants, and describe the basic structure of a variety of common flowering plants, including trees.**
- **In the Animals Including Humans Unit pupils will identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals and identify and name a variety of common animals that are carnivores.**

Key Learning – What the pupils need to know

'***Animal, Including Humans – Animal survival and growth' can also be linked to this unit.***
Opportunities to learn about the life cycles of different animals (besides humans) can either be taught alongside this unit OR alongside human life cycles in the Y2 'Health - Animals, Including Humans – Human Health and Growth' unit.

See curriculum overview for sequence of learning

- Different kinds of plants and animals live in different kinds of places.
- There are different kinds of habitat which need to be cared for.
- Habitats provide the preferred conditions for the animals/plants that live there (compare local habitats and less familiar examples).

All animals get their nutrients by eating. Some animals hunt and eat other animals (predators) and some animals are hunted and eaten by other animals (prey). Animals that eat only other animals are called carnivores. Animals that only eat plants are called herbivores, and animals that eat both animals and plants are called omnivores

All animals are adapted to eat and survive (they are adapted to survive as predators and prey). Animals have adapted many different ways to survive as predators or prey. Plants are also adapted to survive; they have adapted to get the water and light they need and avoid being eaten or dying when chewed.

The changing seasons have a dramatic effect on plants, which has an impact on the animals that feed on them. Animals have adapted ways of surviving when the seasons change and food become scarce including hibernating, storing food and migrating.

Children should raise and explore questions that demand the identification of creatures and plants in their local environment and how their populations change through the seasons.

Vocabulary

Animals, plants, habitat/micro-habitat, living/dead/never been alive, suited to, survive, basic needs, food chain, seashore, ocean, woodland, rainforest

Expressions to describe location e.g. within, under, next

Comparative phrases: smaller than, larger than, longer than, shorter than, more…, long, longer, longest, small, smaller, smallest, similar to, different from

Expressions making generalisations e.g. 'most have...'

In Year Three: Environment – Living things and their habitats is not taught as a Unit , however in the Plants Unit children will explore the part that flowers play in the life cycle of flowering plants.
In Year Four: Recognise that living things can be grouped in a variety of ways, explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment, recognise that environments can change and that this can sometimes pose danger to living things.

The Cathedral School Of St Peter and St John R.C Primary **Environment - Living Things and Their Habitats**

Year Four – Environment - Living Things and Their Habitats

National Curriculum Objectives:

- Recognise that living things can be grouped in a variety of ways.
- Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.
- Recognise that environments can change and that this can sometimes pose danger to living things.

Non Statutory: Pupils should use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat. They should identify how the habitat changes throughout the year. Pupils should explore possible ways of grouping a wide selection of living things that include animals and flowering plants and non-flowering plants. Pupils could begin to put vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals; and invertebrates into snails and slugs, worms, spiders, and insects. Note: Plants can be grouped into categories such as flowering plants (including grasses) and non-flowering plants, such as ferns and mosses. Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation. Pupils might work scientifically by: using and making simple guides or keys to explore and identify local plants and animals; making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.

Inspiring science key ideas:

- **Recognise that living things can be grouped in a variety of ways**
- **Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment**
- **Construct and interpret a variety of food chains, identifying producers, predators and prey (this key idea can also be found in 'Animals – Teeth, eating and digestion' Unit)**
- **Recognise that environments can change and that this can sometimes pose dangers to living things.**

Working scientifically

- *Using and making simple guides or keys [sorting, grouping, comparing, classifying] to explore and identify local plants and animals.*
- *Making a guide [sorting, grouping, comparing, classifying] to local living things.*
- *Raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.*

Prior learning	Key Learning – What the pupils need to know		Vocabulary
Year Two: • 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 micro-habitats. • 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. **Year Three:** **In Year Three: Environment – Living things and their habitats is not taught as a Unit , however in the Plants Unit children will explore the part that flowers play in the life cycle of flowering plants.**	*'Year Four - **Animals – Teeth, eating and digestion' can also be linked to this unit.*** - ***Construct and interpret a variety of food chains, identifying producers, predators and prey*** **See curriculum overview for sequence of learning** • In any habitat there are food chains and webs where nutrients are passed from one organism to another when it is eaten. If the population of one organism in the chain or web is affected it has a knock on effect to all the others. • Use and make identification keys for plants and animals. Teachers should be aware that classification keys are also covered in the **Year 6- Environment - Living things and their Habitats – Classification unit.** •	• **Classification in Year 4 -** pupils should: • Use and construct classification keys to group and identify members from a small group of living things. • Pupils should explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. • **Classification in Year 6 -** pupils will: • Give reasons for classifying plants and animals based on specific characteristics. • Using classification systems and keys to identify some animals and plants in the immediate environment. Researching unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.	Words related to life processes e.g. nutrition, habitats and feeding Relationships e.g. habitat, condition, organism, predator, prey, producer, consumer, food chain, key, classify Words which have a different meaning in other contexts e.g. producer, consumer, key, condition Vertebrates and invertebrates, insects, minibeasts, mammals, reptiles, fish, birds, amphibians **(these animal groups may be discussed here but the main focus of this key learning should be introduced in LKS2 'Animals' unit)**

In Year Five:

- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- Describe the life process of reproduction in some plants and animals.

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Year Five – Environment - Living Things and Their Habitats – Observing Life Cycles

National Curriculum Objectives:

- Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
- Describe the life process of reproduction in some plants and animals.

Non statutory: Pupils should study and raise questions about their local environment throughout the year. They should observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals. Pupils might work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. They might observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow

Inspiring science key ideas:

- **Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.**
- **Describe the life process of reproduction in some plants and animals.**

Working scientifically

- *Observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times).*
- *Asking pertinent questions and suggesting reasons for similarities & differences.*
- *They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs.*
- *Observe changes in an animal over a period of time (for example, by hatching and rearing chicks).*
- *Comparing how different animals reproduce and grow.*

Prior learning	Key Learning – What the pupils need to know	Vocabulary
In Year Four: • Recognise that living things can be grouped in a variety of ways • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • Construct and interpret a variety of food chains, identifying producers, predators and prey. • Recognise that environments can change and that this can sometimes pose dangers to living things.	○ How animals and plants change over time. ○ Comparing animal and plant life cycles with human life cycles. ○ The main aspects of life cycles to record/report on are; birth/germination, development/growth/metamorphosis and reproduction. ○ Opportunities to observe real life cycles in action need to be planned for throughout the year and could include; Animals: chicks, caterpillars/butterflies, frogs, birds, etc. Plants: trees, bulbs, flowering plants (weeds, bedding plants, meadow crops), vegetable crops (strawberry and potatoes would be ideal crops to include as they can reproduce and form new plants by asexual reproduction) Plants produce pollen from the stamen (male part of a plant) which is transferred to the stigma and then the ovary (female parts of the plant). ▫ Fertilisation occurs in the ovary of the flower. ▫ Seeds are formed as a result of fertilisation. **It is important to note that pupils will have been introduced to pollination and seed dispersal in the Year Three – plants unit.**	Mammals, amphibians, reptiles and plants Live young/eggs, gestation/incubation period, grow, metamorphosis, internal/external sexual reproduction, parental care/no parental care Flowering and non-flowering plants, classifying, classification Reproduction/reproduce, fertilisation/fertilise, germination/germinate, pollination/pollinate, Stamen, style, stigma, sepal, petal, ovary, pollen, Adapted, Flowering and non-flowering plants Similarities and differences Observe over time

In Year Six

- Classify living things into broad groups according to observable characteristics and based on similarities and differences. • Give reasons for classifying plants and animals based on specific characteristics.
- Know how animals and plants are adapted to suit their environment.
- Know about reproduction and offspring (recognising offspring normally vary and are not identical to their parents).
- Know the ways in which nutrients and water are transported in animals, including humans

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The Cathedral School Of St Peter and St John R.C Primary **Environment - Living Things and Their Habitats**

Year Six – Environment - Living Things and Their Habitats – Classification

National Curriculum Objectives:

- Classify living things into broad groups according to observable characteristics and based on similarities and differences.
- Give reasons for classifying plants and animals based on specific characteristics.

Non statutory: Pupils should build on their learning about grouping living things in year 4 by looking at the classification system in more detail. They should be introduced to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They should discuss reasons why living things are placed in one group and not another. Pupils might find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification. Pupils might work scientifically by: using classification systems and keys to identify some animals and plants in the immediate environment. They could research unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.

Inspiring science key ideas:

- Classify living things into broad groups according to observable characteristics and based on similarities and differences.
- Give reasons for classifying plants and animals based on specific characteristics.
- Know how animals and plants are adapted to suit their environment.
- Know about reproduction and offspring (recognising offspring normally vary and are not identical to their parents).
- Know the ways in which nutrients and water are transported in animals, including humans

Working scientifically

- *Using classification systems and keys to identify some animals and plants in the immediate environment.*
  - *Researching unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.*

Prior learning	**Key Learning – What the pupils need to know**	**Vocabulary**
In Year Five: • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Describe the life process of reproduction in some plants and animals. • **Teachers should be aware that classification keys are also covered in the Year 4- Environment - Living things and their Habitats Unit in order to build on prior learning and not recover.**	▫ Living things can be grouped into micro-organisms, plants and animals. ▫ Children will learn about why we classify species and the key characteristics of mammals, birds, reptiles, amphibians, fish and insects. ▫ Compare the similarities and differences between species to help classify them into different animal groups ▫ Use and create identification keys **Classification in Year 6 -** pupils will: • Give reasons for classifying plants and animals based on specific characteristics. • Using classification systems and keys to identify some animals and plants in the immediate environment. • Researching unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.	Sort, group, identify, classify, environment, suited, classification system, key, habitat

In KS3: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335174/SECONDARY_national_curriculum_-_Science_220714.pdf

The Cathedral School Of St Peter and St John R.C Primary **Environment - Living Things and Their Habitats**

Year Six – Environment - Living Things and Their Habitats – Evolution and Inheritance

National Curriculum Objectives:

- Know about evolution and can explain what it is.
- Know how fossils can be used to find out about the past.
- Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
- Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.

Non Statutory: **Building on what they learned about fossils in the topic on rocks in year 3**, pupils should find out more about how living things on earth have changed over time. They should be introduced to the idea that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles. They should also appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer, or the development of insulating fur on the arctic fox. Pupils might find out about the work of palaeontologists such as **Mary Anning (Linked with Year Three topic children have a brief understanding of her life story)** and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.
Note: At this stage, pupils are not expected to understand how genes and chromosomes work

Inspiring science key ideas:

- **Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.**
- **Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.**
  Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Working scientifically

- *Observing and raising questions about local animals and how they are adapted to the environment;*
- *Comparing how some living things are adapted to survive in extreme conditions, for example cactuses, penguins & camels.*
- *Analysing the advantages and disadvantages of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.*

Prior learning	**Key Learning – What the pupils need to know**	**Vocabulary**
Teachers should be aware that in Year Three through the Material Properties – Rocks – Unit pupils have: ▪ **Compared and group together different kinds of rocks on the basis of their appearance and simple physical properties.** ▪ **Described in simple terms how fossils are formed when things that have lived are trapped within rock.** ▪ **Recognise that soils are made from rocks and organic matter.** **In order to build on learning and not recover.** In Year Five: • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Describe the life process of reproduction in some plants and animals. •	▫ **Adaptation:** Animals and plants are adapted to live in a certain habitat and these adaptations aid their *survival*. ▫ **Natural Selection:** Well adapted species are able to *survive* within their habitat and this leads to 'survival of the fittest' or natural selection. Changes in a species/population happen due to this natural selection. ▫ **Reproduction:** Individuals that survive long enough are able to breed and pass on their traits to their offspring (**Inheritance**). ▫ **Evolution:** Evolution can be described as changes in a population/species over time. ▫ **Examples of Changes to a Species:** find out more about either: ▫ **Endangered Species** - survival under threat OR ▫ **Selective Breeding**- e.g. breeding new varieties of dogs OR ▫ **Human Evolution** - looking at how, for example, the human skeleton/skull has changed over time.	Evolution, change over time, species, population, features, trait, inherited, reproduce, offspring, variation, mutation, survive/survival/survival of the fittest, adaptation Consumer, producer, predator, prey, food chain, consumer, producer, key, suited

In KS3: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335174/SECONDARY_national_curriculum_-_Science_220714.pdf