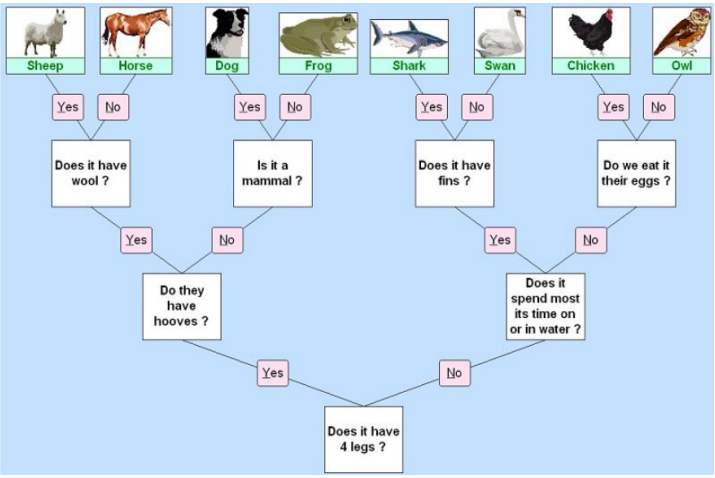
Huntingtree Primary School - Science Unit Organiser

Science Topic:	Living Things and Their habitats		Year 4		Autumn 2

What? (Key Vocabulary)

Spelling	Definition/Sentence
Gills	Slits on the side of a fish to help it breathe
Fins	Part of a fish that helps it move and balance
Scales	Thin plates protecting the skin of fish or reptiles
Lungs	Spongy bags in the chest used when breathing
Body Temperature	How hot or cold the inside of an animals body is
Section	A part of something
Deciduous	A tree that loses its leaves in Autumn and grows new ones in Spring
Coniferous (Evergreen)	A plant or tree that keeps its leaves all year
Algae	A small plant that is found in water (It has no stems, roots or leaves)

Diagrams and Symbols



Recommended Experiments

A minimum of two experiments should take place during this unit of work with one final written outcome linked to the scientific enquiry skills and approaches used.

	Identifying and naming a variety of living things in the local (school) and wider environment
	Exploring and using classification keys to help group, identify and name a variety of living things in their local and wider environment
	Designing own keys and branch diagrams to identify animals and plants
	Creating an online database of animals and plants on the school site (invite other users of the school grounds to update with sightings)

What? (Key Knowledge)

Grouping living things

Animals can be put into one of two groups	Vertebrates or invertebrates

Vertebrates

Vertebrates	Are animals with a backbone
There are 5 ways Vertebrates can be grouped	Fish, amphibians, reptiles, birds and mammals
How to spot a Fish	• Breathes with gills/lays eggs in water/has fins and scales/its body temperature changes
How to spot an Amphibian	• Born with gills then develops lungs/lays eggs in water/damp skin/body temperature changes
How to spot a Reptile	• Breathes with lungs/lays eggs on land/dry scaly skin/body temperature changes
How to spot a Bird	• Breathes with lungs/lays eggs with hard shells/has feathers/steady body temperature
How to spot a Mammal	• Breathes with lungs/babies are born live/ body hair or fur/steady body temperature/feeds babies milk

Invertebrates

Invertebrates	Invertebrates are animals with no backbones
There are 3 ways Invertebrates can be grouped	• Insects • Arachnids • Molluscs
How to spot an Insect	• 3 body sections/6 legs
How to spot an Arachnid	• 2 body sections/8 legs
How to spot a Mollusc	• Slimy foot/often have a shell

Plant Groups

Plants can be put into one of two groups	Flowering plants or non-flowering plants

Flowering Plants

Flowering plants are made of four groups	• Grasses/cereals/garden shrubs/deciduous trees (lose their leaves)

Non-Flowering Plants

Non-Flowering plants are made of three groups	• Algae/coniferous (evergreen) trees/ferns

Changing Habitats

What is a habitat?	Where a plant or animals lives
How can habitats change?	The seasons can change habitats with the weather and plant life in the habitat changing. Humans can change habitats, for example by dropping litter or chopping down trees.

Classifying Animals and Plants

What is classifying?	Grouping things that are similar
How can we group?	We can create branched diagrams to help us (see diagram)

Builds on: learning in Year 2 - Summer - Unit: Living Things and Their Habitats	Learning links	**Leads to:** learning in Year 5 - Autumn 2 - Unit: Living Things and Their Habitats

Huntingtree Primary School - Science Unit Organiser

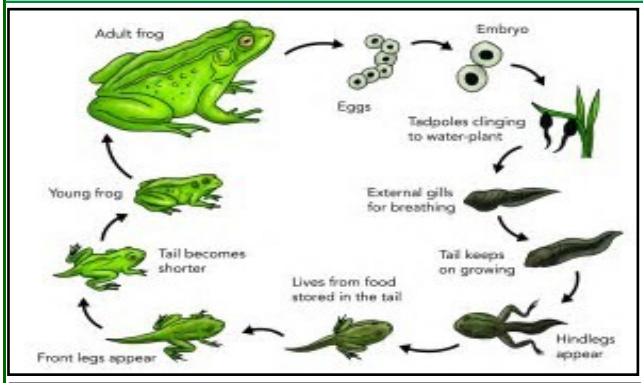
Science Topic:	Living Things and Their habitats		Year 5		Autumn 2

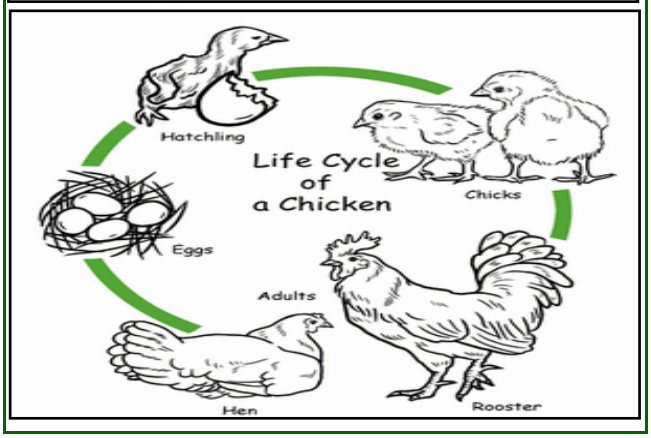
What? (Key Vocabulary)

Spelling	Definition/Sentence
Transformation	Changing in very clear ways
Knighted	To be recognised as a very important person by the Queen
Chimpanzee	A small African monkey
BAFTA	A British Academy of Film and Television Arts award

Diagrams and Symbols

Detailed Life Cycle of an Amphibian (Frog)





Recommended Experiments

A minimum of two experiments should take place during this unit of work with one final written outcome linked to the scientific enquiry skills and approaches used.

	Investigating the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
	Studying live chicks (in school) and watching them grow.
	Investigation into growing new plants from different parts of a parent plant (e.g. seeds, stem, root cuttings etc.)
???	Comparing life cycles with the most and fewest parts and comparing them to their average life span

What? (Key Knowledge)

Life Cycles

Life Cycle	A life cycle shows how things are born, how they grow and how they reproduce

Life Cycles of a mammal, insect, bird and an amphibian

Life cycle of a mammal	Live young born > grow from babies to adults > reproduce > live young born
Life cycle of an insect	Egg > growth to adult or transformation to adult > reproduce > egg
Life cycle of a bird	Egg > growth to adult > reproduce > egg
Life cycle of an amphibian	Egg in water > growth to adult >reproduce > eggs in water

Reproduction

What is reproduction?	• Living things creating other living things • Animals have babies • Plants have seeds which turn into new plants

Reproduction in plants

Sexual reproduction (Two parents)	When the pollen from one flower joins the egg of the new flower and a seed or many seeds are formed.
Asexual reproduction (One parent)	This is when a small part of a plant breaks off and it starts to grow until it is the same size as the plant it came from and this is repeated (flowers are not needed).

Examples of plant reproduction

Sexual	• Apple tree
Asexual	• The spider plant

Reproduction in animals

Usually sexual	Reproduction in animals is most commonly sexual involving two parents.

Examples of animal reproduction

Sexual	• Lion
Asexual	• Starfish

Who? (Scientists we need to know about)

5 facts about David Attenborough 	• Born on 8th May 1926 • British • Famous wildlife film maker • Knighted in 1985 • He is the only person to have won BAFTAs for programmes in each of black and white, colour, HD, and 3D
5 facts about Jane Goodall 	• Born on 3rd April 1934 • British • Considered to be the world's foremost expert on chimpanzees • Has studied chimpanzees for 45 years in Gombe Stream National Park which is located in Tanzania • Goodall is the author of a number of books that have earned her tremendous fame globally

Builds on: learning in Year 4 - Autumn 2 - Unit: Living Things and Their Habitats	Learning links	**Leads to:** learning in Year 6 - Autumn 2 - Unit: Living Things and Their Habitats

Huntingtree Primary School - Science Unit Organiser

Science Topic:	Living Things and Their Habitats		Year 6		Autumn 2

What? (Key Vocabulary)

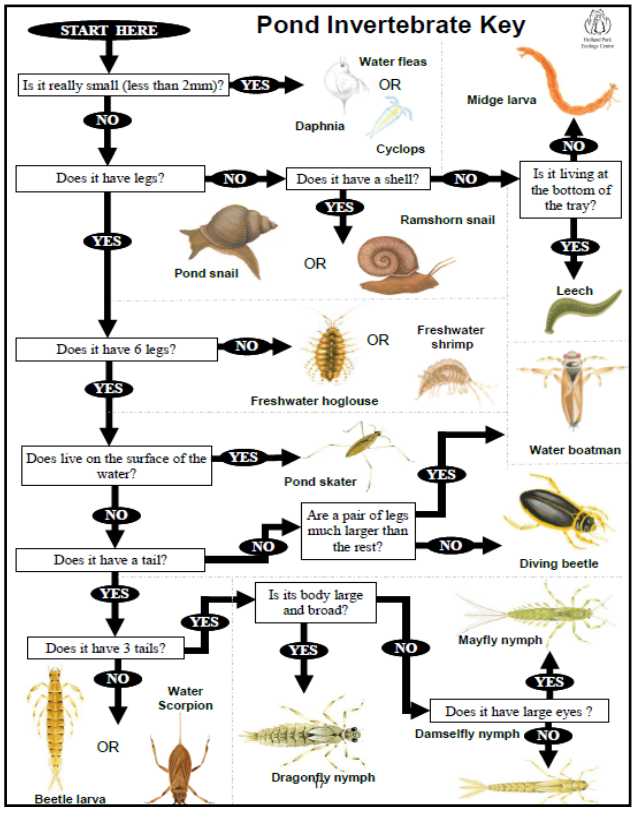
Spelling	Definition/Sentence
Taxonomy	The part of science focused on classification
Classification	Grouping something using its features
Distinguish	Recognise a difference
Microorganism	A microscopic organism

Who? (Scientists we need to know about)

3 facts about Carl Linnaeus

- Born in Sweden on 23rd May 1707
- A leading light in the field of Taxonomy
- Famous for developing the first system to classify animals effectively

Diagrams and Symbols



Recommended Experiments

A minimum of two experiments should take place during this unit of work with one final written outcome linked to the scientific enquiry skills and approaches used.

	Comparing animals from different habitats locally, in other areas in the UK and abroad
	Designing an investigation to lead another year groups on a bug hunt using these classification keys
	Locating a range of habitats on the school site and interpreting these results

What? (Key Knowledge)

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Deciding which animal or plant is which

Key Features to distinguish between animals	• Invertebrate or vertebrate • Mammal/reptile/fish/amphibian/bird • Colour • Length • Number of legs • Number of body segments • Distinguishing features • Habitat
Key Features to distinguish between plants	• Flowering or non-flowering • Grass/cereal/garden shrub/deciduous/algae/ coniferous/fern • Colour • Height • Number of flowers • Fruit bearing or not • Distinguishing features • Usual location

Microorganisms

Key features of microorganisms	• Include algae, fungi, protozoa, bacteria and viruses • Smallest organisms on Earth • They perform photosynthesis, break down waste and infect other organisms

Builds on: learning in Year 5 - Autumn 2 - Unit: Living Things and Their Habitats	Learning links	**Leads to:** learning in KS3 - (Year 7) - Biology