YEARS 1 & 2: ANIMALS

LINKS TO NATIONAL CURRICULUM

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals (Science Year 1 , Animals).
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) (Science Year 1, Animals).
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores (Science Year 1, Animals).
- Find out about and describe the basic needs of animals, including humans, for survival. (Science Year 2, Animals, including humans).
- 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 (Science Year 2, Living things and their habitats).
- Notice that animals, including humans, have offspring which grow into adults (Science Year 2, Animals, including humans).

Learning Objectives

1. What do all animals need to survive?
2. How are animals different and how can we group them based on similarities?
3. Carnivore, herbivore or omnivore?
4. How do animals get their food?
5. What is the life-cycle of animals?

Notes to Teachers

- One of the curriculum requirements is that children compare animals in familiar habitats with animals found in less familiar habitats. This set of lesson plans introduces the different groups of animals and gives examples of each. But for more detailed study of animals in different habitats in the UK and around the world, please see http://ypte.org.uk/lesson-plans
- The lesson plans are not intended to be of equal length and can be amalgamated or split to suit timings.
- Activities given are suggestions only. The main purpose of the lesson plans and PowerPoint presentation is to provide key information and visual aids for teachers to adapt to their needs.
- The PowerPoint presentation runs alongside the plans and all slides are referred to in the lesson plans. Please feel free to modify the presentation by adding your own slides or deleting those you don't need.

1. WHAT DO ALL ANIMALS NEED TO SURVIVE?

SUGGESTED STARTER ACTIVITIES

Animal Guessing Game

First, ask the children to make a list of all the animals they can think of. This game can either be played in groups or as a class. Children take it in turns to choose an animal from their list but not to tell anyone what it is. The other children then take it in turns to ask a closed question about the mystery animal (questions could relate to where and when the animal might be seen, how large it is, what colour it is, what it eats etc). Children will need to be reminded that they can only ask questions that can be answered with a "yes" or "no".

Pets

Ask the children to think about any pets they or their family/friends have. What do they need to keep them alive and healthy? Do pets need the same things that we need? Record all the children's ideas in a mind map on the board (food to eat, water to drink, shelter, exercise, love etc).

Animal Code of Conduct

Ask the children to create a code of conduct for when they are looking for or handling animals in their school grounds, gardens or the countryside. They could talk about this in groups and then share their ideas to create a class code of conduct. They should think about how they need to behave to protect the animals around them and also how they need to protect themselves. Things to think about include:

- Not making loud noises
- Not making sudden movements
- Not disturbing habitats
- Not dropping litter
- Handling animals correctly e.g. amphibians should always be held with wet and cold hands.
- Returning animals safely to the place where they were found.
- Not touching animal droppings
- Washing hands after handling animals

If collecting frogspawn or tadpoles for classroom observation, please see the advice given in this guide:
http://ypte.org.uk/factsheets/care-of-frogspawn-and-tadpoles/overview

TEACHER INPUT

An animal is any living thing that is not a plant. There are many many different types of animal - some live in water, some on land and some fly in the sky.
Slide 4: But they all need the same 3 things in order to stay alive:

Slides 5 & 6: Water: All animals need to drink water and different types of animals do this in different ways.

Slide 7: Air: Different animals breathe in different ways, depending on where they live. For example, fish have special organs called gills that help them breathe in oxygen from the water around them.

Slides 8-10: Food: Different types of animals need different foods and it is the main source of energy for all animals. Animals use special skills to get their food e.g. some can jump up high and catch food in their mouths or with their tongues, some use their hands to break open shells or skins.

Pets, farm and zoo animals all need to be cared for in order to stay healthy. But animals living in the wild have to find these basic needs for themselves. Many parent animals look after their young in a similar way to human adults looking after their children.

SUGGESTED ACTIVITY

Research Task

Ask the children to choose a pet or farm animal. They should research what their chosen animal needs to stay alive and happy (using books, the internet or leaflets from pet stores). They could then produce a "how to look after me" advice sheet for owners.

2. HOW CAN ANIMALS BE GROUPED?

SUGGESTED STARTER ACTIVITIES

Animal Sorting Game (see pages 10-13 for animal pictures)

Ask the children to cut out the animal pictures and think of as many different ways as possible of sorting them into groups. See if they can come up with their own ideas first, but some may need prompting e.g. legs/no legs, tail/no tail, wings/no wings, hair/no hair, live in water/live on land. They should write down their groups under titles of what they all have in common and then compare their ideas with the rest of the class. Remind the children that the same animal could be in more than one group.

The pictures can also be used in other ways. For example, you could hold up a pair of animals and ask the children to spot a similarity and a difference between the two animals.

Exploring Animal Body Parts

Ask the children whether animals have the same body parts as humans? After some discussion, they will conclude that some body parts are the same and some are not e.g. different number of legs. Also, some animal parts may have a different name from the equivalent human part e.g. paws instead of hands/feet.

Ask the children to bring in a picture of an animal - this could be a photo of a pet or a picture of an animal they like. Ask them to draw their animal and label the different body parts, using the correct vocabulary e.g. paw, whisker, tail, mane, hoof. Which body parts are different to ours and do they know why the animal has them? For example, tails can be used to help balance, wind around branches when climbing trees and to create a cooling breeze by wagging or waving them.

TEACHER INPUT

Animals can be grouped according to their features. Scientists have looked at the similarities between different animals and have then used these similarities to group them into classes - mammals, birds, reptiles, amphibians, fish and minibeasts.

KEY WORDS

Vertebrate – an animal with a backbone (all mammals, birds, amphibians, reptiles and fish).
Invertebrate - an animal without a backbone (minibeasts).
Cold-blooded - animals that are the same temperature as the air or water around them.
Warm-blooded - animals (chiefly mammals and birds) which have blood that always remains warm and doesn't change when the temperature of the environment changes.
Habitat - the place or type of place where a plant or animal naturally or normally lives or grows.

Mammals

Slides 12-14: Mammals are found almost anywhere in the world and can be all shapes and sizes. We humans are mammals!

- Most live on land, but a few live in the sea (e.g. whales and dolphins).
- Mammals are warm-blooded animals with a backbone (vertebrate).
- Mammals have lungs to breathe air with.
- **Slides 15-18** : Mammals all grow hair or fur at some point during their lives. The amount of hair they have and the type of hair can vary greatly and depends on the environment they live in.
- **Slide 19:** Mammals give birth to live young (only 5 mammal species lay eggs e.g. duck billed platypus).
- **Slide 20:** All female mammals have glands that can produce milk to feed their young.

You can find out more about lots of mammal species here:
http://ypte.org.uk/topics/animal-facts

Birds

Slides 21-22: Birds have a number of distinctive features. Scientists believe they evolved from theropod dinosaurs.

- Not all birds fly, but most can.
- Birds are warm-blooded vertebrates.
- Their bodies are more or less completely covered with feathers to keep them warm.
- They have two legs and two wings.
- Birds all start life inside an egg.

Slide 23: This shows the parts of a bird. Some of a bird's body parts are the same as a human's, but they also have some very different body parts. Can the children name them and explain why birds need them?

Slides 24-26: Birds have to sit on their eggs to keep them warm. The warmth makes sure the chicks develop properly inside the egg - this is called incubation. Different birds sit on their eggs for different lengths of time. When hatched, the parent bird will look after the chicks.

Slides 27-33: Birds vary hugely in size and colour. There are thought to be 10,426 species of bird in the world today. These slides show just a few examples of different birds. Many are specially adapted to the environments they live in and the food they need to eat.

You can find out more about lots of bird species here:
http://ypte.org.uk/topics/animal-facts

Reptiles

Slides 34-35: There are many different types of reptile and they are found on every continent, apart from Antarctica. All reptiles have certain characteristics:

- They are cold-blooded vertebrates.
- Almost all have tough, scaly skin to protect their bodies (this is very important for snakes as they slither over sharp rocks).
- They have dry skin.
- Most lay soft-shelled eggs from which their young hatch.

There are 4 main groups of reptiles:
Slides 36-37: Snakes - legless reptiles that move along the ground by flexing their body. They can move very quickly using their strong muscles.
Slides 38-39: Lizards - similar to snakes, but with legs.
Slides 40-41: Alligators and crocodiles look quite similar but have some important differences. Crocodiles have a longer, more v-shaped head than alligators. They are also more aggressive and tend to be lighter in colour.
Slide 42-43: Turtles and tortoises have a big shell to protect them from predators.

You can find out more about lots of reptiles here:
http://ypte.org.uk/factsheets/reptiles-british/overview

Amphibians

Slides 44-45: There are more than 4,000 different types of amphibians in the world. All have these characteristics:

- Amphibians are cold-blooded vertebrates
- The word amphibian means "two lives".They can live on land and in water. All amphibians begin life in the water with gills and tails. As they grow, they develop lungs and legs for their life on land. The transformation all amphibians undergo is called metamorphosis.
- Unlike reptiles they have soft, moist, usually scaleless skin.
- Unlike fish they can breathe oxygen through their lungs.
- They lay eggs.

Slides 46-48: Frogs and toads. Can the children tell the difference between them? On slide 48, there is a picture of a frog and a toad - ask the children to guess which is which before clicking again to reveal the answer.

Slides 49-50: Newts and salamanders. Newts spend most of their time on land, whereas salamanders can live on land and in water.

For more information about amphibians please see:
http://ypte.org.uk/factsheets/amphibians/what-is-an-amphibian

Fish

Slides 51-52: The combination of gills, fins and the fact that they only live in water make fish different from all other animals.

- Most fish are cold-blooded vertebrates.
- Fish are usually covered with scales which protect them and help them swim.
- They have fins to help them swim.
- They breathe underwater through gills - these are small openings on either side of their heads.
- Fish live in water - either salty seawater or the freshwater of rivers and lakes.
- They lay eggs.

Slide 53: This shows the different parts of a fish.

Slides 54-57: Scientists believe there are over 24,000 different species of fish in the world. Here are just a few of them.

Minibeasts

"Minibeast" is the collective name for many small animals - including spiders, snails, slugs, beetles, centipedes, worms, earwigs, caterpillars….. Minibeasts all have one key things in common - they are all invertebrates. This means that unlike vertebrates, they do not have a skeleton inside. This makes them soft and bendy, and because of this, some of them have hard shells to live in and give them protection.

Slides 59-62: There are thousands and thousands of types of "creepy-crawlies" all over the world. In Britain alone there are over 25,000 species of minibeasts known. Here are just a few of the minibeasts you may have seen in the UK.

For lots more information on minibeasts, please see the following:
http://ypte.org.uk/downloads/minibeasts
http://ypte.org.uk/lesson-plans/wildlife-in-your-local-area.
http://ypte.org.uk/topics/animal-facts

SUGGESTED ACTIVITIES

Sorting Game (see pages 10-13 for animal pictures)

The suggested starter activity for this lesson was for children to divide the animal pictures into groups of their own making. Now that they have learned the differences between mammals, birds, reptiles, amphibians, fish and minibeasts, can they divide the same pictures into these 6 groups?

Can the children devise their own games using the animal pictures?

Bird Table

If possible, set up a bird table in the school grounds and ask the children to record the birds that visit. Can they describe what they look like and try to identify them? The **RSPB** (http://www.rspb.org.uk/) have very useful identification systems and you could also take part in their **Big Schools' Birdwatch** - this involves counting the birds at your school during one lesson and is a chance to take part in one of the world's biggest wildlife surveys.
http://www.rspb.org.uk/discoverandenjoynature/discoverandlearn/birdwatch/

Please see YPTE's factsheet on feeding garden birds:
http://ypte.org.uk/factsheets/feeding-garden-birds

Exploring the Local Environment

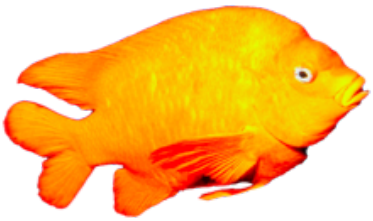
Ask the children to look for signs that wildlife is all around us in our local environment/habitat. They could record (see page 14 for an observation table) signs of wildlife in their gardens, parks, school grounds or on their walk to school. This could include:

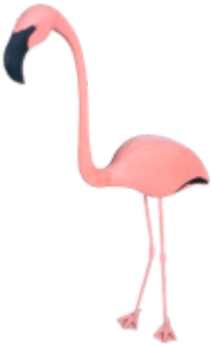
- Spotting birds in the trees (can they identify them?).
- Spotting tadpoles, frogs etc in a pond (children should be fully aware of safety around ponds).
- Spotting wildlife around around them e.g. insects, birds, squirrels etc.
- Spotting and identifying animal tracks and trails.
- Spotting and identifying animal droppings.
- Spotting and identifying animals' homes e.g bird's nest, squirrel's drey, rabbit warren, badger sett.
- Listening for sounds of wildlife e.g. bird calls.

The Woodland Trust Nature Detectives have many excellent spotter sheets to help children identify wildlife:
http://www.woodlandtrust.org.uk/naturedetectives/

The **YPTE website** have spotter sheets for identifying animals footprints and trails:
http://ypte.org.uk/factsheets/wildlife-id/footprints-mammals

ANIMAL SORTING ACTIVITY

OBSERVATION TABLE

Date	Animal	Location	What did you see/hear/find?

3. CARNIVORE, HERBIVORE OR OMNIVORE?

SUGGESTED STARTER ACTIVITY

Ask the children to list animals they are familiar with - pets they or friends/family own, farm animals they have fed, animals they have seen at wildlife parks. What does each animal eat? Compare ideas with the class. Highlight the fact that some animals only eat vegetables, some only eat meat and some eat both. What do humans eat?

TEACHER INPUT

Carnivore, Herbivore or Omnivore?

Animals can be put into groups based on the types of food they eat. We describe what an animal eats as its diet and different animals have different diets. There are 3 main groups:

Slide 64: **Carnivore** – an animal that only eats meat. A predator is an animal that lives by killing and eating other animals. The animal eaten is called the prey.

Slide 65: **Herbivore** – an animal that only eats plants.

Slide 66: **Omnivore** – an animal that eats both plant matter and other animals.

Slide 67: Many of the children may have a dog as a pet. There is sometimes confusion over whether dogs are carnivores or omnivores. What do the children think? The explanation on the slide will not appear until the second click, giving the children the chance to give their own ideas.

SUGGESTED ACTIVITY

Sorting Activity (see page 16 for name cards)

Ask the children to cut out the pet name cards and sort them into groups.
Correct sorting should be:
Carnivores - snake, cat, spider
Herbivore - rabbit, pony, guinea pig, gerbil, stick insect, tortoise
Omnivore - hamster, tropical fish, rat, chicken, mouse, chinchilla, parrot

Extension task - can the children add other animals to their lists?

CARNIVORE, HERBIVORE OR OMNIVORE?

Can you sort the list of pets below into 3 groups: carnivore, herbivore and omnivore?

HAMSTER	PONY
GUINEA PIG	SNAKE
RABBIT	CHICKEN
RAT	SPIDER
MOUSE	TROPICAL FISH
STICK INSECT	CAT
TORTOISE	GERBIL
CHINCHILLA	PARROT

Extension Task

How many more animals can you add to your list? Think about animals you may have seen at farms, in the countryside or at a zoo/wildlife park. You may need to do some research to find out what they eat.

4. HOW DO ANIMALS GET THEIR FOOD?

SUGGESTED STARTER ACTIVITY

Where Does Our Food Come From?

As an introduction to the idea of food chains, ask the children to keep a list of everything they eat in a day. Using their list, can they divide the foods into meat, fish, dairy, fruits, vegetables, cereals and other. Then ask them to think about which of the foods they eat come from animals and which come from plants. Extend this by discussing where the animals we eat get their food from.

TEACHER INPUT

All living things need energy to live and they get it from the food they eat. Plants can make their own food using a combination of sunlight, water and air. But animals and humans cannot make their own food, so they need to eat plants or other animals to get the energy they need to survive. They are all part of a food chain.

What is a Food Chain?

A food chain or web shows how animals eat the plants and other animals around them. The chain usually starts with a plant, the plant gets eaten by an animal, then the animal gets eaten by a bigger animal and so on. Plants and animals depend on each other for their food and there are lots of food chains taking place all around us.

Slide 69 shows pictures of nettles, a caterpillar, a mouse and an owl. Can the children work out what eats what?

Slide 70 puts them into a simple food chain - were they right? Can they name the predators and the prey?

Producers – plants get energy from the sun and use it to make their own food, so they are called producers.

Consumers – animals eat the plants and other animals. They do not make their own food so are called consumers.

SUGGESTED ACTIVITIES

Food Chain Ordering Task (see page 18 for worksheet)

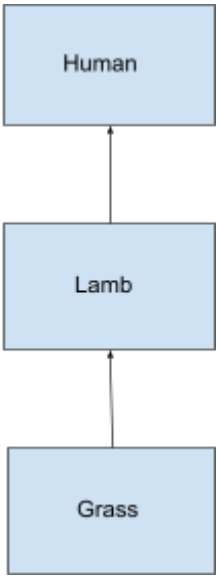
Can the children construct very simple food chains by placing the plants and animals in the correct order? They could draw them neatly in their books and label the producers, predators and prey.

Extension Task: Challenge the children to construct their own food chains.

CONSTRUCTING FOOD CHAINS

Can you put the animals and plants in the correct order to make a food chain?

1. Grass, human, lamb



2. Seaweed, dolphin, fish

3. Shark, seal, fish

4. Mouse, corn, eagle

5. Fox, rabbit, grass

6. Slug, hawk, cabbage, thrush

5. WHAT IS AN ANIMAL LIFECYCLE?

SUGGESTED STARTER ACTIVITY

Read the children *The Very Hungry Caterpillar* by Eric Carle and then discuss the following:
Which bits of the book are based on fact and which bits are not true?
What do caterpillars really eat?
Do caterpillars turn into butterflies?
How does the caterpillar grow and change?

TEACHER INPUT

Slide 72: Like humans, animals are small when they start life. Over time they grow bigger and their bodies change. When they are fully grown they will often have young animals of their own, called offspring. The process of animals being born, growing up, dying and new young animals growing up to take their place is called a life cycle.

Slide 73: Not all animals produce live offspring as humans do. Sometimes, offspring are hatched from eggs. Have the children ever seen chicks hatching in a hatchery?

Slides 74-78: The Butterfly Life Cycle
A butterfly begins its life as something completely different. This is how the transformation (metamorphosis) happens:

1. The female butterfly lays her eggs, usually on the leaves or stems of plants **(slide 74)**. Inside a tiny egg, a caterpillar starts to grow.
2. When it is ready, the caterpillar eats its way out of the egg and immediately starts chomping on the plant leaves! As it grows its skin becomes too tight and it splits open to reveal a new and larger skin underneath. It can shed its skin 4 or 5 times and a fully grown caterpillar can be over 100 times larger than when it emerged from the egg.
3. Once fully grown, the caterpillar forms itself into a chrysalis **(slide 75)**. A hardened case forms around it to protect it from predators and weather. Inside, the tissue, limbs and organs of the caterpillar transform into a beautiful winged butterfly.
4. When the butterfly is ready, the case around the chrysalis splits open **(slide 76)**. The butterfly waits for its wings to dry and then takes to the air in search of flowers to feed on and other butterflies to mate with **(slide 77)**. So the cycle is complete and ready to start again.

Slide 78: All butterflies start life as caterpillars. But the colouring of the caterpillars is often very different from the beautiful colours of the butterflies they become.

Slides 79-83: The Frog Lifecycle

1. In the Spring the frog lays eggs in a blob of clear jelly called frog spawn **(slide 79)**. Each black dot could eventually grow into an adult frog.
2. 1 week later the eggs start to change into tadpoles.
3. By late Spring the black dots hatch and are now tadpoles **(slide 80)**. They swim very well using their wriggly tails and breathe through gills.
4. 6 weeks after hatching the tadpoles have grown back legs **(slide 81)**. They are still tiny but will soon grow bigger and stronger.
5. 10 weeks after hatching the tadpoles grow front legs and start to breathe through their lungs.
6. 12 weeks after hatching the tadpole develops into a small froglet **(slide 82)**. The froglet will soon lose its tail and its eyes will get bigger.
7. By late summer the froglet has grown into a large adult frog **(slide 83)**. After 2 years a female frog will lay more frogspawn and the cycle begins again.

SUGGESTED ACTIVITIES

Frog Life Cycle

If possible, the children should watch tadpoles change into frogs in a school pond. If removed from the pond, it is vital that froglets are returned to the pond from which the spawn was originally taken. Children could fill in an observation chart with drawings to show changes over time.

If children are near a pond they must be warned about the dangers associated with ponds and must be supervised at all times.

Please see this guide for advice on how to care for frogspawn and tadpoles: http://ypte.org.uk/factsheets/care-of-frogspawn-and-tadpoles/overview

Butterfly Lifecycle: Ordering Task (see page 22 for worksheet)

Ask the children to cut out the pictures and glue them down in the correct order, using arrows to link the stages. They could write labels to explain what is happening at each stage.

Matching Baby Animal to Adult Animal (see page 23 for worksheet)

Often the young offspring are referred to by different names to the adults of the species. Ask the children to draw lines matching the name of the baby animal to the adult name. Alternatively they could cut the names out and play a pairing game.

A further option is to glue the names onto a piece of paper/their books and draw pictures next to them.

Children's Experiences

Ask the children if they have experienced a baby animal growing older. This could be a pet e.g. puppy, kitten or perhaps lambs or calves on a farm. Can they draw pictures and write about how a baby animal grows into an adult animal?

We value your feedback!

Let us know what you thought of this lesson plan by completing this Google Form https://forms.gle/cGAwi9AWXfSZgrYa9. **Thank you!**

BUTTERFLY LIFECYCLE

Carefully cut out the four pictures and glue them down in the correct order, using arrows to link them together. Can you add labels to explain what is happening at each stage?

CAN YOU MATCH THE BABY ANIMAL TO THE ADULT ANIMAL?

ADULT ANIMAL	BABY ANIMAL
DOG	GOSLING
RABBIT	CHICK
FROG	KITTEN
BUTTERFLY	CYGNET
BIRD	PIGLET
KANGAROO	DUCKLING
CAT	FOAL
COW	KITTEN
HORSE	LAMB
SHEEP	TADPOLE
PIG	JOEY
DUCK	PUPPY
SWAN	CALF
GOOSE	CATERPILLAR