Colney Heath School - Science		
Topic: Living Things and their Habitats	**Year: 5**	**Biology**

What should I already know?

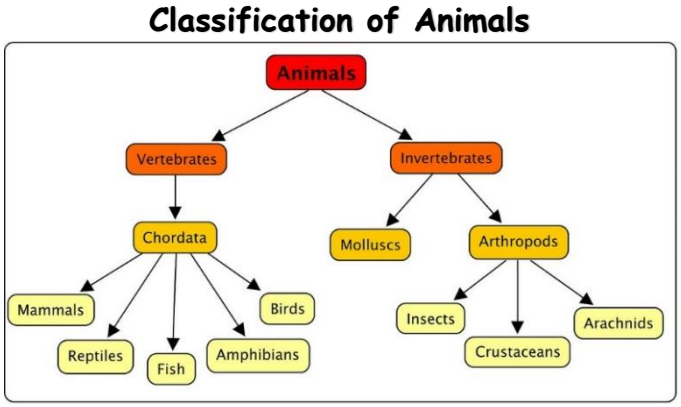
- Animals can be grouped into vertebrates and invertebrates. They can be grouped into further categories, e.g. mammals, reptiles, birds, fish and amphibians.
- Some examples of life cycles (including those of plants and humans).
- Plants can also be categorised in many different ways, e.g. flowering and non-flowering plants.

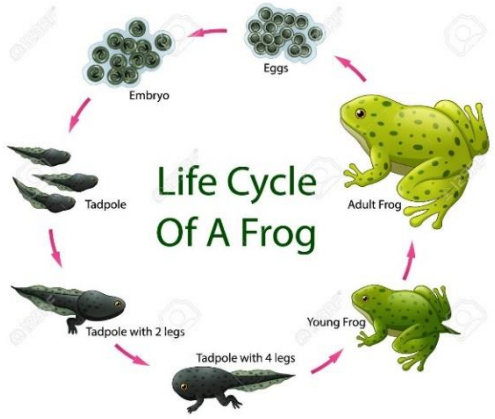
- The processes of pollination, fertilisation, germination and dispersal.
- There are seven life processes (common features) of living things – Movement, Respiration, Sensitivity, Growth, Reproduction, Excretion and Nutrition.
- Parts of a plant, their features and what their functions are.
- The word metamorphic means 'a change of form' (in the context of rocks).

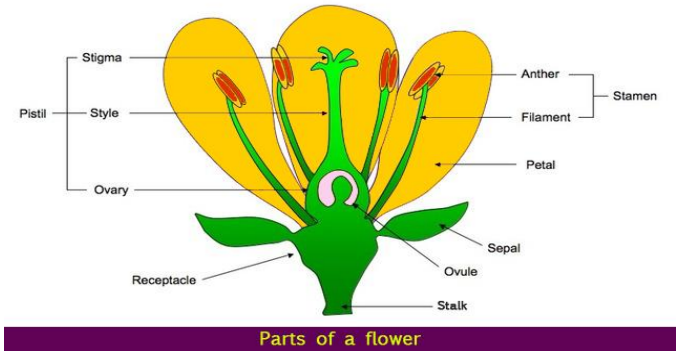
Vocabulary

Vertebrate	An animal with possession of a backbone/ spinal column
Invertebrate	An animal lacking a backbone
Habitat	The natural home or environment of an animal, plant or other organism
Amphibian	A cold-blooded vertebrate animal that compromises frogs, toads, newts, salamanders and caecilians
Bird	A warm-blooded egg-laying vertebrate animal distinguished by the possession of feathers, wings, a beak and typically able to fly
Insect	A small animal that has six legs and generally one or two pairs of wings
Life cycle	The series of changes that an animal goes through in its life, including reproduction.

Diagrams





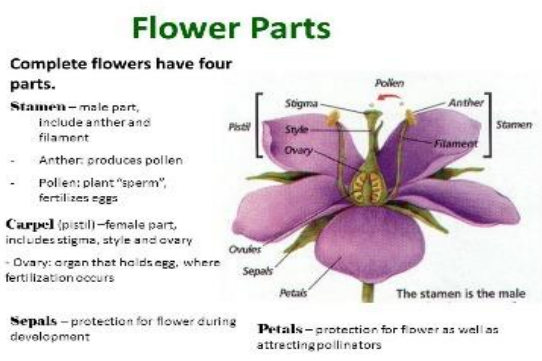


Parts of a flower

Vocabulary

Mammal	A warm-blooded vertebrate animal, distinguishable by the possession of hair or fur, females secreting milk for young and typically giving birth to live young
Reproduction	The production of offspring by a sexual or asexual process
Sexual reproduction	Requires two parents with male and female gametes (cells) will produce offspring that is similar to but not identical to the parent.
Asexual reproduction	Will produce offspring that is identical to the parent. Requires only one parent.
Metamorphosis	The process of transformation from an immature form to an adult form in two or more distinct stages.
Dispersal	The movement, spread or transport of seeds away from the parent plant.
Fertilisation	The union of male and female gametes (reproductive cells) to produce a zygote (fertilised egg).
Germination	The phase of plant growth when the seed begins to sprout.
Pollination	The process that allows plants to reproduce.

Pistil	The female part of a flower (each consists of the stigma, style and ovary)
Stigma	The top of the female part of the flower which collects pollen grains.
Style	Long, slender stalk that connects the stigma and the ovary
Ovary	Produces the female sex cells (contained in the ovules).



Stamen	The male part of the flower (each consists of an anther held up on a filament).
Anther	Produces male sex cells (pollen grains).
Filament	A long, thin structure that supports an anther
Photosynthesis	Plants use sunlight, carbon dioxide (a gas that is found in the air) and water to make their own food. This process is called photosynthesis.

The Big Picture

By the end of our project we will know that

Naturalists and Animal Behaviourists

Naturalists

A natural scientist, or naturalist, studies animals and plants by observation, rather than by experimenting.

One example of a naturalist is Sir David Attenborough, who is known for presenting information and findings about animals through innovative and engaging television programmes.

Other naturalists include:
-Charles Darwin
-Alfred Russel Wallace
-Steve Irwin

Animal Behaviourists

Animal behaviourists make scientific studies of everything that animals do, from observations to experimentation.

One example of an animal behaviourist is Dr Jane Goodall, who is best known for her 55-year study of the behaviour of chimpanzees. She is the founder of a conservation institute.

Others include:
-Karl von Frisch
-Konrad Lorenz
-Nikolaas Tinbergen

How plants reproduce. Male gametes can be found in the pollen. Female gametes can be found in the ovary (they are called ovules). Pollination occurs when pollen from the anther is transferred to the stigma by bees and other insects. The pollen then travels down and meets the ovule. When this happens, seeds are formed -this is called fertilisation. Seeds are then dispersed so that germination can begin again.
Some plants, such as daffodils and potatoes, can also produce offspring using asexual reproduction.
The life cycles of mammals, birds, amphibians and insects have similarities and differences. One difference is that amphibians and insects go through the process of metamorphosis. This is when the structure of their bodies changes significantly as they grow (for example, from tadpole to frog or caterpillar to butterfly).

Biology
B1: Living things are special collections of matter that make copies of themselves, use energy and grow.
B2: Living things on Earth come in a huge variety of different forms that are all related because they all came from the same starting point 4.5 billion years ago.
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.