

Key Stage: KS2
Year: 5

**Living Things and
their Habitats**

Prior learning:

Pupils should be taught to:
(Yr 4)

- 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 dangers to living things.

Science NC

Statutory requirements:

Pupils should be taught to:

- 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 requirements:

- 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 such as 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.

Teacher assessment criteria

- Name, locate and describe the functions of the main parts of plants, including those involved in reproduction.
- Name, describe and compare different reproductive processes and life cycles in animals.

Subject Knowledge:

- All living things share 7 life processes known as MRSGREN or MRS NERG: Movement , Respiration, Sensitivity, Growth Reproduction, Excrete and Nutrition
- All living things will die; and if the species is to continue, and is to have any future, then it needs to reproduce.
- Reproduction produces new offspring of their kind - plant or animal. As the old die off, the young take their place.
- A species that is good at reproduction will survive.
- Green plants reproduce by flowering. The flowers contain the cells that will combine to produce the seeds and then the new plant. Ideally, cells from two different plants will combine; but if all else fails, a plant can fertilise itself to produce seeds.
- The flower produces female egg cells in its ovary. The ovary has a sticky stigma on a long style to catch the male pollen cells. The pollen cells are produced in the stamens. These tiny specks are carried to the stigma of another plant by the wind, or on an insect. The insect gets sticky, sugary nectar from one plant and gives it to another plant - like a postal service.
- When the egg cell is fertilised, it develops into a seed. The ovary may develop too, into a fruit. Because now the challenge is to move the seed - away from its parent plant to somewhere where it will grow. The wind may blow it, or water may carry it; it may stick to a passing animal, or be swallowed by one, only to emerge in the animal's droppings and grow. The new plant will flower in turn.
- This is all a risky business - and so lots of pollen and seeds are produced to help ensure that new plants will grow.
- Most animals including fish, mammals, reptiles and birds have very simple life cycles:
 - they are born (either alive from their mother or hatched from eggs)
 - they grow up

Amphibians, like frogs and newts, have a slightly more complicated life cycle. They undergo a metamorphosis (a big change):

- they are born (either alive from their mother or hatched from eggs)
- they spend their childhood under water, breathing with gills
- they grow into adults and move to the land, breathing with lungs

Animals that Undergo a Complete Metamorphosis:

Insects

These insects have four stages in their life cycle:

- egg: unborn stage.
- larva: young stage -- this is when most of the feeding is done. (they usually look like worms)
- pupa: inactive (no feeding) stage between larva and adult stages. (usually well camouflaged)
- adult: final, breeding stage. (they usually grow wings)

Animals that Undergo an Incomplete Metamorphosis:

About 10% of insects go through an incomplete metamorphosis. They do not have a pupal form -- these include dragonflies, grasshoppers and cockroaches.

These insects have three stages in their life cycle:

- egg: unborn stage.
 - nymph: young stage -- this is when most of the feeding is done.
 - adult: final, breeding stage - including wings.
- The 5 main groups of vertebrates are: Mammals, Reptiles, Fish, Amphibians and Birds