# Year 3 Summer 1

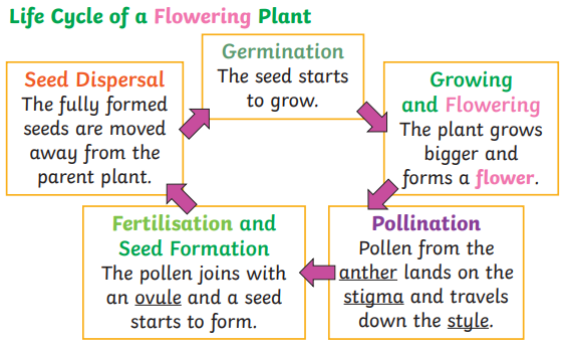
## Science Topic : Plants

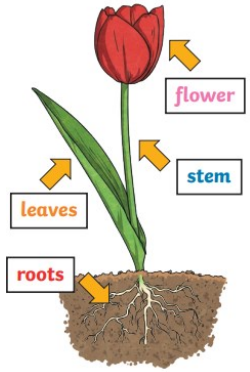
### What should I already know?

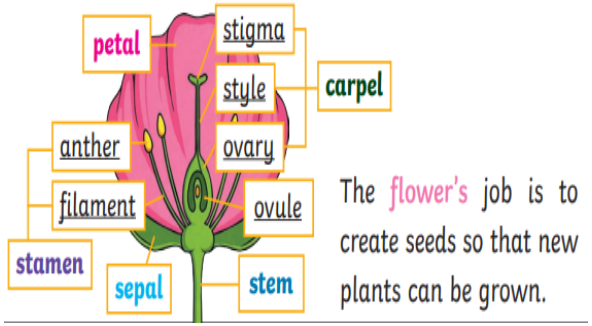
- Describe how seeds and bulbs grow into mature plants.
- Name various common plants - trees, flowers and vegetables.
- Plants need water, light and a suitable temperature to grow and be healthy.

### Key Knowledge:

- Water moves from the roots of a plant, through the stem and to the leaves. From the leaves it evaporates.
- Animals and insects can help pollinate plants by carrying pollen on their bodies.
- Label all of the parts of the plant from the roots to the petals, with both male and female parts.
- Seeds can be dispersed by water, plant shaking, dropping on the ground, carried or eating by animals and bursting from the plant.




| | Vocabulary |
|---|---|
| Roots | These anchor the plant into the ground and absorb water and nutrients from the soil. |
| Stem | This holds the plant up and carries water and nutrients from the soil to the leaves. A trunk is the stem of a tree. |
| Leaves | These make food for the plant using sunlight and carbon dioxide from the air. |
| Nutrients | These substances are needed by living things to grow and survive. Plants get nutrients from the soil and also make their own food in their leaves. |
| Evaporation | When a liquid turns into a gas. |
| Fertilisation | When the male and female parts of the flower have mixed in order to make seeds for new plants. |
| Seed dispersal | A method of moving the seeds away from the parent plant so that the seeds have the best chance of survival. |
| Stamen | The male parts of the flower. The stamen is made up of the anther and the filament . |
| Carpel | The female parts of the flower. Made up of the stigma, style and ovary . |
| Sepal | Leaf-like structures that protect the flower and petals before they open out. |
| Pollination | When pollen (a fine powdery substance produced by a flowering plant) is moved from the male anther of a flower to the female stigma. |
| Germination | When a seed starts to grow . |
| Petal | The brightly coloured part of the flower that attracts insects to pollinate the plant . |

# Year 4 Summer 1

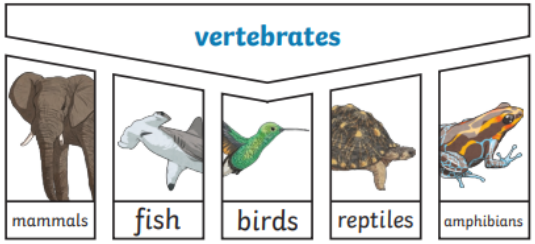
## Science Topic : Living things and habitats

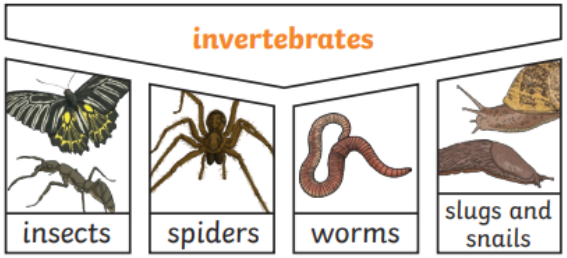
### What should I already know?

- Identify animals in their habitat.
- Compare animals based on their structural features.
- Name common animals in the main vertebrate groups.

### Key Knowledge:

- Vertebrates can be separated into five groups - mammals, fish, birds, reptiles and amphibians.
- Natural effects on he environment - earthquakes, storms, wildfires and floods.
- Man made effects on the environment - deforestation, pollution and urbanisation.
- To stay alive and healthy, all living things need the seven life processes.



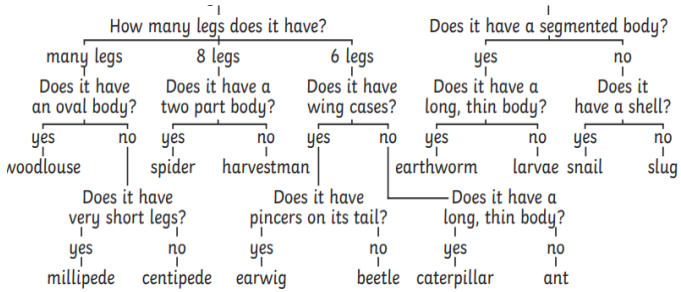




**Characteristics of living things**

**MRS GREN**

**M**ovement
**R**espiration
**S**ensitivity

**G**rowth
**R**eproduction
**E**xcretion
**N**utrition




| | Vocabulary |
|---|---|
| Organisms | This is another word that can be used to mean 'living things'. |
| Life process | The things living things do to stay alive. |
| Respiration | A process where oxygen from the air helps turn food into energy. |
| Sensitivity | The way living things react to changes in their environment |
| Reproduction | The process where young are produced. |
| Excretion | The process to get rid of waste products. |
| Nutrition | The process of obtaining food to provide energy to live and stay healthy. |
| Habitat | The specific area or place in which particular animals or plants may live. |
| Environment | Many habitats within an area. |
| Endangered | A plant or animal where there are not many of their species left. |
| Extinct | When a species has no more members alive on the planet. |
| Classification | This is where plants or animals are placed into groups according to their similarities. |
| Specimen | A particular plant or animal that scientists study to find out about its species. |
| Characteristics | The distinguishing features or qualities that are specific to a species. |

# Year 5 Summer 1

Science Topic : Living things and their habitats

## What should I already know?

- How living things can be classified by their characteristics.
- Living things are affected by their environment.
- Animals are classified into Mammals, Reptiles, Fish, Birds and Amphibians.

## Key Knowledge:

- Plants contain both the female and male cells whereas human and many other animals contain either female or male.
- Wind and insects help transfer pollen to different plants. It travels from the stigma of another plant to the ovule where it fuses together.
- Some plants such as strawberry plants or potatoes, reproduce using asexual reproduction creating copies of themselves.
- The most well known cycle of sexual

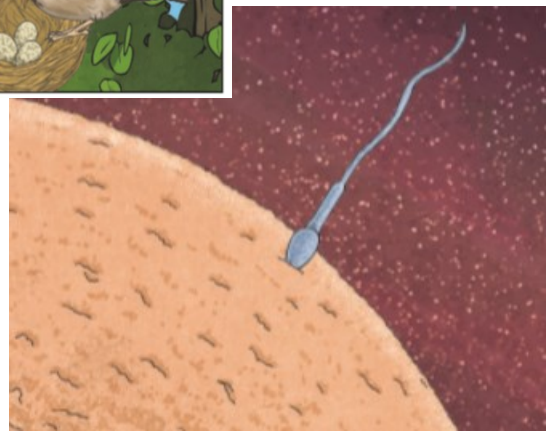
Humans develop inside their mothers and are dependent on their parents for many years until they are old enough to look after themselves.

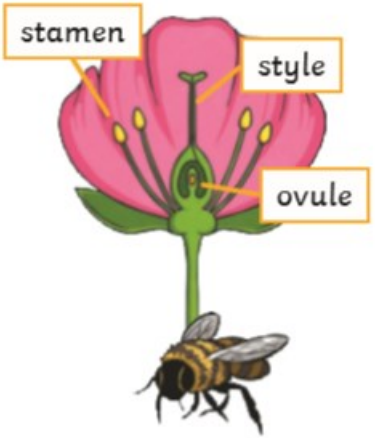
Amphibians such as frogs are laid in eggs then, once hatched, go through many changes until they become an adult.

Some animals, such as butterflies, go through metamorphosis to become an adult.

Birds are hatched from eggs and are looked after by their parents until they are able to live independently.

| | Vocabulary |
|---|---|
| Asexual reproduction | One parent is needed to create an offspring. The offspring is an exact copy of their parent. |
| Fertilise | The actions of male and female cells fusing together |
| Gestation | The length of a pregnancy. |
| Life cycle | The journey of changes that take place throughout |
| Metamorphosis | An abrupt and obvious change in the structure of |
| Pollination | The transfer of pollen to a stigma to allow |
| Reproduction | The process of new living things being made. |
| Sexual reproduction | Two parents are needed to create offspring. They are similar but not identical to either parent. |





# Year 6 Summer 1

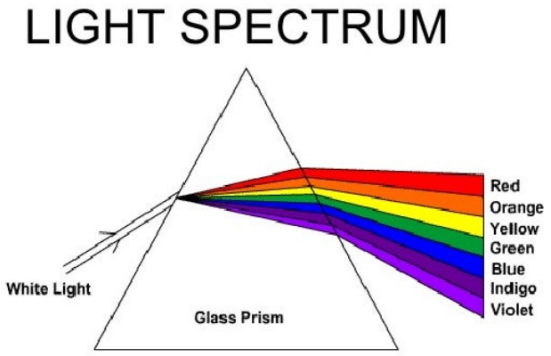
Science Topic : Light

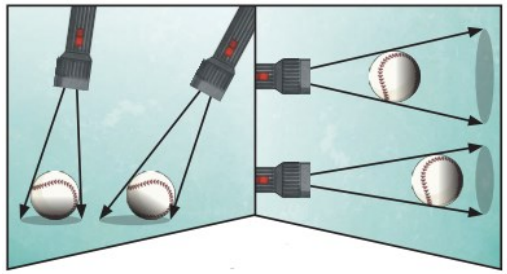
## What should I already know?

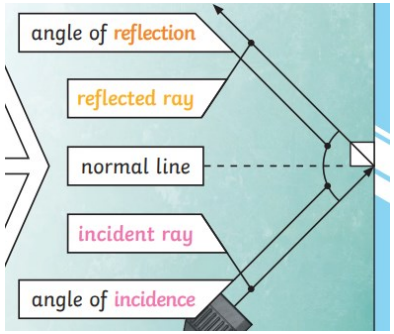
- Light is needed to see things and dark-ness is the absence of light.
- Light is reflected from surfaces.
- Light from the sun can be dangerous and we should protect our eyes.
- Shadows are formed when objects block out light.

## Key Knowledge:

- Light travels in straight lines and we are able to see things when the light goes to our eyes.
- Lines of light are called rays or beams.
- The angle of incident and angle of reflection is the same.
- Shadows can be elongated or shorten by changing the angle of the light source.
- Isaac Newton shone a light through a prism separating the light into the colours of the spectrum.






| | Vocabulary |
|---|---|
| Refraction | When light bends as it passes from one medium to |
| Visible prism | Light that is visible to the human eye. It is made of the |
| Prism | A 3D shape with flat sides. A transparent prism |
| Shadow | An area of darkness where light has been blocked. |
| Transparent | Objects that let light travel through them easily. |
| Translucent | Objects that let some light through but scatters the light |
| Opaque | Objects that do not let any light through them. |
| Light | A form of energy that travels in a wave from a source. |
| Light source | An object that makes its own light. |
| Reflection | When light bounces off a surface |
| Incident ray | A ray of light that hits the surface. |
| Reflected ray | A ray of light that bounces back off the surface. |
| Law of | The angle of the incident ray is equal to the angle of the |