

Key Facts

Sexual reproduction in flowering plants

The reproductive organ of flowering plants is the flower. Most flowering plants have flowers with both male and female parts - 'perfect flowers'. Some plants have separate male flowers and female flowers on the same plant. A smaller number of plants have male flowers and female flowers on separate plants. The female part of a flower consists of the carpels, which is where the seeds are formed. It has three parts: the stigma, the style, and the ovary. The male parts of the flower are the stamens, which produce pollen. Each stamen has two parts: an anther and a filament. The anther contains the pollen and the filament supports the anther. When the flower is pollinated, a pollen grain sticks to the stigma. It then travels through a narrow tube which grows down through the style to the ovary. In the ovary, the pollen joins with the ovules. This fusion of the male and female cells is called fertilisation and the fused cells divide to develop into seeds. After fertilisation, the ovary usually swells and becomes the fruit.

Asexual reproduction in plants

Many plants can also reproduce without forming seeds. This is called asexual or vegetative reproduction, which results in new plants that are genetically identical to the parent.

Plants may reproduce themselves naturally:

- Below ground - rhizomes, tubers, bulbs and corms. These are underground growths on the root or stem of a plant and contain stores of food to provide for the growing young plant.
- Above ground - the parent plant produces runners and new plants sprout along its length.

Reproduction in animals

One of the major characteristics of the major groups of animals is the means by which they reproduce. Although there are examples of animals that can reproduce asexually, this is not common. Sexual reproduction is therefore the norm in animals.



Science Year 5 Summer 1 Reproduction in Plants and Animals

Vocabulary

Word	Definition
Life cycle	the sequence of changes that a living thing goes through as it grows and develops
Species	a group of living things that can mate with one another but not with those of other groups.
Process	a series of changes or acts that happen one after another.
Germinate	to start or cause to start growth; sprout.
Metamorphosis	the changes in form of some living things as they grow.
fertilise	To make able to produce babies/seeds/eggs.
reproduce	To make a copy of/ produce another.
Chrysalis	A hard covering of a moth or butterfly while it is in the pupa stage: changing from a caterpillar to a butterfly.
Pollinate	To move a pollen to a plant so it can fertilise

Common misconceptions:

- Children may think that humans are not animals and substitute 'animal' for types of mammal.
- Children tend only to recognise common mammals as animals and do not include birds, insects, fish and amphibians.
- Children may not appreciate that different types of animals have different life cycles; for example, they may think that all young animals start life as miniatures of their adult parents.
- Children may not recognise that reproduction is a characteristic of living things.
- Some children think that plants do not reproduce sexually at all.
- Children may think that bees and other insects visit flowers to pollinate them. They visit flowers to collect nectar; their role in pollination is accidental as far as the insect is concerned.
- Children may think that bees fertilise flowers; they pollinate them. Fertilisation happens when male and female genetic material fuses.

Knowledge and Understanding:

Children will learn:

In this module children learn about reproduction in some types of plants and animals, including humans. It builds on the learning about different types of animals and their life cycles begun in Circle of Life. As they learn about plant reproduction children will extend their knowledge from Year 3 of the function of the different parts of flowering plants. They will also learn that plants can reproduce in other ways, through asexual reproduction. As they learn about reproduction in animals children will find out more about specific mammals, birds, insects and amphibians and how they reproduce.

There are lessons focusing on humans, one of which is about the complete human life cycle and two of which focus on puberty. All children should learn about changes in boys and girls.

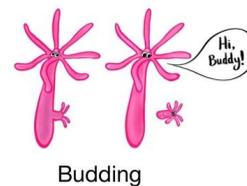
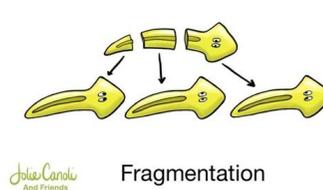
Key skills and concepts:

Children will be able to:

When working scientifically, children carry out first-hand observations of flowering and other plants, and also use secondary sources of information.

They group and classify living things according to similarities in reproduction processes.

They also report and present findings from their enquiries in a variety of ways, including posters, fact cards and guides.



Key Questions

Describe a life cycle.

What are the differences between the life cycle of animals and plants?

What are the difference between the life cycle of different species?

Eg Mammals and birds?

Amphibian and reptiles?

How do these differences explain why animals become endangered?

What can be done to prevent the extinction of different species?

PLANT Life Cycle

