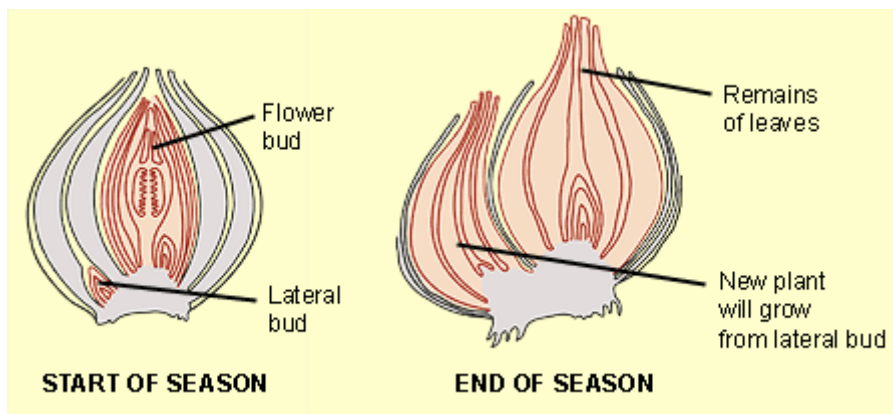


Asexual reproduction

Asexual reproduction **only needs one parent**, unlike sexual reproduction, which needs two parents. Since there is only one parent, there is no fusion of gametes and no mixing of genetic information. As a result, the offspring are genetically identical to the parent and to each other. **They are clones.**

Plants

Asexual reproduction in plants can take a number of forms. Many plants develop underground food storage organs that later develop into the following year's plants. Potato plants and daffodil plants do this, for example.



Daffodil bulb

Some plants produce side branches with **plantlets** on them. Busy Lizzy does this. Other plants, such as strawberries, produce **runners** with plantlets on them.



New plant developing from strawberry runner

Animals

Asexual reproduction in animals is less common than sexual reproduction. It happens in sea anemones and starfish, for example.

Sexual reproduction

Organisms have sex cells called **gametes**. In human beings, the male sex cells are called **sperm** and the female sex cells are called eggs or **ova**.



Fusion

Sexual reproduction happens when a male gamete and a female gamete join. **This fusion of gametes is called fertilisation.** Sexual reproduction allows some of the genetic information from each parent to mix, producing offspring that resemble their parents, but are not identical to them. In this way, sexual reproduction leads to variety in the offspring. Animals and plants can reproduce using sexual reproduction.

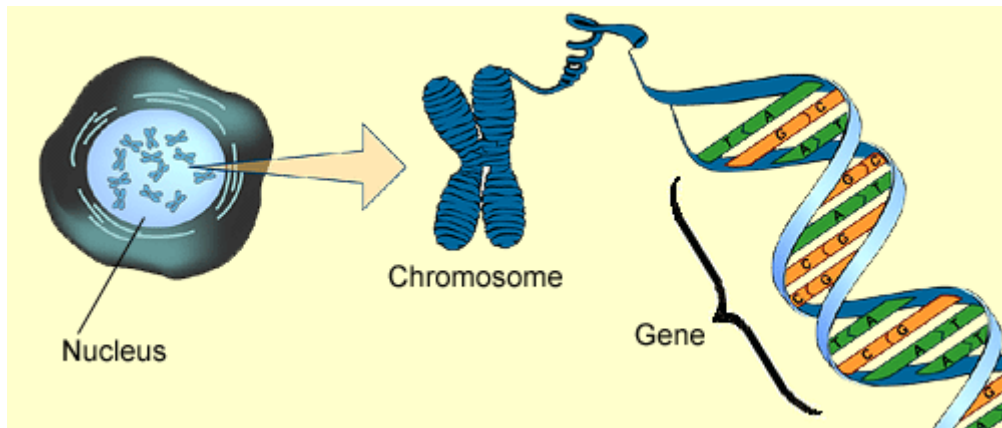
In human beings, **each gamete contains 23 chromosomes**, half the number found in the other cells of the body. When the male and female gamete fuse, the new embryo contains the full 46 chromosomes – half from the father and half from the mother.

Genetic information

Offspring resemble their parents because they contain genetic information passed on to them by their parents.

Chromosomes and genes

A gene is a section of **DNA** that carries the code for a particular protein. Different **genes control the development of different characteristics of an organism.** Many genes are needed to carry all the genetic information for a whole organism. Chromosomes, found in the cell nucleus, contain many genes.



The number of genes and chromosomes varies from species to species. For example, cells in human beings have 46 chromosomes that carry about 30,000 genes in each cell; and cells in fruit flies have eight chromosomes that carry about 13,600 genes.