Reproduction

Reproduction is one of the essential processes of life. It occurs not only between human and animals, but also in every single one of our cells. There are two different types of reproduction and they are present for different purposes.

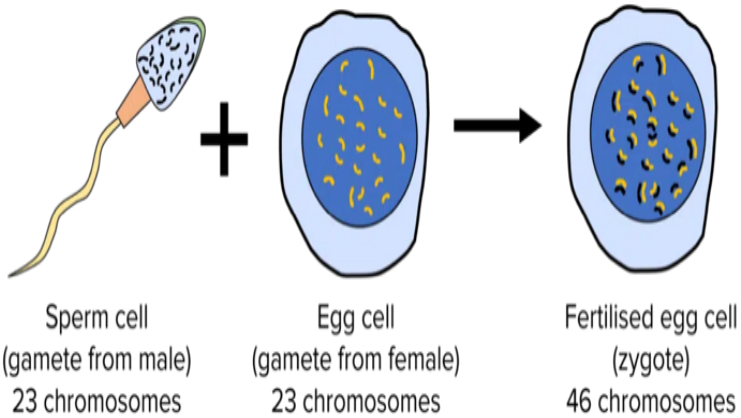
1. **Sexual reproduction**
2. **Asexually reproduction**

1. Sexual Reproduction

- **Sexual reproduction** is where **genetic information** from a mother and father is mixed together to form **genetically different** offspring.
- Each **offspring** will **inherit** different genes from their **parents**, giving them all different features and characteristics.
- **Genetic information** from the mother and father is carried in sex cells called **gametes** which are formed in a process called **meiosis**. When the **nuclei** of the two gametes fuse together in **fertilisation** they form a **zygote**.

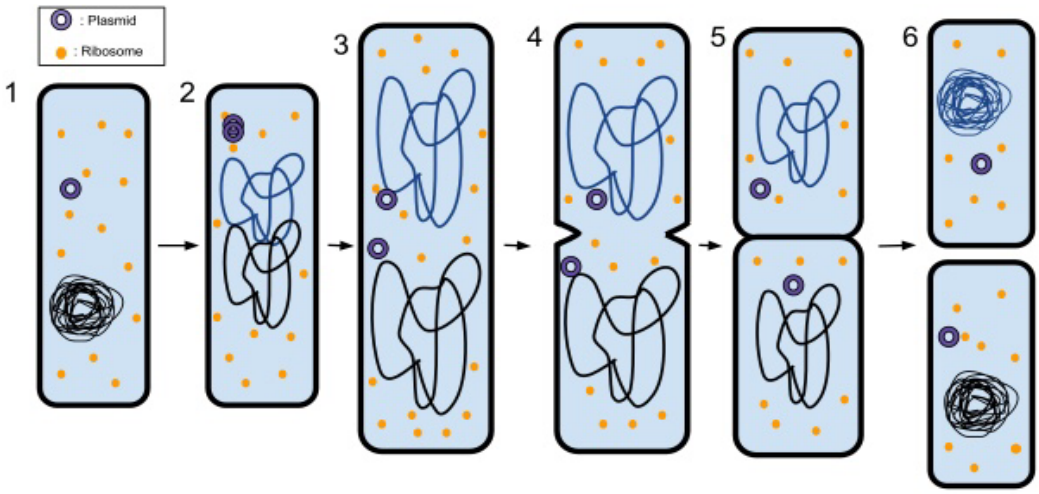
  - **Gametes** in **animals** are called **sperm cells** (from father) and **egg cells** (from mother).
  - **Gametes** in **flowering plants** are called **pollen** (from father) and **egg cells**(from mother).

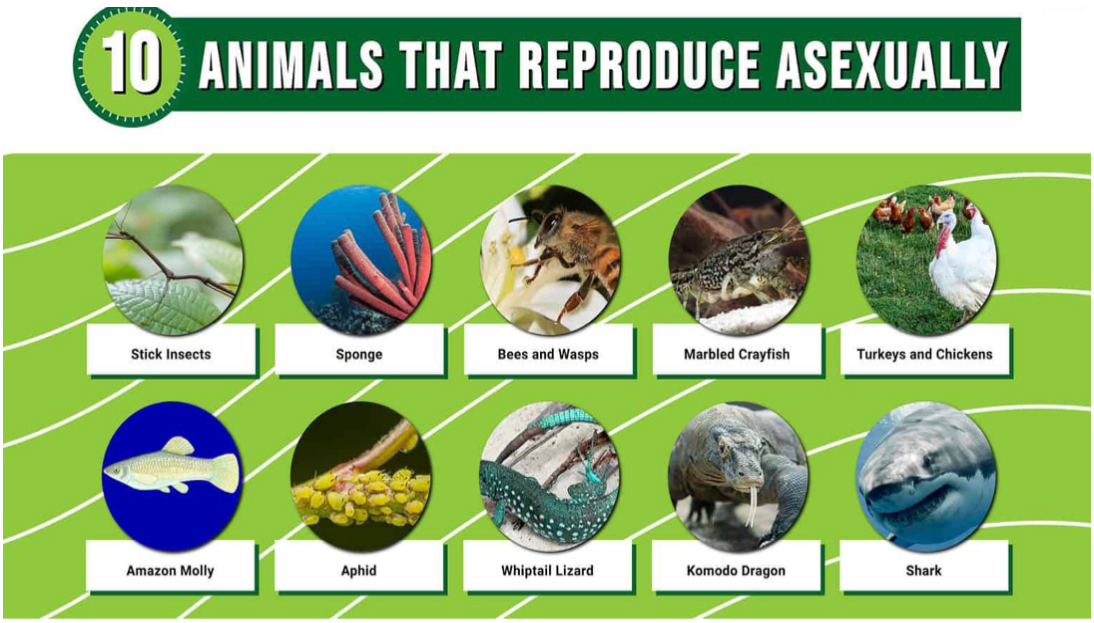
- **Humans** have **46 chromosomes** and their **gametes** (sperm and egg cells) have 23 **chromosomes**. When the **nuclei** of the gametes fuse, the **genetic information** combines together giving the offspring a full set of **chromosomes**.



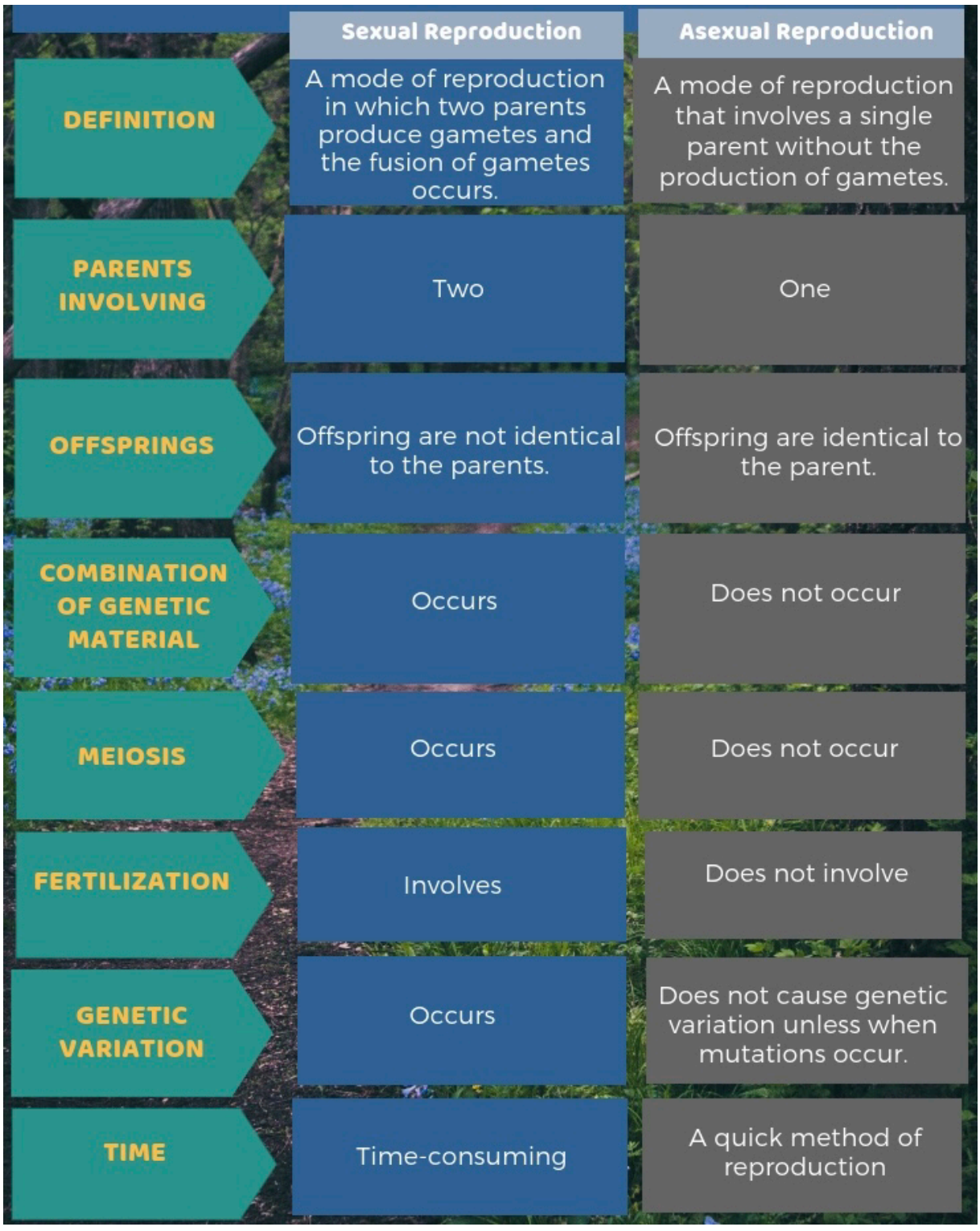
2. Asexual Reproduction

- **Asexual reproduction** is where offspring are created from **one parent only**. As there is no fusion of **gametes** or mixing of **genetic information**, offspring will be **genetically identical** to each other and their parent (**clones**).
- This process usually happens through **mitosis**, where a cell makes a copy of its **genetic information** and then splits into two.
- **Bacteria** and some **plants** and **animals** reproduce **asexually**.
- Example of Asexual reproduction is Binary fission.





Sexual reproduction Vs Asexual reproduction



Organisms that Reproduce Sexually and Asexually

- Some organisms reproduce **sexually** and **asexually**, which method they use at a given time depends on certain circumstances.
- There are few examples:

1. **Malarial parasites c**ause the disease malaria. Mosquitos act as a vector; they carry the parasite and spread the disease to humans by biting them. The parasite reproduces sexually when it is in the mosquito vector but reproduces asexually in the human host.
2. **Fungi** release spores that grow into new fungi if they land on a suitable surface. The spores are either produced sexually or asexually. The majority of the time they release asexual spores that produce offspring that are identical to the parent. However, sometimes they produce spores produced by sexual reproduction to introduce some variation to the population, particularly when conditions are unfavorable.
3. **Strawberry Plants** reproduce sexually, by producing gametes in their flowers but can also reproduce asexually by producing runners. Runners are stems that grow horizontally from the plant and new plants that are genetically identical to the parent grow at various points along them.
4. **Daffodils** reproduce sexually using gametes found in their flowers but can also reproduce asexually from their bulbs. Daffodil bulbs can form new bulbs that divide off and grow into new plants.