

# Selective breeding

## Artificial selection

**Selective breeding** is a process which is carried out by **people** to improve characteristics in plants and animals, usually for human benefit.

As this process is carried out by humans, it is sometimes referred to as **artificial selection**.

Organisms can be selectively bred for the following **features**:

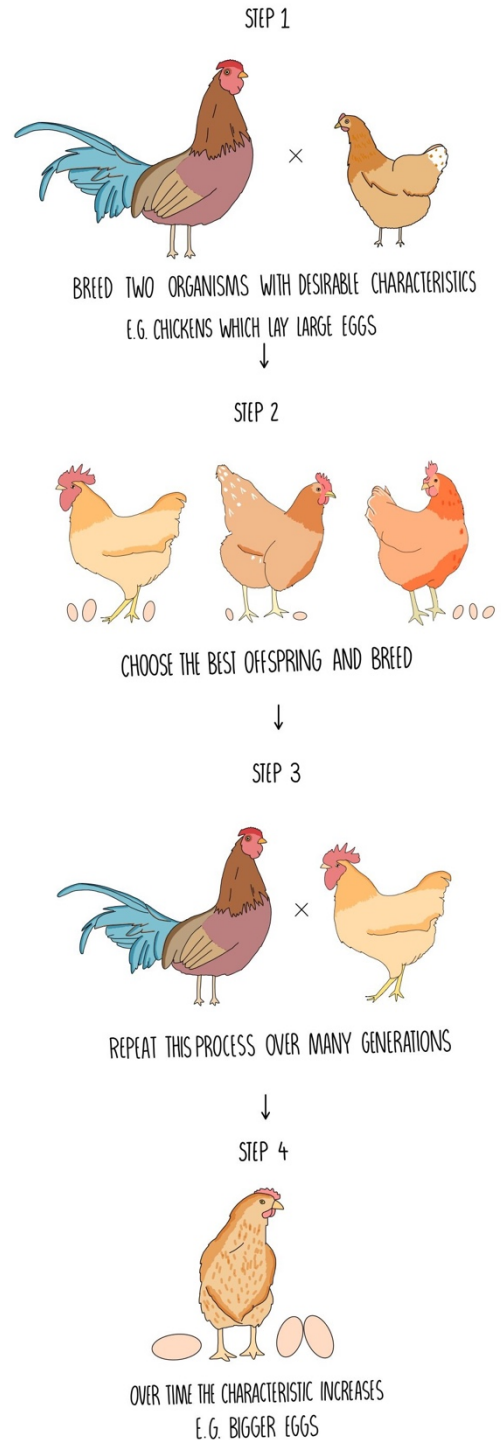
- Increased meat or milk production
- Larger eggs
- Larger fruit
- Resistance to disease
- Increased nutritional content
- Calm temperament

## Method of selective breeding

Selective breeding is a long process which results in gradual changes to a species with each successive generation.

It is carried out in the following way:

1. A male and female organism are **selected** which display the **desired characteristic** (e.g. high meat production)
2. The parents are **bred together** to produce offspring
3. The **offspring** which also display the desired characteristic are **selected** and **bred** together.
4. This process is **repeated** over many generations



## **Problems with selective breeding**

As selective breeding involves a lot of inbreeding, the offspring are **genetically similar** so are equally vulnerable to the same diseases. Inbreeding can also result in **loss of alleles** from a population, making it difficult to produce different varieties of plants or animals in the future.

Selective breeding for certain traits can often result in adverse **health problems**.

For example, certain dog breeds have been selectively bred to produce cuter puppies with more exaggerated features. Inbreeding of dog breeds such as pugs and French bulldogs to achieve squashed noses has resulted in blocked airways and breathing difficulties.