

Continuous and Discontinuous Variation.

Continuous Variation

This type of variation is when the individuals in a population **vary within a range**. There are no **distinct categories**. For example, humans can be any height within a range (40 cm, 90 cm, 132.6 cm, 186.09 cm), not just short or tall.

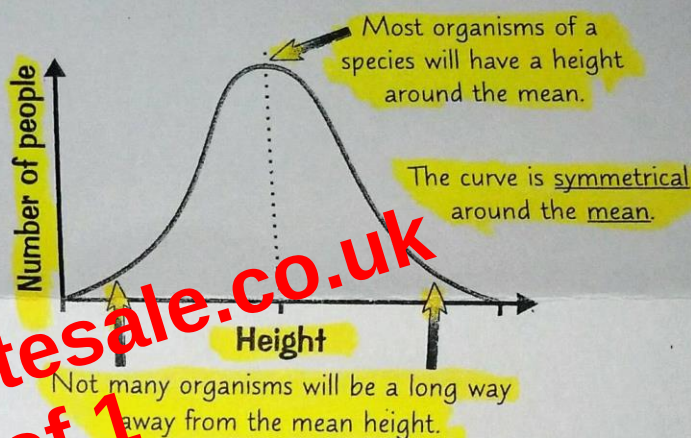
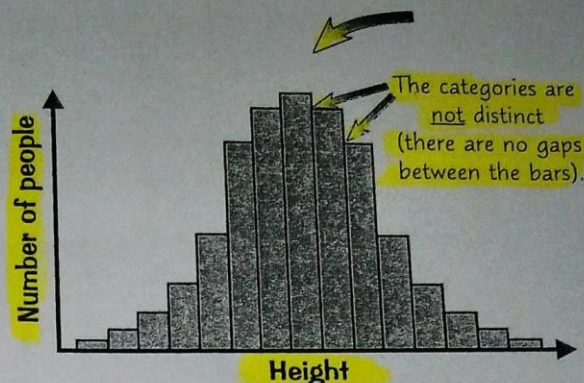
Characteristics that show continuous variation are often controlled by both **genes** and the **environment**.

Other examples include:

- **Animals** – e.g. animals can be any **mass** within a range.
- **Microorganisms** – e.g. the **width** of bacteria varies within a range.
- **Plants** – e.g. a **tree** can have any **number of leaves** within a range.

A graph of continuous variation has a shape called a **normal distribution curve** (a bell shaped or symmetrical curve).

The graph shows that **most** individuals measure within the **middle** part of the **range**. There are **fewer** individuals at the **two extremes** of the range.



Discontinuous Variation

This type of variation is when the characteristic falls into **two or more distinct categories**.

The **individual** will fall into only **one** of these categories.

Characteristics that show discontinuous variation are **genetic**.

Some examples include:

- **Animals** – e.g. **humans** can only belong to **blood groups A, B, AB or O**
- **Microorganisms** – e.g. **bacteria** are either **antibiotic resistant** or **not**.
- **Plants** – e.g. the **colour** of a **tomato** is either **red**, **orange**, or **yellow**.

