

## 2.4: Variation and evolution

### Types of variation

- continuous: illustrated graphically in a bell-shaped curve
- discontinuous: illustrated graphically in discrete groups

### Variation in individuals of the same species

- have both environmental and genetic causes

### The variation in height/length in organisms

- shows that individuals of the same species are similar but never exactly the same

### Sexual reproduction

- leads to offspring being genetically different from the parents, as fertilisation produces a single cell with a new set of pairs of chromosomes
- gives rise to variation

### Asexual reproduction

- leads to offspring being genetically identical to the single parent (a clone)

### Heritable variation

- the basis of evolution
- differences in genes
- may cause a wide range of variation in individual organisms in a particular species

### Individuals with characteristics adapted to their environment

- more likely to survive and breed successfully

### Modelling to illustrate the effect of camouflage colouring in predator and prey relationships

- e.g. picking up different coloured cards from a suitable 'camouflage' background
- has limitations, as it cannot exactly reproduce the situation