

Box 1: Keywords

Word	Definition
Adaptation	Characteristic that helps an organism to survive in it's environment
Biodiversity	The variety of organisms living in an area
Chromosome	Long strand of DNA which contains many genes
Continuous variation	Characteristic that can take any values within a range of values
Discontinuous variation	Characteristic that can only be a certain value
DNA	Chemical that contains all the information to make an organism
Evolution	Development of species over time
Gene	Section of DNA that contains the information for a characteristic
Natural selection	Process by which organisms with the best characteristics that are most suited to the environment survive and reproduce

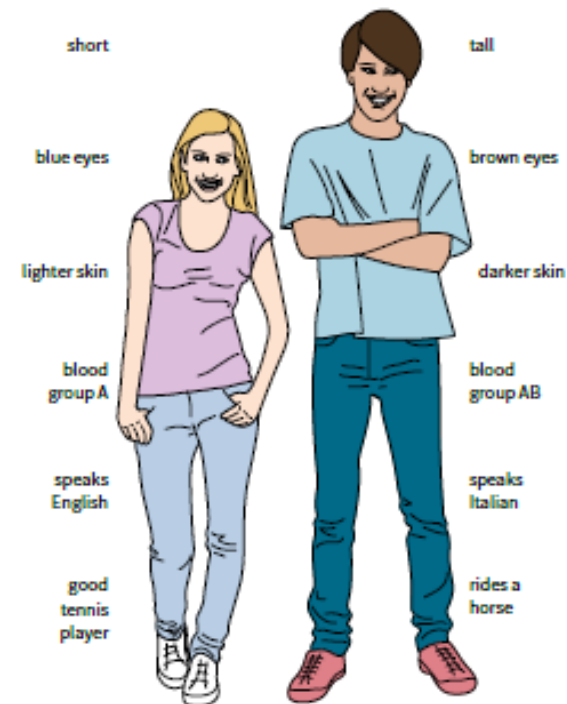
Box 2: Key skills

MS Which graph to choose and how to plot a bar chart
 WS Displaying results graphically

Box 3: variation

Variation is the difference in characteristics of individuals of the same species. Variation can be:

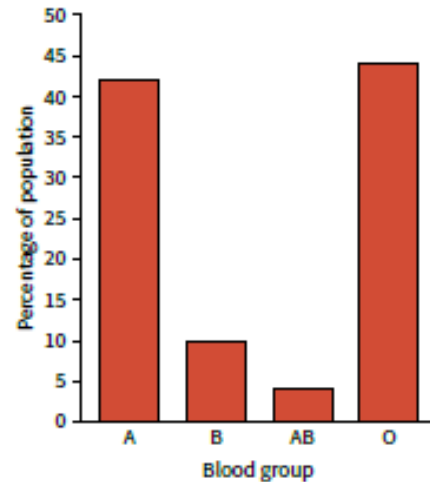
- **Inherited** – passed on from parents to offspring by genes e.g., eye colour.
- **Environmental** – caused by the surroundings and what has happened to you in your life e.g., getting a tattoo.



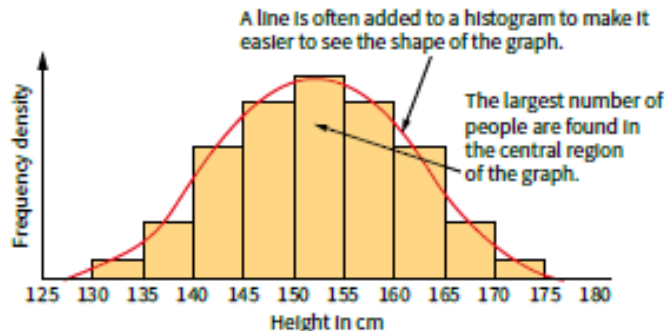
Many characteristics are affected by both inherited and environmental variation. For example, somebody may inherit the characteristic to be tall from a biological parent, but if they eat a poor diet their rate of growth may be reduced.

Box 4: Data

- **Discontinuous variation** – Fixed number of values e.g., Blood group. Display data in tables, pie charts, and bar charts.



- **Continuous variation** – Any value within a range e.g., height. Display data in tables, scatter graphs, histograms, and bar charts.



Box 5: Change

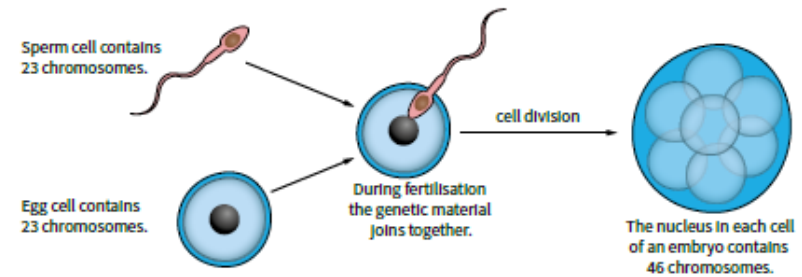
Natural selection is when individuals that are the best adapted survive and have offspring passing on the successful genes. This causes gradual change in a species over millions of years called evolution. Fossils are evidence of this.

When all of a species die it is called extinction. Maybe due to change in environment, destruction of habitat, new disease or new predators or competitors

Box 5: Inheritance

DNA (deoxyribonucleic acid) is genetic material stored in the **nucleus** of your cells. The structure of DNA was discovered by Crick, Watson, and Wilkins, who won the Nobel Prize for medicine in 1962. Their discovery was underpinned by the X-ray images from Rosalind Franklin.

The DNA is organised into **chromosomes**; different species have different numbers of chromosomes. Each section of a chromosome is called a gene.



Box 6: Pathway

KS1:- Plants and animals can be put into groups

KS2:-Living organisms vary; better adapted ones survive and breed

KS3:- Species evolve through natural selection

KS4 – Organisms can be classified by similarity in characteristics and evolutionary links

Careers:- ecologist, conservationists, geneticists, zoo keepers

Box 7: Cross curricular links