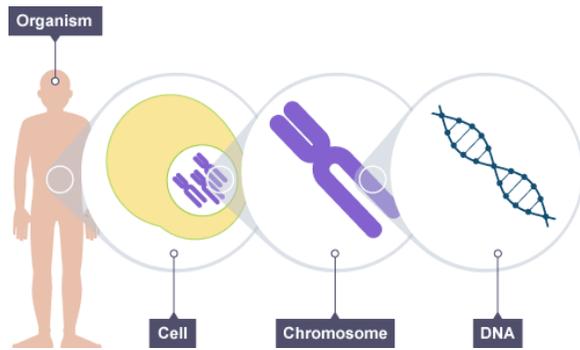
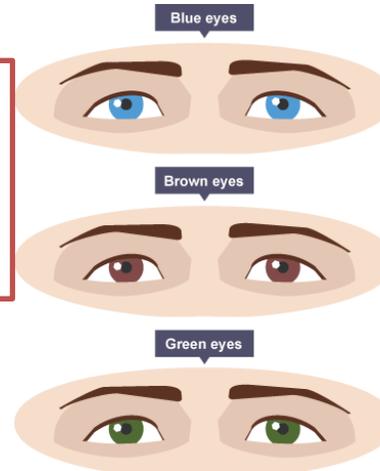


# Adaptation and Inheritance

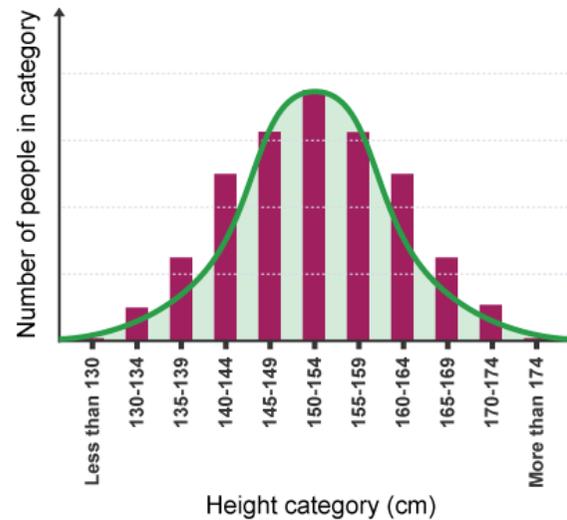
Know the facts		Key words	
1	Natural selection is a theory that explains how species evolve and why extinction occurs.	1	<b>Population:</b> Group of organisms of the same kind, living in the same place.
2	Biodiversity is vital to maintaining populations.	2	<b>Natural selection:</b> Process by which species change over time in response to environmental changes and competition for resources.
3	Within a species, variation helps adaption to environmental changes, avoiding extinction.	3	<b>Extinct:</b> When no more individuals of a species remain.
4	Within an ecosystem, having many different species ensures that resources are available for other populations.	4	<b>Biodiversity:</b> The variety of living things. It is measured as the differences between individuals of the same species, or the number of different species in an ecosystem.
5	A species may become extinct because they have been unable to adapt to changing conditions.	5	<b>Competition:</b> When two or more living things struggle against each other to get the same resource.
6	A lack of biodiversity can affect an ecosystem.	6	<b>Evolution:</b> Theory that the animal and plant species living today descended from species that existed in the past.
7	By preserving biodiversity, we can provide useful products and services for humans, such as drugs for disease.	7	<b>Adaptation:</b> Characteristic that helps an organism to survive in that environment.
8	If an organism is not able to change over time due to natural selection, their numbers will decrease.	8	<b>Interdependence:</b> a change in one species population affects the population of another. Both populations depend on each other.
9	You can inherit characteristics from your parents – this is your DNA.	9	<b>Variation:</b> Difference in characteristics within a species.
10	DNA is arranged into long strands called chromosomes. Each chromosome is divided into sections of DNA.	10	<b>Species:</b> organisms that have lots of characteristics in common, and can mate to produce fertile offspring.
11	The sections of DNA that contain the information to produce a characteristic are called genes.	11	<b>Continuous variation:</b> a characteristic that can take any value in a range, e.g. height.
12	All living things have a common ancestor, through the process of natural selection.	12	<b>Discontinuous variation:</b> a characteristic than can only have certain values, e.g. eye colour.
		13	<b>Gene Bank:</b> a place where genetic samples from different species are stored.



Children usually look a little like their father, and a little like their mother, but they will not be identical to either of their parents. This is because they get half of their DNA and inherited features from each parent.



A gene is a section of DNA that is responsible for a characteristic like eye colour or blood group. Humans have around 20,000 genes.



Here are some examples of inherited variation in humans: eye colour, hair colour, skin colour, gender.

Variation caused by the surroundings is called environmental variation. Here are some other examples of features that show environmental variation: your language, your religion, flower colour in hydrangeas (these plants produce blue flowers in acidic soil and pink flowers in alkaline soil)

Human height is an example of continuous variation. It ranges from that of the shortest person in the world to that of the tallest person. Any height is possible between these values.

Discontinuous variation  
A characteristic of any species with only a limited number of possible values shows discontinuous variation. Here are some examples: blood group, sex (male or female), eye colour

