

Year 8 Adaptation and Inheritance Knowledge Organiser





Natural selection and evolution		
Biodiversity	The total different number of species in an ecosystem. More biodiversity is a good thing.	
Natural selec- tion	"The survival of the fittest" The organisms that is best adapted will survive longer and pass on their genes to the next generation	
Evolution	Natural selection over long periods of time leads to permanent adaptations	
Fossils	Provide evidence of evolution	
Extinction	When every single organism of a species dies. Often cause by environmental disaster, disease or predator.	

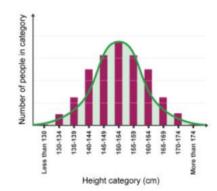
2. The organisation of DNA in humans Organism Chromosome Each cell with a nucleus contains chromosomes, which are made from DNA

	The basic unit of ge-
	netic material inherited
	from our parents. A
Gene	gene is a section of
	DNA which controls
	part of a cells chemis-
	try.

Variation Difference between individuals. Continuous Variation between individuals. Variation variation between two extremes. They can be measured. E.g. Hand Span Discontinuous Differences between individuals in a characteristic that can only be put into different categories E.g. Eye colour Environmental Differences between individuals of a species due to factors in their surroundings

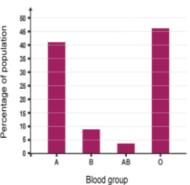
Continuous Variation

Human height is an example. It ranges from the smallest person on Earth to the tallest. Continuous variation shows characteristics that change gradually over time.



Discontinuous Variation

A characteristic of any species with only a limited number of possible values. Eye colour and blood group are examples.



4. Natural Selection leading to evolution

Evolution

Change in the inherited characteristics of a population over time through a process of natural selection, which may result in the formation of a new species.

The theory of evolution by natural selection states that all species of living things have evolved from simple life forms that first developed more than three billion years ago.

Natural selection of variants that give rise to phenotypes best suited to their environment.

- Variation (mutation)
- Adaptation
- Survival

& Reproduction