

Year 8 - Science - Summer Term - Biology – Key terms and Checklist

Keyword List	Definition
Population	All the individuals of the same species in an area/habitat
Natural Selection	The process by which useful characteristics are passed on to the next generation It is the process which results in evolution.
Variation	Differences between living things of the same species is called variation
Extinct	When there are no more living examples of a species
Competition	Happens when organisms need the same resources to survive.
Evolution	The gradual change in a species over time
Survival of the fittest	The organisms which are adapted well to the environment survive.
Biodiversity	The range of organisms in an ecosystem
Conservation	Ways which we protect species so that they do not go extinct
Gene bank	Keeps genetic material stored for the future for example seedbanks in Kew
Captive breeding	Where organisms are bred in zoos, safari parks and aquarium to be released into the wild

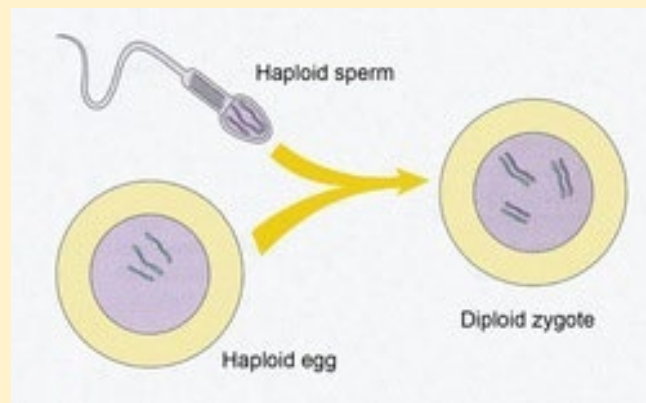
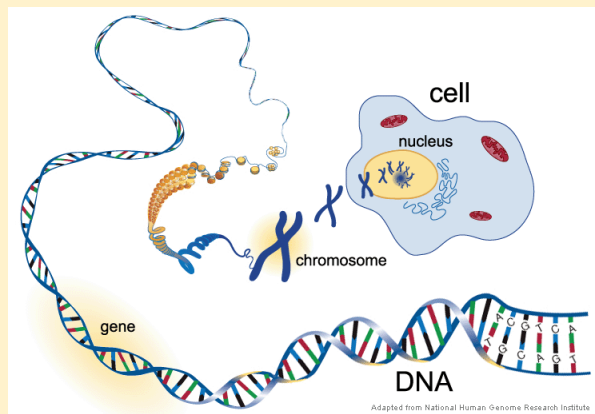
Biology term 3 checklist	✓
Know what evolution	
Know that evolution is the result of natural selection	
Define extinct and identify some extinct species	
Recall factors that can lead to extinction	
Recall the term biodiversity	
Describe the importance of biodiversity within an ecosystem	
Identify the links between biodiversity and products and services for humans	
Recall the term conservation	
Identify the role of gene banks and captive breeding in conservation	

Biology - Inheritance

INHERITANCE - An inherited characteristic is controlled by genes and is passed on from parents to offspring in DNA.

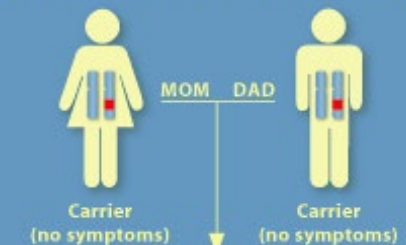
Body cells contain a pair of each chromosome – one from each parent. In sexual reproduction, gametes (egg and sperm cells) each contain one copy of each chromosome.

These join together at **fertilisation**.



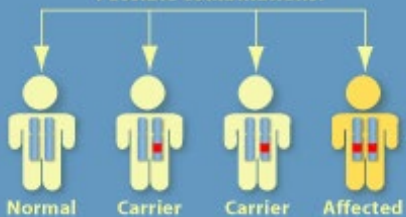
Mutations are changes in DNA and can cause certain genetic conditions such as cystic fibrosis.

Autosomal Recessive Inheritance



Each child inherits one copy of the gene from Mom, and one copy from Dad

Possible combinations:



Legend:
 [Blue bar] Autosomal (non-sex) chromosome with normal copy of gene
 [Red bar] Autosomal chromosome with defective copy of gene

Biology – Variation

Variation

Variation is the differences between all living organisms.

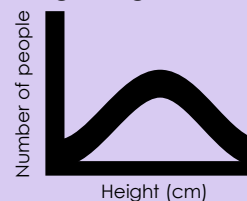
It happens because of our **genes** in our DNA.

- It can also result from environmental effects



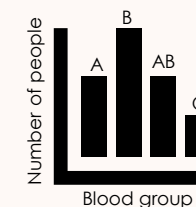
Continuous variation

Continuous variation – where a characteristic can have any value within a range. E.g. height or weight



Discontinuous variation

Discontinuous variation – where a characteristic can only have a certain value. E.g. blood or eye colour



Natural Selection

The process by which a characteristic increase or decreases in a population gradually.



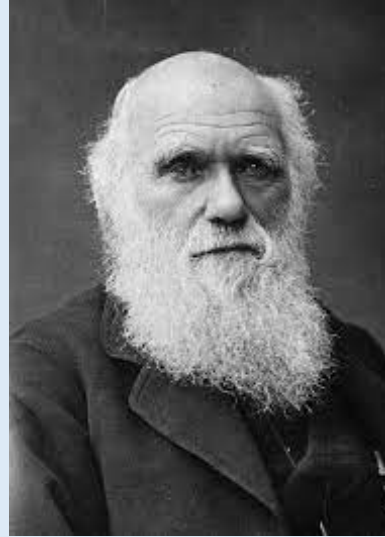
The scientist that discovered natural selection was called **Charles Darwin!**

Biology – Evolution

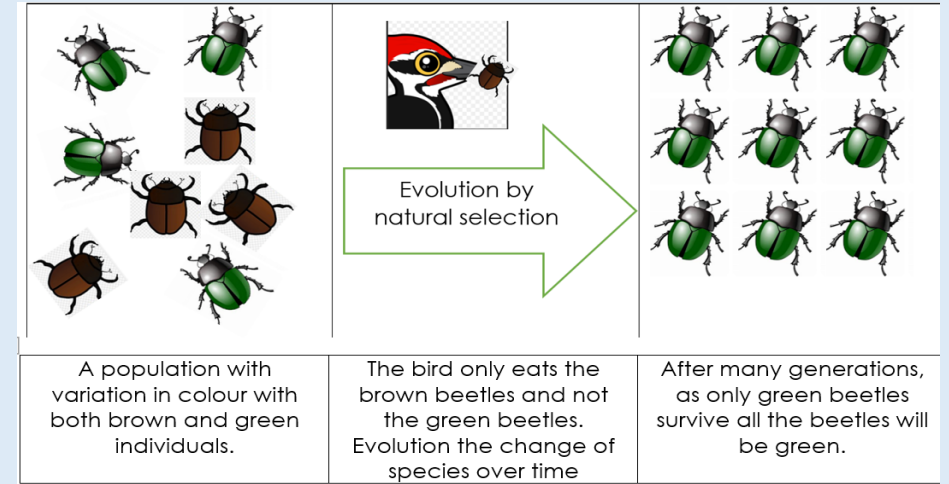
Evolution by natural selection

This is a picture of **Charles Darwin**.

He was the founder of the theory of evolution by natural selection!



The diagram shows how natural selection results in the evolution of species.



Extinction of species

Extinct means that there are no living examples of a species.

The animals below are all extinct.



The dodo bird



The woolly mammoth



The Tyrannosaurus Rex (T REX)

Organisms become extinct when they are **no longer adapted to their environment**. This is usually when the environment changes.

An example is the extinction of the dodo. When humans came to their island, they cut cutting down trees and hunted the dodo.

Biodiversity

BIODIVERSITY - Is a measure of the number of species in an ecosystem



We try to protect biodiversity by preventing the extinction of species for example:

- Captive breeding programmes in zoos and safari parks
[Click to learn about captive breeding at London zoo](#)
- Gene banks
[Click to learn about plant gene banks](#)

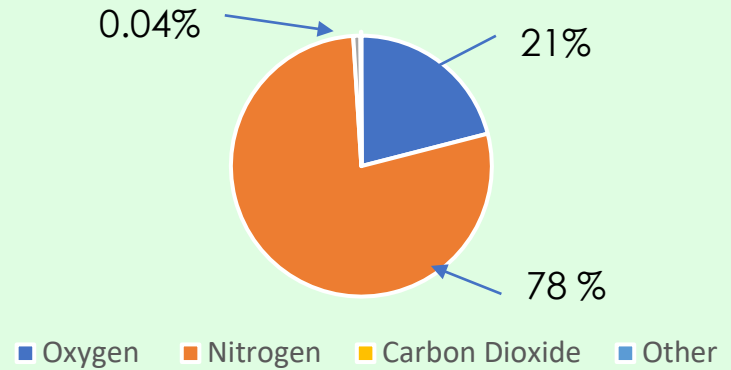
Chemistry - keywords and checklist

Chemistry term 3 checklist	✓
Be able to recall the gases that make up our atmosphere	
State the equation for photosynthesis	
Identify the 4 processes involved in the carbon cycle	
Describe the process of the greenhouse effect	
Name a greenhouse gas	
Discuss how human activities contribute to global warming	
Explain how we can alter our activities to reduce our impact on our climate	

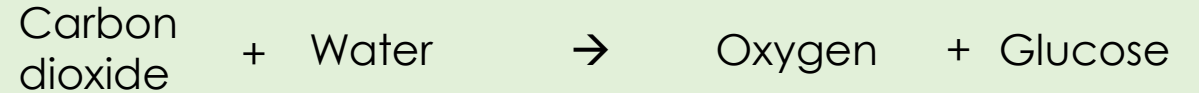
Keyword List	Definition
Atmosphere	a thin layer of gases surrounding the planet
Greenhouse gas	a gas that absorbs and emits thermal energy (CO ₂ , CH ₄ , H ₂ O)
Greenhouse effect	gases in the Earth's atmosphere trap thermal (heat) energy
Climate change	The rapid warming of our atmosphere
Photosynthesis	plants absorb carbon dioxide and water and use light energy to convert this into glucose and oxygen
Respiration	a chemical reaction that releases energy from glucose and releases carbon dioxide
Combustion	the scientific name for burning fuels
Decomposition	breaking down dead organisms and waste material into the chemicals that make them up

Chemistry - Climate

Gases in our atmosphere



Photosynthesis – removes CO₂ from the atmosphere



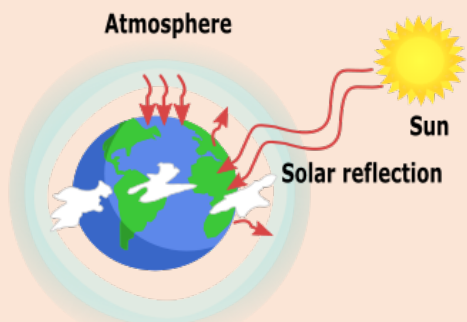
Respiration – adds CO₂ to the atmosphere



Combustion (burning) – adds CO₂ to the atmosphere

Decomposition (break down) – adds CO₂ to the atmosphere

Chemistry - Climate



The greenhouse effect is how our atmosphere keeps us warm enough to live. Greenhouse gases (CO_2 , CH_4) absorb and emit thermal energy around the planet.

Global warming is occurring because we are adding too many greenhouse gases to the atmosphere. This is **trapping too much thermal energy** and causing increasing temperatures and extreme weather conditions.

The Greenhouse Effect

Human activities are driving climate change. The population is increasing rapidly and providing for the population is adding more greenhouse gases to the atmosphere.



We can reduce our impact by decreasing our carbon footprint.

Check out ways you can do this here

https://youth.europa.eu/get-involved/sustainable-development/how-reduce-my-carbon-footprint_en

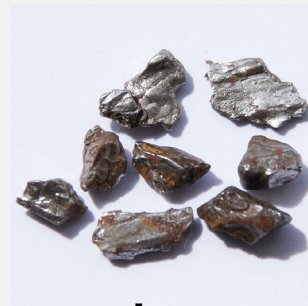


Chemistry – Earths resources

Resources

The Earth is the source of all our resources.

Metals can be extracted from the Earth. Some metals include:



Iron



Aluminum



Copper

Recycling

Recycling is when we take old, unwanted products and use them to create new products.

Recycling is good because:

- 1 Uses less resources from earth
- 2 Uses less energy
- 3 Saves money
- 4 Makes less garbage (landfill)

