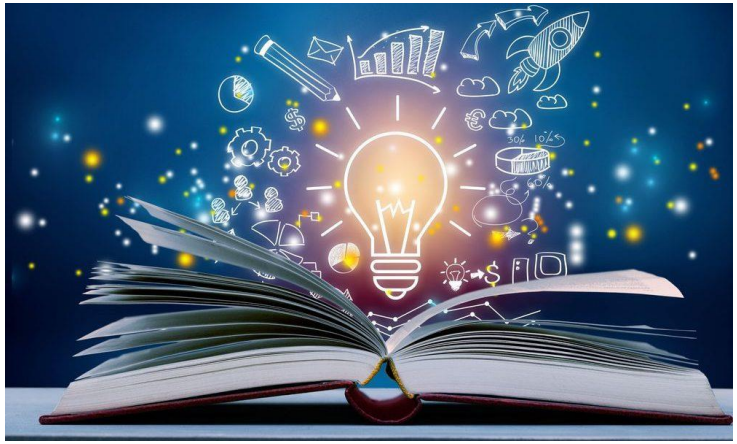
Dorset Studio School
CENTRE OF EXCELLENCE FOR ENVIRONMENTAL SCIENCES

Knowledge Organiser Booklet

Year 9 Summer Half Term 2



‘Knowledge is the key to understanding, Understanding is the key to achieving’
Penelope V. Yorke

Name:_____ Tutor group:_____

Contents

Research carried out by the Education Endowment Foundation proved that: Homework has a positive impact on average of + 5 months, particularly with pupils in secondary schools.

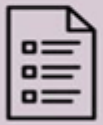
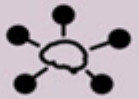
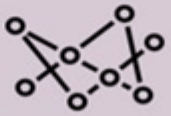
Home learning timetable

The table below details which days each subject will set home learning on each week. Students will have one week to complete home learning tasks for each subject.

Group	Monday	Tuesday	Wednesday	Thursday	Friday
9N	Chemistry Physics	English Biology	Animal Care	Maths Reading	Land based Humanities
9E	Biology Reading	Chemistry Physics	Land based English	Maths	Animal Care Humanities
9W	Reading	Chemistry Biology	Land Based English	Maths Physics	Animal Care Humanities

These knowledge organisers have been created by your teachers to support your learning both in class and for home learning. They are also a valuable revision tool for you to use independently when preparing for assessments. It is important that you make good use of your knowledge organisers by learning how to use them in different ways.

How to use a knowledge organiser – step by step guide

	Look, Cover, Write, Check	Definitions of Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	Look at and study a specific area of your KO. 	Write down the key words and definitions. 	Use your KO to condense and write down key facts or information onto flash cards. 	Use your KO to create a mini quiz. Write down your questions using your KO. 	Create a mind map with all the information you can remember from your KO. 	Ask a friend or family member to have the KO or flash cards in their hands. 
Step 2	Cover or flip the KO over and write down everything you can remember. 	Try not to use your KO to help you. 	Add pictures to help support. Then self-quiz using the flash cards. You could write questions on one side, and answers on the other! 	Answer the questions and remember to use full sentences. 	Check your KO to see if there are any mistakes on your mind map. 	They can test you by asking you questions on different sections of your KO. 
Step 3	Check what you have written down. Correct any mistakes in green pen and add anything you have missed. Repeat. 	Use your green pen to check your work. 	Ask a friend or family member to quiz you on the knowledge. 	Ask a friend or family member to quiz you using the questions. 	Try to make connections, linking the information together. 	Write down your answers, 

GCSE POETRY ANTHOLOGY – War

English – Year 9 – Summer 2

6.1 – Writing about Poetry / Poetic Terms

Find the Meaning	What happens, what is the poem about, how does the speaker feel?
Language	What techniques are used? To what effect?
Imagery	What are the main images in the poem? Are any repeated?
Rhythm/Structure	Is there a rhyme scheme? Does it flow? Is it a specific type of poem?
Themes	What overall big ideas and messages does it explore?

Paragraph Structure

Point

Evidence

Effect on the reader

Link back to the question or context

Repeat for second poem

The poet presents the idea that…

In the line '_____'

This suggests/implies/depicts
It makes the reader envision / imagine / sympathise

The poet was inspired by ------ which links the message that

Poetic Terms

Stanza – paragraph in a poem
Enjambment – when the sentence runs over a line or stanza
Caesura – breaks in the middle of a line of poetry, for example a full stop or colon
Free Verse – when the poem does not follow a particular rhythm or rhyme scheme
In medias res – when the poem starts in the middle of action
Meter - a regular pattern of stressed and unstressed syllables that defines the rhythm in a poem

6.2 – 'Disabled' By Wilfred Owen

SUMMARY:
A young, injured soldier sits isolated in a hospital and mournfully reflects on his decision to go to War. He remembers his happy life before the war and compares it with his bleak future.

TITLE:
Immediately presents the idea of loss and vulnerability. This is how he sees himself now; it is his identity – someone who is no longer able to do things.

KEY QUOTES:
'He sat in a wheeled chair waiting for dark' – metaphor
'boys' 'girls' 'play' 'youth' / 'grey' 'queer' 'disease' 'old' - juxtaposition
'He wonders why…' ellipsis, caesura
'Smiling they wrote his lie; aged nineteen years' – caesura
'Why don't they come/ And put him to bed? Why don't they come?' – repetition, enjambment, metaphor

STRUCTURE & FORM:
Caesura & enjambment fracture the poem to reflect his emotions and his broken state
Iambic pentameter – creates sense of monotony
Irregular rhyme – reflects the lack of harmony he feels

CONTEXT:
1st hand experience of war - serving soldier in WW1
Angry at the propaganda used to inspire young men to join up
Spent time in Craiglockhart military hospital
Was returned to the front line and tragically died one week before the war ended

THEMES:
Violence and brutality of conflict
Effect of conflict
Futility of war
Loss of self / identity
Power of memory

6.3 – 'Remains' By Simon Armitage

SUMMARY: A soldier deals with the aftermath of killing a looter who was raiding a bank during a conflict in the Middle East. While the war is traumatic, the mental consequences are arguably much greater.

TITLE:
Refers to both physical remains / bodies created by war , but also what remains in the soldiers mind. He is haunted.
Implies the soldier has lost himself, and only part of him 'remains'

KEY QUOTES:
'probably armed, possibly not' – *adverb, repetition*
'tosses his guts back into his body. Then he's carted off in the back of a lorry' – *imagery, colloquial language, symbolism*
'dug in behind enemy lines'– *military metaphor*
'his bloody life in my bloody hands' – *repetition, symbolism, colloquial language, possessive pronoun*

STRUCTURE & FORM:
Regular stanzas– gives the illusion of order and organisation even though this is not the case
Free verse – reflects the personal voice of the soldier, storytelling, taken from an interview
First person narrator – true account of Guardsman Tromans. However, could be applied to many soldiers in combat

CONTEXT:
Iraq War – American invasion in Middle East after 9/11 terrorism
PTSD – psychological trauma caused by distressing event
Simon Armitage– collection called 'The Not Dead,' accompanied by TV documentary

THEMES:
Violence and brutality of war
Internal conflict
Effect of conflict – death / suffering
Powerful emotions e.g. guilt
Power of memory

6.4 – 'War Photographer' By Carol Ann Duffy

SUMMARY: A war photographer returns home and starts to develop the photographs he has taken. Revisiting the photos reminds him of his trauma and the suffering he photographed, leading him to question his role and the nature of war.

TITLE:
Specific role, outside of the battle. He is close to the action and suffering but not involved. Clear the poem is about him, not the subjects of the photographs- war affects everyone it touches.

KEY QUOTES:
'spools of suffering– ***sibilance***
'as though this were a church and he a priest' – ***religious imagery***
'a half-formed ghost' – ***metaphor***
'to do what someone must'– ***modal verb***
'The reader's eyeballs prick / with tears between the bath and pre-lunch beers' – ***verb, plosive alliteration, preposition, rhyming couplet***
He earns his living and they do not care'

STRUCTURE & FORM:
Regular rhyme ABBCDD – reflects the regularity of life at home and juxtaposes the chaos and trauma of war.
Iambic pentameter – personal, conversational, sharing memories
Third person narrator – distanced from war but still inside the mind of the photographer to show his trauma

CONTEXT:
Vietnam War, Irish Troubles– poem makes reference to modern conflicts and key images from them e.g. Napalm Girl
Carol Ann Duffy – first female poet Laureate, inspired by friendship with war photographers

THEMES:
Violence and brutality of conflict
Internal conflict
Futility of war
Effect of conflict- suffering
Power of memory

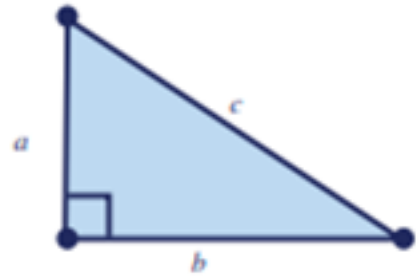
Geometry: Plans and Elevations

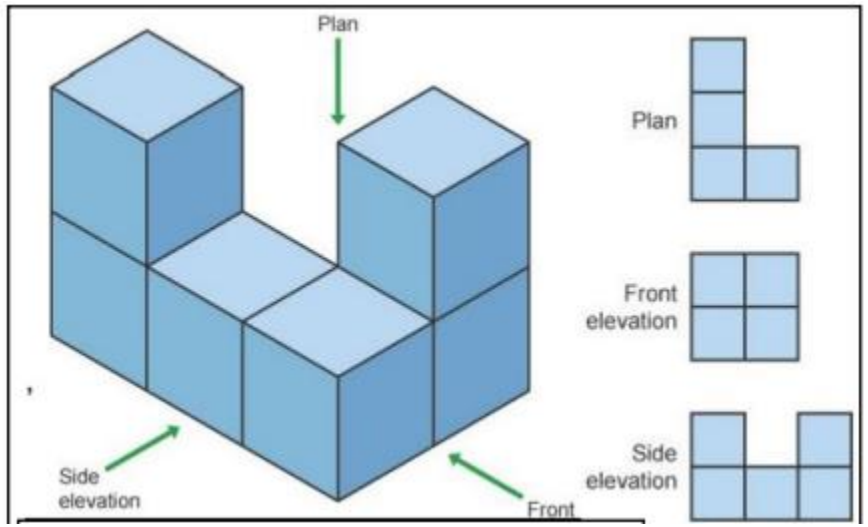
Year 9 Maths - Summer 2

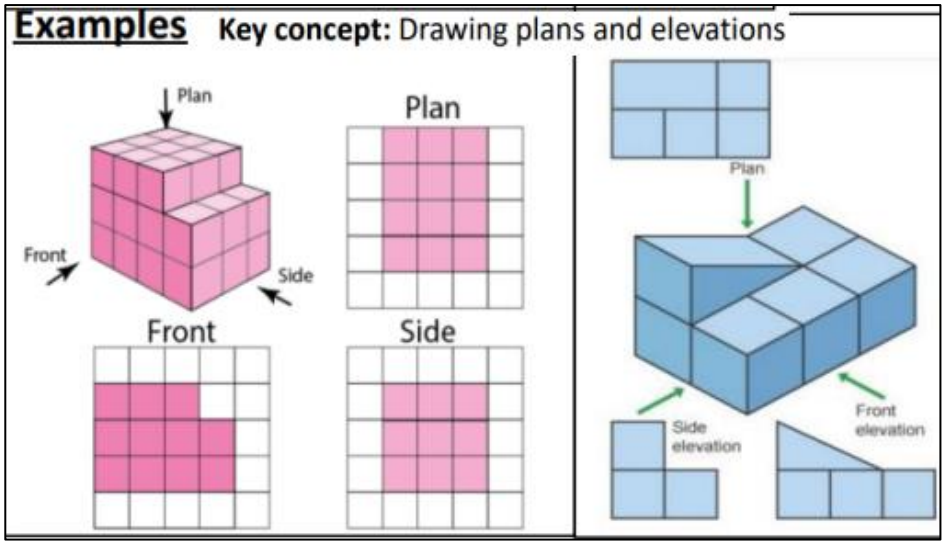
Key Term	Definition
Properties of Solids	Faces = flat surfaces Edges = sides/lengths where faces meet Vertices = corners where edges meet
Plans and Elevations **Plan View** **Side Elevation:** **Front Elevation**	This takes 3D drawings and produces 2D drawings. from **above** from the **side** from the **front**

Key Term	Definition
Surface area	The total area of all the faces of a 3D shape
Surface area of a cylinder	$A = 2\varpi rh + 2\varpi r^2$
Volume of a prism	V = Area of Cross Section x Length

Key Term	Definition
Right angled triangle	A triangle that contains a 90° angle
Hypotenuse	The longest side - opposite the right angle
Pythagorus' Theorem	For any right angled triangle, the area of the square of the longest length (the hypotenuse) is equal to the area of the squares of the two shorter lengths added together. $c^2 = a^2 + b^2$ $a^2 = c^2 - b^2$ $b^2 = c^2 - a^2$

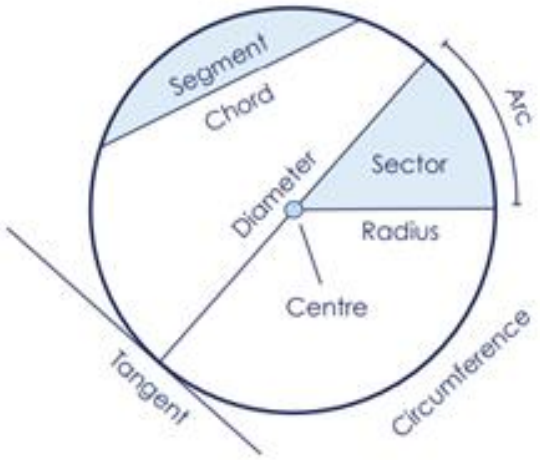






Geometry: Circles

Year 9 Maths: Summer 2

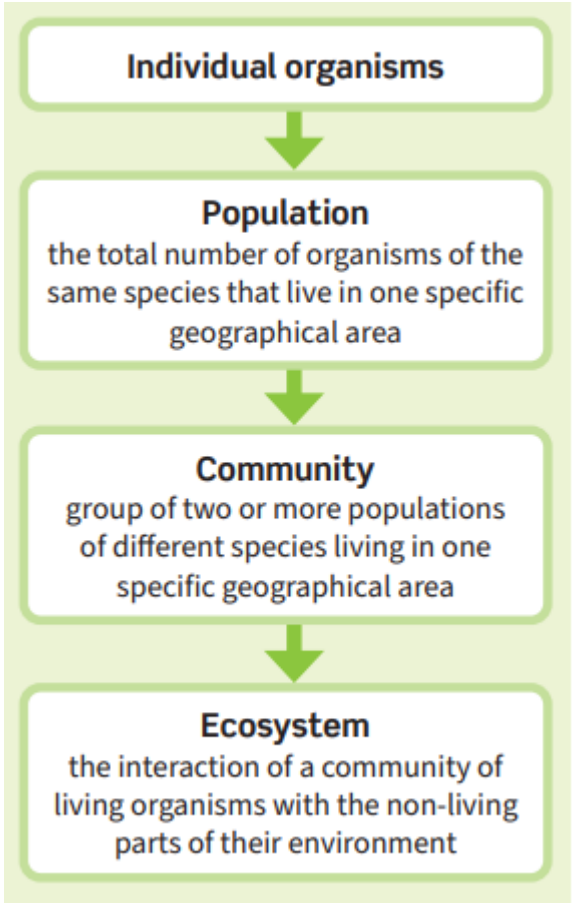
Key Term	Definition
Parts of a circle	
Arc	A section of the circumference
Sector	The area bounded by two radii and an arc
Chord	A straight line joining any two parts of the circumference
Circumference	The distance around the outside of the circle
Diameter	A straight line going from one end of the circle to another passing through the centre
Segment	The area bound by the circumference and a chord
Tangent	A straight line that touches the circumference at a single point
Pi (ϖ)	The ratio of a circle's circumference to its diameter

Calculating circumference and perimeter

Key Term	Formula
Circumference	The perimeter of the circle. C = ϖd
Radius	Diameter ÷ 2
Diameter	2 x radius
Perimeter of semi circle	$p = \frac{\pi d}{2} + d$
Perimeter of quarter circle	$p = \frac{\pi d}{4} 2r$
Perimeter of three-quarter circle	$p = \frac{3}{4}\pi d + 2r$
Length of an arc	$\frac{\theta}{360}\pi d$

Calculating area

Key Term	Formula
Area of a circle	$A = \pi r^2$
Area of a semi circle	$A = \frac{\pi r^2}{2}$
Area of a quarter circle	$A = \frac{\pi r^2}{4}$
Area of a three - quarter circle	$A = \frac{3\pi r^2}{4}$
Area of a sector	$\frac{\theta}{360}\pi r^2$



Interspecific competition is between organisms of different species and **intraspecific** competition is between organisms of the same species.

Abiotic factors are non-living factors in the ecosystem that can affect a community.

Too much or too little of the following abiotic factors can negatively affect the community in an ecosystem:

- carbon dioxide levels for plants
- light intensity
- moisture levels
- oxygen levels for animals that live in water
- soil pH and mineral content
- temperature
- wind intensity and direction.

Biotic factors are living factors in the ecosystem that can affect a community.

The following biotic factors would all negatively affect populations in a community:

- decreased availability of food
- new predators arriving
- new pathogens
- competition between species.

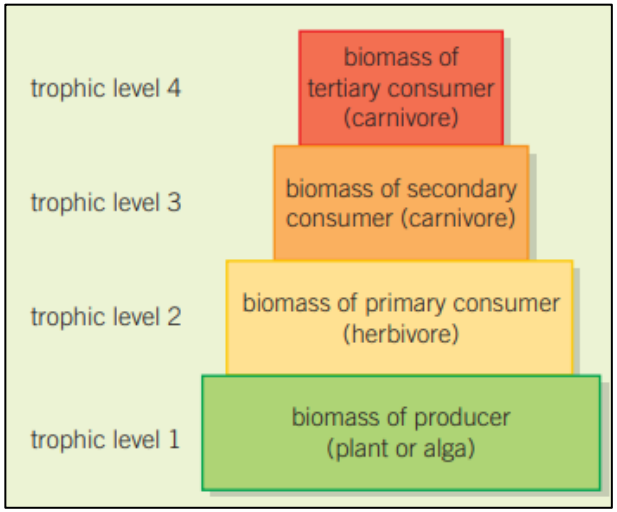
Organisms have features – **adaptations –** that enable them to survive in the conditions in which they live.

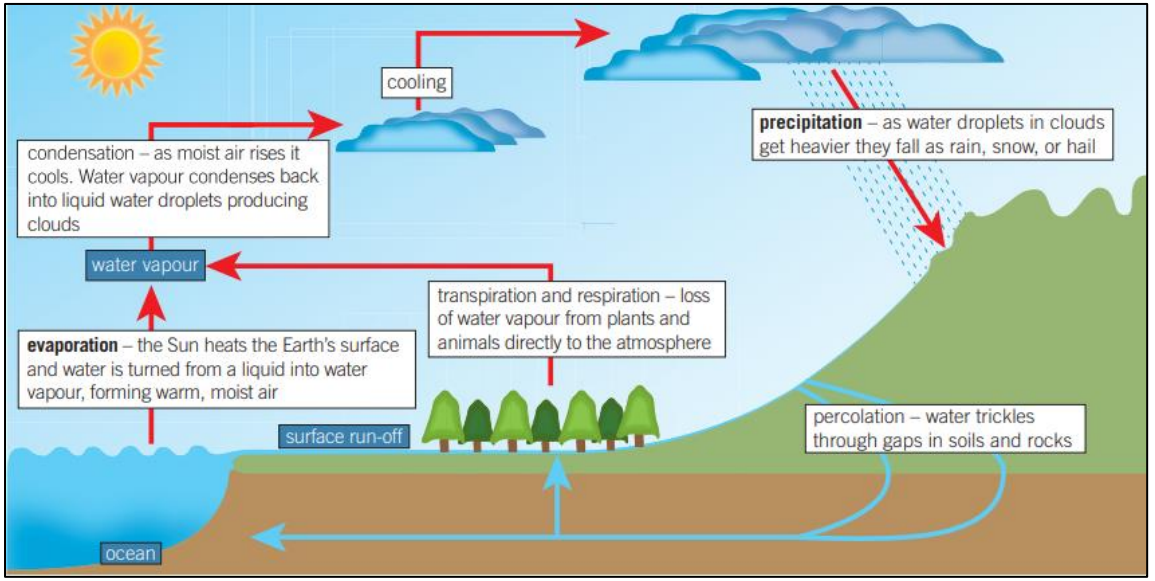
Structural adaptations
The physical features that allow an organism to successfully compete:
- sharp teeth to hunt prey
- colouring that may provide camouflage to hide from predators or hunt prey
- a large or small body-surface area-to-volume ratio.

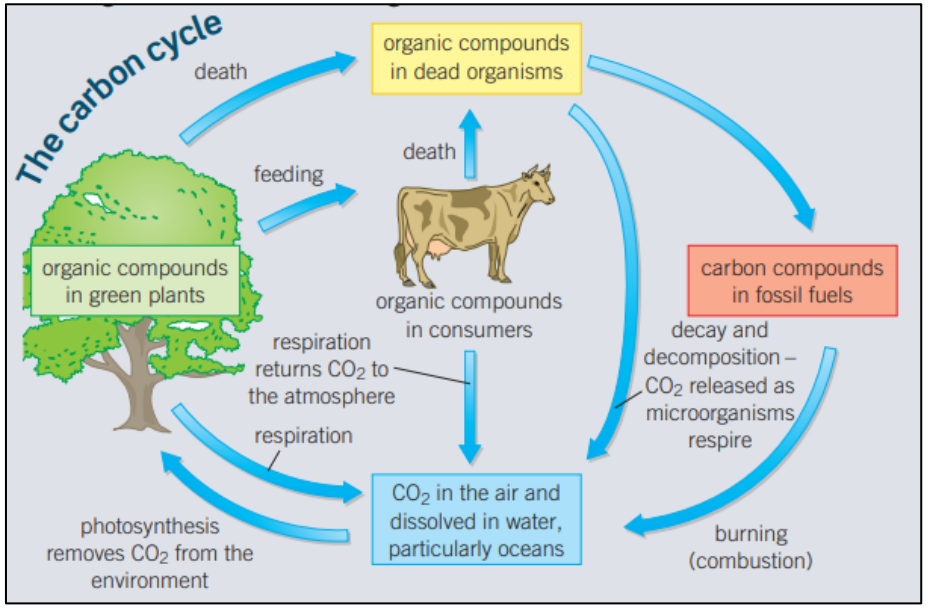
Behavioural adaptations
The behaviour of an organism that gives it an advantage:
- making nests to attract a mate
- courtship dances to attract a mate
- use of tools to obtain food
- working together in packs.

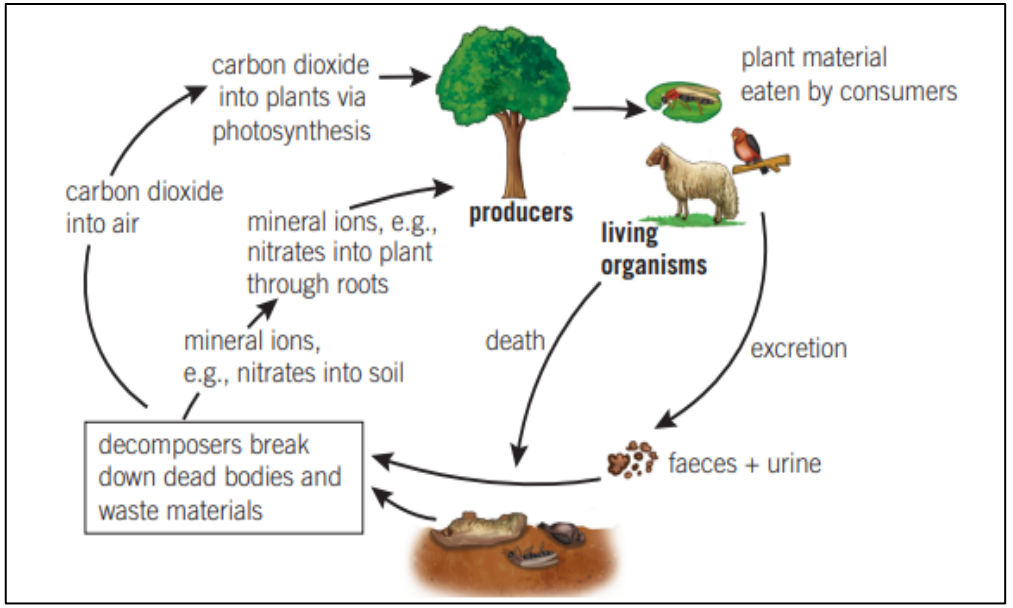
Functional adaptations
Adaptations related to processes that allow an organism to survive:
- photosynthesis in plants
- production of poisons or venom to deter predators and kill prey
- changes in reproduction timings.

Within a community each species interacts with many others and may depend on other species. If one species is removed it can affect the whole community – this is called **interdependence.**


trophic level 4
biomass of tertiary consumer (carnivore)
trophic level 3
biomass of secondary consumer (carnivore)
trophic level 2
biomass of primary consumer (herbivore)
trophic level 1
biomass of producer (plant or alga)


cooling
precipitation – as water droplets in clouds get heavier they fall as rain, snow, or hail
condensation – as moist air rises it cools. Water vapour condenses back into liquid water droplets producing clouds
water vapour
transpiration and respiration – loss of water vapour from plants and animals directly to the atmosphere
evaporation – the Sun heats the Earth's surface and water is turned from a liquid into water vapour, forming warm, moist air
surface run-off
percolation – water trickles through gaps in soils and rocks
ocean


The carbon cycle
death
organic compounds in dead organisms
feeding
death
organic compounds in green plants
organic compounds in consumers
carbon compounds in fossil fuels
respiration returns CO_2 to the atmosphere
decay and decomposition – CO_2 released as microorganisms respire
respiration
CO_2 in the air and dissolved in water, particularly oceans
photosynthesis removes CO_2 from the environment
burning (combustion)


carbon dioxide into plants via photosynthesis
plant material eaten by consumers
carbon dioxide into air
mineral ions, e.g., nitrates into plant through roots
producers
living organisms
mineral ions, e.g., nitrates into soil
death
excretion
decomposers break down dead bodies and waste materials
faeces + urine

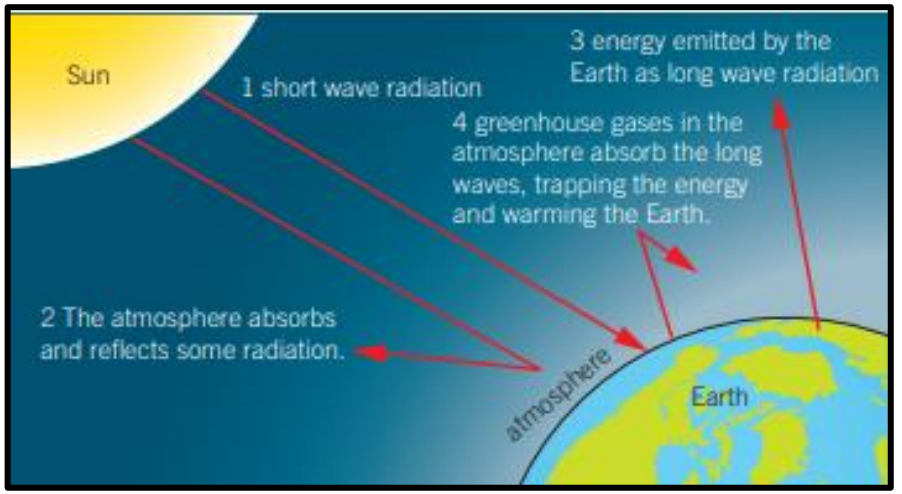
Period	Proportions of gases	Evidence
about 4.6 billion years to about 2.7 billion years ago	• **carbon dioxide, CO_2** Released by volcanoes. Biggest component of the atmosphere. • **nitrogen, N_2** Released by volcanoes. • **water vapour, H_2O** Released by volcanoes. Existed as vapour as Earth was too hot for it to condense. • other gases **Ammonia, NH_3** , and **methane, CH_4** , may also have been present.	Because it was billions of years ago there is very little evidence.
about 2.7 billion years ago to about 200 million years ago	• **water vapour, H_2O** Starts to decrease. As the Earth cools, the vapour condenses and forms the oceans. • **carbon dioxide, CO_2** Amount in atmosphere begins to reduce because: • water condenses to form the oceans, in which CO_2 then dissolves • algae (and later plants) start to photosynthesise : carbon dioxide + water → glucose + oxygen $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$ • **CO_2** precipitates in the oceans as solid carbonates (sediments) that form rocks • **CO_2** taken in by plants and animals. When they die, the carbon in them is locked up as fossil fuels • **oxygen, O2** Starts to increase as a product of photosynthesis. • **nitrogen, N_2** Continues to increase.	Still limited as billions of years ago, but can look at processes that happen today (like photosynthesis) and make theories about the past.
about 200 million years ago until the present	• **nitrogen, N2** about 80% • **oxygen, O_2** about 20% • **carbon dioxide, CO_2** about 0.04% • **water vapour, H_2O** Very little overall. • Small proportions of other gases such as the noble gases.	Ice core evidence for millions of years ago and lots of global measurements taken recently.

Greenhouse gases, such as **carbon dioxide**, **methane**, and **water vapour**, absorb radiation and maintain temperatures on the Earth to support life.
However, in the last 150 years, more greenhouse gases have been released due to human activities.
- carbon dioxide – combustion of fossil fuels, deforestation
- methane – planting rice fields, cattle farming

Scientists have gathered **peer-reviewed** evidence to demonstrate that increasing the amount of greenhouse gases in the atmosphere will increase the overall average temperature of the Earth.
This is called **global warming**.

Global warming leads to another process called **global climate change** – how the overall weather patterns over many years and across the entire planet will change.
There are many different effects of climate change, including:
- sea levels rising
- extreme weather events
- changes in the amount and time of rainfall
- changes to ecosystems and habitats
- polar ice caps and glaciers melting.

It is important to reduce the release of greenhouse gases into the atmosphere. The amount of carbon dioxide and methane that is released into the atmosphere by a product, person, or process is called its **carbon footprint**.



Pollutants released in combustion of fuels.		
Pollutant	Origin	Effect
carbon monoxide	**incomplete combustion** of fuels	colourless and odourless **toxic gas**
particulates (soot and unburnt hydrocarbons)	**incomplete combustion** of fuels especially in **diesel engines**	**global dimming**, **respiratory problems**, potential to cause cancer
sulfur dioxide	**sulfur impurities** in the fuel reacting with oxygen from the air	**acid rain** and **respiratory problems**
oxides of nitrogen	**nitrogen from the air** being **heated** near an engine and **reacting with oxygen**	**acid rain** and **respiratory problems**

Transverse Waves

The oscillations are **perpendicular** (at right angles) to the direction in which the waves **transfer energy**.

Ripples on the surface of water are an example of transverse waves.

Longitudinal Waves

The oscillations are **parallel** to the direction in which the waves **transfer energy**.

Sound waves are an example of transverse waves.

Electromagnetic (EM) waves are **transverse** waves that transfer energy from their source to an absorber.

They all travel at the **same velocity** through air or a vacuum. 3 x 10^8 m/s.

Property	Description	Unit
amplitude A	maximum displacement of a point on a wave from its undisturbed position	metre (m)
frequency f	number of waves passing a fixed point per second	hertz (Hz)
period T	time taken for one complete wave to pass a fixed point	second (s)
wavelength λ	distance from one point on a wave to the equivalent point on the next wave	metre (m)
wave speed v	distance travelled by each wave per second, and the speed at which energy is transferred by the wave	metres per second (m/s)

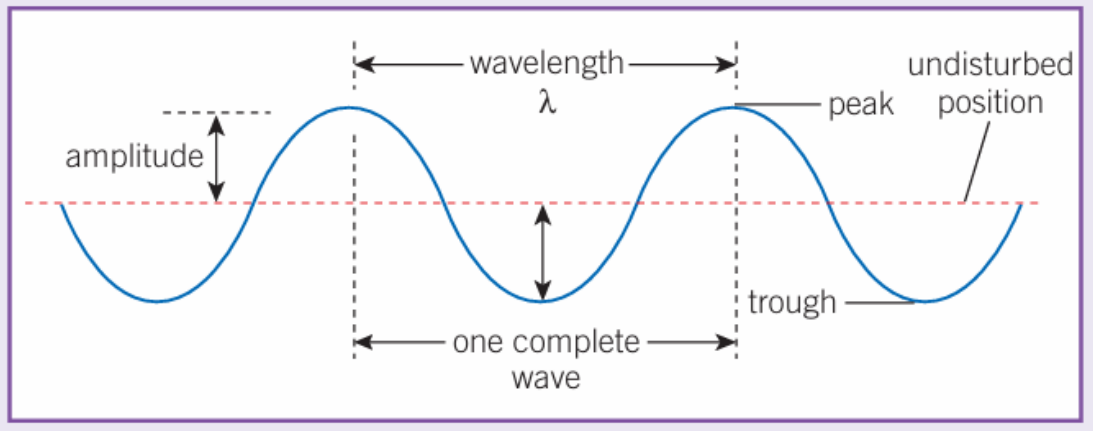
Period (seconds) = 1 ÷ Frequency (hertz)

Frequency (hertz)= 1 ÷ Period (seconds)

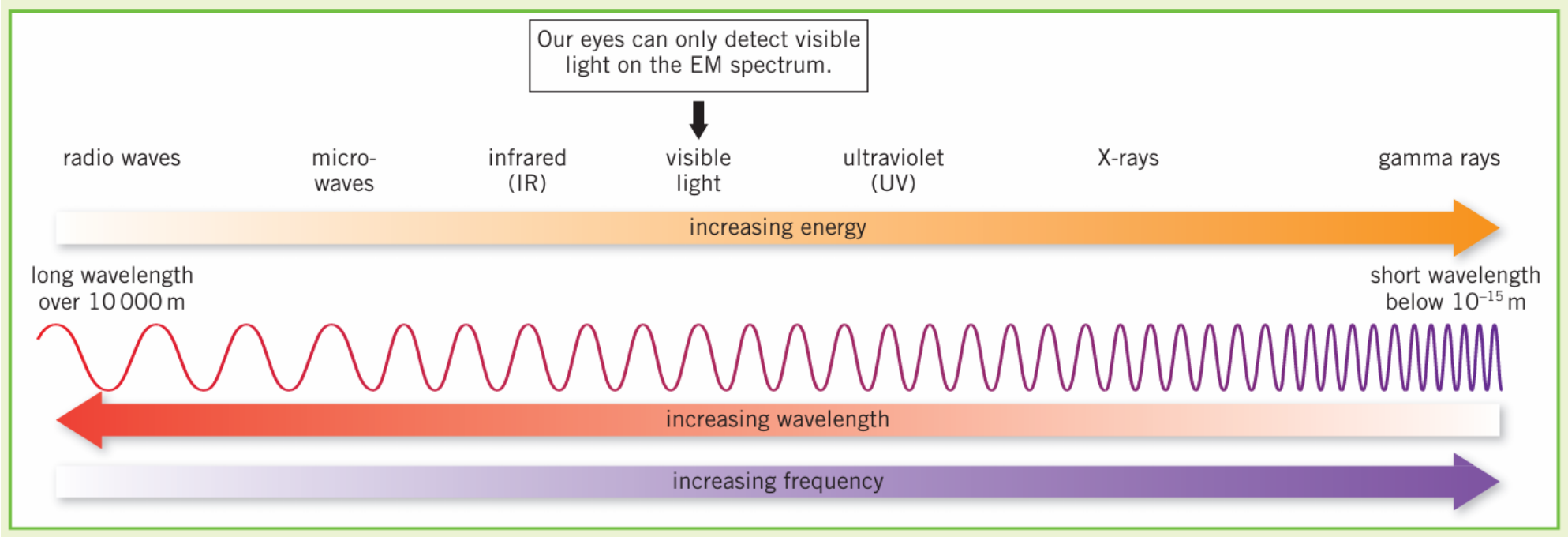
Speed (m/s) = Frequency (Hz) x Wavelength (m)

Frequency (Hz) = Speed (m/s) ÷ Wavelength |(m)

Wavelength (m) = Speed (m/s) ÷ Frequency (Hz)



When waves arrive at the boundary between two different substances, one or more of the following things can happen:
Absorption – the energy of the waves is transferred to the energy stores of the substance they travel into (for example, when food is heated in a microwave)
Reflection – the waves bounce back
Refraction – the waves change speed and direction as they cross the boundary
Transmission – the waves carry on moving once they've crossed the boundary, but may be refracted



Radio-waves and micro-waves can penetrate the body and cause internal heating.
Infrared can damage or kill skin cells due to heating.
Ultraviolet can damage skin cells (skin cancer) and cause blindness.
X-rays and gamma rays can penetrate the body and can damage or kill cells, cause mutations of genes and lead to cancers.

Speed is a scalar quantity. Has a magnitude. average speed (m/s) = total distance travelled (m) ÷ total time taken (s)

Some typical average speeds are: walking ≈ 1.5m/s, running ≈ 3m/s, cycling ≈ 6m/s

The speed of sound and the speed of the wind also change depending on the conditions. A typical value for the speed of sound is 300m/s

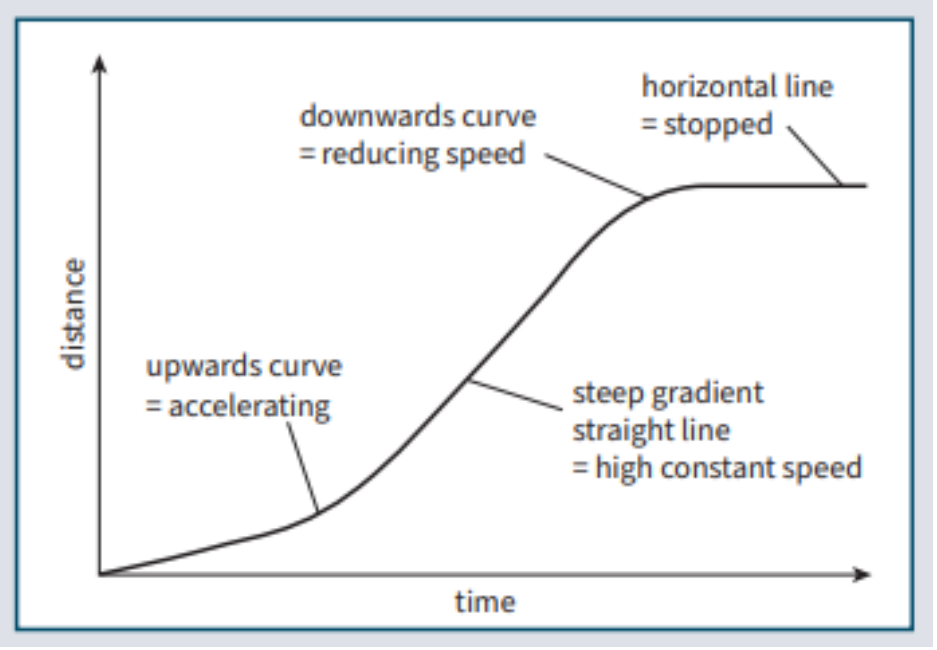
Velocity is a vector quantity. Has a magnitude and direction.

An object moving in a circle can have a constant speed but its velocity is always changing because its direction is always changing.

A distance–time graph shows how the distance travelled by an object travelling in a straight line changes with time.

The gradient of the line in a distance–time graph is equal to the object's speed.

If the object is accelerating, the speed at any time can be found by calculating the gradient of a tangent to the curved line at that time.



Hot Desert: Case Study Thar Desert – India/Pakistan

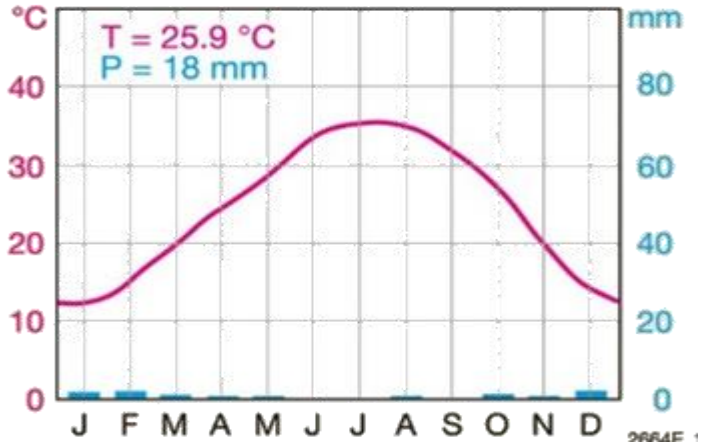
The Thar Desert is located on the border between India and Pakistan in Southern Asia. With India soon becoming the most populated country in the world in the next five years. With this, more people will plan to live in the desert.

Hot Deserts inhabitants

- People often live in large **open tents** to **keep cool.**
- Food is often **cooked** slowly in the **warm sandy soil.**
- **Head scarves** are worn by men to provide **protection from the Sun.**

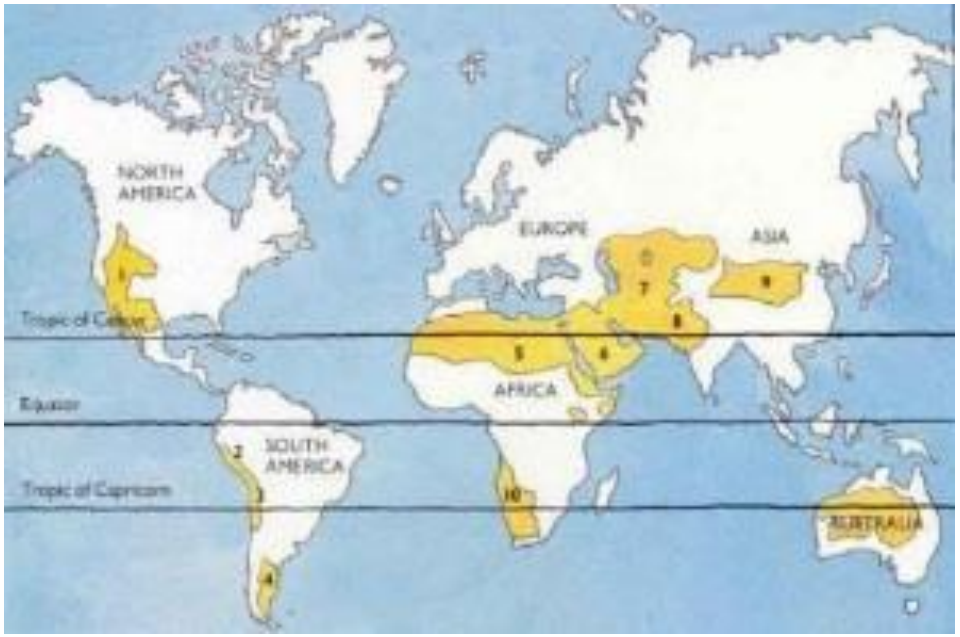
Climate of Hot Deserts

- **Very little rainfall** with less than **250 mm per year.**
- It might only **rain once every two to three years.**
- Temperate are **hot in the day** (45 °C) but are **cold at night** due to little cloud cover (5 °C).
- In winter, deserts can sometimes receive occasional frost and snow.



Distribution of the world's hot deserts

Most of the world's hot deserts are found in the **subtropics** between **20 degrees and 30 degrees north & south** of the Equator. The **Tropics of Cancer and Capricorn** run through most of the worlds major deserts.



Major characteristics of hot deserts

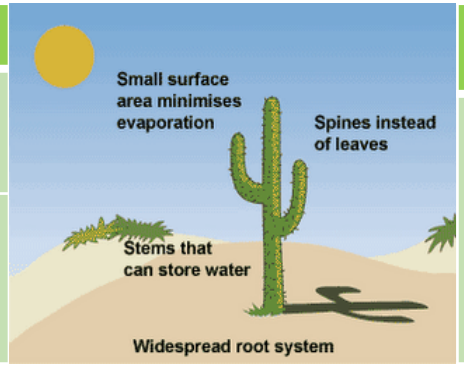
- **Aridity** – hot deserts are extremely dry, with annual rainfall below **250 mm**.
- **Heat** – hot deserts rise over **40 degrees.**
- **Landscapes** – Some places have dunes, but most are **rocky** with **thorny bushes.**

Hot Deserts

Year 9 Humanities: Summer 2

Adaptations to the desert

Cactus	• **Large roots** to absorb water soon after rainfall. • **Needles** instead of leaves to reduce surface area and therefore **transpiration**.
Camels	• Hump for storing **fat (NOT water).** • **Wide feet** for walking on sand. • **Long eyelashes** to protect from sand.



Desert Interdependence

Different parts of the hot desert ecosystem **are closely linked together and depend on each other**, especially in a such a harsh environment.

Opportunities and challenges in the Hot desert

Opportunities

- There are valuable minerals for industries and construction.
- Energy resources such as coal and oil can be found in the Thar desert.
- Great opportunities for renewable energy such as solar power at Bhaleri.
- Thar desert has attracted tourists, especially during festivals.

Challenges

- The extreme heat makes it difficult to work outside for very long.
- High evaporation rates from irrigation canals and farmland.
- Water supplies are limited, creating problems for the increasing number of people moving into area.
- Access through the desert is tricky as roads are difficult to build and maintain.

Causes of Desertification

Desertification means the turning of semi-arid areas (or drylands) into deserts.

Climate Change
Reduce rainfall and rising temperatures have meant less water for plants.

Fuel Wood
People rely on wood for fuel. This removal of trees causes the soil to be exposed.

Overgrazing
Too many animals mean plants are eaten faster than they can grow back. Causing soil erosion.

Over-Cultivation
If crops are grown in the same areas too often, nutrients in the soil will be used up causing soil erosion.

Population Growth
A growing population puts pressure on the land leading to more deforestation, overgrazing and over-cultivation.

Strategies to reduce Desertification

- **Water management -** growing crops that don't need much water.
- **Tree Planting -** trees can act as windbreakers to protect the soil from wind and soil erosion.
- **Soil Management -** leaving areas of land to rest and recover lost nutrients.
- **Technology** – using less expensive, sustainable materials for people to maintain. i.e. sand fences, terraces to stabilise soil and solar cookers to reduce deforestation.

How humans have changed the landscape?

Key Dates:

1600 -Enclosure Act
1750-1850 Agricultural Revolution
1914-1919 WW1
1939-1945 WWII
1947 - Agricultural Act
1973 – EU Common Market
1974 – Health & Safety Act
1981 – Wildlife and Countryside Act
2006 – Animal Welfare Act
2000 – CRoW Act

The Enclosure Act 1600 - 1900

The **Enclosure Act** (or more broadly, the process of **Enclosure**) refers to a series of laws and historical developments in **England**, primarily between the **16th and 19th centuries**, where **common land**—land shared collectively by rural communities for farming and grazing—was **privatized** and consolidated into **individual, fenced-off holdings**.

Before enclosure: Much of the land in rural England was held in common, meaning peasants could use it for grazing animals, collecting firewood, or growing crops.
Enclosure process: Wealthy landowners, often with government support, claimed common lands and fenced them off. Parliament passed many Enclosure Acts that legalized this process.
Legal support: The Parliamentary Enclosure Acts (especially during the 18th and 19th centuries) allowed landowners to enclose land legally with government approval.
Impact:
Increased agricultural efficiency (boosting the Agricultural Revolution).

Displacement of rural poor, who lost access to land and were often forced to move to cities, helping fuel the Industrial Revolution. Shift from subsistence farming to commercial agriculture.

https://www.youtube.com/watch?v=uedPl9vGt4c

Agricultural Revolution

The **Agricultural Revolution in the UK** refers to a period of significant change and improvement in farming practices that began in the **17th century** and continued into the **19th century**. It laid the foundation for modern agriculture and helped drive the **Industrial Revolution**.

New Farming Techniques	Higher yields
Townsend's Crop rotation: The **four-field system** (e.g., wheat, turnips, barley, clover) improved soil fertility and reduced fallow land. **Selective breeding**: Farmers like **Robert Bakewell** bred stronger, larger livestock. **New tools**: The **seed drill** by **Jethro Tull** allowed for more precise planting and less seed waste.	Higher yields meant more food with less labor. Supported growing populations and freed up workers for industrial jobs in cities. Higher yields meant more food with less labor. Supported growing populations and freed up workers for industrial jobs in cities.

Impacts of the Agricultural Revolution

Population growth (more food = better nutrition). **Urbanization** (displaced rural workers moved to cities). **Industrial Revolution** (more labor and capital available for factories). **Environmental changes** (more land under cultivation, loss of traditional village systems).	The Agricultural Revolution in the UK transformed farming from traditional methods to a more efficient, productive, and commercial system. It was a key factor in enabling the **Industrial Revolution** and shaping modern Britain.

History of the Landscape

World War I and II

Both World War I and World War II had lasting effects on the **landscape of the UK**, shaping its physical environment, urban development, and rural areas in distinct but connected ways. While the UK wasn't a major battleground, the wars left behind a wide range of visible and invisible changes.

WW1 effects on the landscape

1. War Memorials and Cemeteries
Almost every town and village built **memorials** to honor the dead. **Cemeteries** expanded and included graves for war casualties who died in the UK.

2. Military Infrastructure
Training camps, **airfields**, and **hospitals** were built, especially in rural areas.
Mock trenches and other military training structures were created (e.g. Cannock Chase, Salisbury Plain).

3. Deforestation
Huge amounts of **timber were cut** for trenches, ships, and pit props. Some forests never recovered or were replanted with fast-growing, uniform species (like Sitka spruce). The Government created the Forestry Commission in 1919 to regrow the nation's timber supply.

WWII impact on UK landscape

1.Military Installations
The countryside was filled with **airfields**, **radar stations**, **barracks**, and **munition factories**. Many **WWII airfields** still mark rural areas, some reused as airports, others abandoned.

2. Decoys and Deception Sites
"Starfish sites" were built to mimic burning cities and divert bombers from real targets.
Fake airfields, factories, and lights were used — often leaving subtle or hidden remnants.

3. Landscape Disruption and Scarring
Bomb craters (especially in the southeast), destroyed woodland, and training damage changed landscapes.

4. Agricultural Expansion
To cope with food shortages, **previously unused land** (moorland, parkland) was ploughed and farmed.
The countryside saw the impact of **the Women's Land Army**, with new land-use patterns.

6. Dig for Britain – parks and gardens were converted to allotments to provide fresh food to supplement rations.

The Agricultural Act 1947

The **Agriculture Act 1947** was a landmark piece of UK legislation passed after World War II that transformed British farming. It was introduced by the Labour government under **Clement Attlee** and aimed to ensure **food security**, **farm income stability**, and the **modernization of agriculture**.

Key Aims of the Agriculture Act 1947

Secure Stable Food Supply
Post-WWII, Britain still faced food shortages and rationing.
The Act aimed to **guarantee food production** at home to reduce reliance on imports.

Support Farmer Incomes
Introduced **price guarantees** and **subsidies** for key agricultural products.
This gave farmers **confidence to invest** and produce more.

Modernize British Agriculture
Encouraged use of **mechanization**, **scientific methods chemical fertilisers** and **land improvement**.

Impact on British Farming

Productivity increased significantly in the following decades.
Marked a shift toward **state-supported agriculture** — a major change from the pre-war market-driven model.
Contributed to the development of **intensive farming** and the **rural landscape we see today** (e.g., hedgerow removal, larger fields).
Agricultural Colleges were started.

Wildlife and Countryside Act 1981

Protecting Nature. Preserving the Countryside.

Protect Wildlife
Illegal to **kill, injure, or take** certain birds and animals
Protects **nests, eggs, and dens** (like badger setts and bat roosts)
Bans the release of **invasive non-native species**

Protect Habitats
Protects special areas called **SSSIs** (Sites of Special Scientific Interest)
Stops damage to rare or endangered ecosystems

Protect Access
Maintains **footpaths, bridleways**, and other public rights of way
Balances public access with nature conservation,
Breaking the Law Can Lead To:
- **Fines**
- **Prosecution**
- **Orders to fix damage**

Why It Matters:
This Act helps protect the UK's **wildlife and countryside** for future generations to enjoy.

The EU Common Market 1973

The **EU Common Market in 1973** refers to the United Kingdom joining the **European Economic Community (EEC)**—often called the "Common Market"—on **January 1, 1973**. The EEC became the modern European Union (EU) and aimed to create a **single market** among member countries, allowing for the **free movement of produce, services, money, and people**

• Positive impacts on UK farmers

Access to a Larger Market:
UK farmers could now sell their produce across Europe without tariffs.
This opened up profitable export opportunities, especially for cereal, dairy, and beef farmers.
Price Stability and Income Support (via CAP):
The **Common Agricultural Policy (CAP)** offered subsidies and guaranteed prices.
Many farmers received **higher incomes**, especially compared to the more volatile UK agricultural policy pre-1973.
Modernization Incentives:
EU funds supported investment in farming technology and infrastructure, improving efficiency and productivity.

• Negative impacts on UK farmers

Higher Food Prices for Consumers :CAP kept food prices artificially high to support farm incomes.UK consumers paid more for basic foods like butter, sugar, and meat than they would have under global market prices.
Regulatory Burdens: UK farmers had to comply with complex EU regulations, which could be costly or bureaucratically challenging, especially for small farms.
Shift in Farm Support System: The UK had to abandon its national system of subsidies and price supports in favor of the EU's CAP, which initially favored some types of farming (like continental cereal farming) more than others (e.g., upland sheep farming in the UK).

When the UK joined the EEC/Common Market in 1973, it marked a major shift in agricultural policy. **UK farmers benefited from subsidies and access to a wider market**, but faced **more regulation and a more rigid price system**. The impact was mixed, depending on the type of farming and region, but overall, many UK farmers initially **welcomed the financial stability** that came with EU membership.

Animal Welfare Act 2006

The **Animal Welfare Act 2006** is the law for the **protection of animals**. It updated and modernised existing animal protection laws and introduced new duties on owners and those responsible for animals.

The 5 Welfare Needs:
Proper Diet – Food and fresh water
Suitable Environment – Safe, comfortable shelter
Natural Behaviour – Space and freedom to move
Companionship – With or without other animals (as needed)
Protection from Pain – No suffering, injury, or disease

It Is Against the Law To:
✕ **Hurt** or abuse an animal
✕ **Neglect** or abandon it
✕ **Ignore its needs**

Who Enforces It?
RSPCA
Local councils
Animal welfare officers
Penalties:
Fines
Bans on owning animals
Prison (up to 5 years)

The National Parks Act 1949

What Was It?
A groundbreaking UK law that allowed for the creation of **National Parks** and **protected natural areas** in England and Wales.

Why It Mattered

✅ Preserved areas of natural beauty
✅ Protected wildlife and landscapes
✅ Gave the public rights to enjoy countryside access
✅ Encouraged outdoor recreation and conservation

Historical Context
Passed after **World War II**
Inspired by a growing movement for public access to the countryside
First National Park: **Peak District (1951)**

Key Features

🔷 Established National Parks and Areas of Outstanding Natural Beauty (AONBs)
🔷 Created Public Rights of Way (footpaths and bridleways)
🔷 Formed the National Parks Commission (now Natural England)
🔷 Promoted long-distance walking trails

Countryside Rights of Way Act 2000 (CRoW)

The **Countryside and Rights of Way Act 2000** (often called the **CROW Act**) is a significant piece of legislation in the UK that **enhanced public access to the countryside** and **strengthened protection for wildlife and public rights of way**.

Right to Roam (Open Access Land):

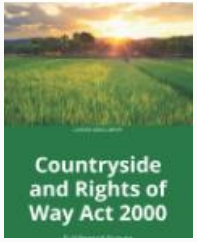
People are allowed to walk freely on **"access land"**, which includes: **Mountain, moor, heath, down**, and **registered common land**
They do not need to stick to paths or rights of way.
Activities allowed: **Walking, running, climbing, birdwatching**.
Activities *not* allowed: **Cycling, horse riding, camping, driving** (unless permitted).
2. Maps of Access Land:
The government created **official maps** showing open access land. Landowners can **appeal** if they believe land was wrongly classified.
Landowners can apply for **temporary closures** for land management, safety, or privacy.

Restrictions on Access:

Some sensitive areas may have **permanent restrictions** (e.g. near military sites or for wildlife conservation).
4. Public Rights of Way:
Improved the **maintenance and recording** of footpaths, bridleways, and byways.
Local authorities required to **review and update** maps of public rights of way.
Gave powers to **create new public rights of way** and protect existing ones.
5. Nature Conservation:
Strengthened the legal protection of **(SSSIs)**.
Increased penalties for damaging wildlife sites.
Gave more power to conservation agencies to enforce protection.

Why it matters

Expanded public access to the countryside while balancing the rights of landowners and the needs of conservation.
Encouraged **outdoor recreation**, exercise, and a connection to nature.
Helped preserve historic **footpaths and bridleways**, and protect wildlife habitats.



Animal Care

Animal Health and Welfare
Learners must understand what to look out for to determine whether an animal is well. They must know the signs of ill health that may need further investigation. Animal species covered in this learning outcome must include dogs, cats, rabbits, hamsters and guinea pigs.

KEY TERMS/ VOCABULARLY:
Palpation: examining an animal with the hands to check for problems.

Why is monitoring animal health important?

Moral responsibility:
We may feel we have a moral duty to prevent pain and suffering in an animal.

Legal obligation:
The Animal Welfare Act 2006 states the need to protect animals from pain, suffering, injury and disease.

Human benefit
Ensuring animals used for food production are healthy and free from disease will prevent illness through the food chain
Animals used in research may need to be protected from ill health to provide valid results
Animals used for their abilities, such as working animals and those used for sport, will need to be healthy in order to perform to the highest standards

How to record and monitor animal health

There are many ways to keep a record of an animal's health in order to monitor changes:

Journal/diary/folder
Whiteboard
Electronic database
Veterinary records
Photographs and videos.

Routine health checks and visual checks

Owners, keepers and qualified professionals may observe an animal to check for visual signs of health.
Animals show visible signs of health through their behaviour, mobility and temperament.

Routine health checks may include:

Checking a young animal's posture and movement to assess growth and joint development.
Checking older animals to assess their mobility.
Monitoring any changes in an animal's behaviour and temperament that could indicate pain.

Routine health checks: Physical checks

The following checks may be made by qualified professionals to diagnose conditions that may not be identified through the visual health check method:

Weighing
Checking blood pressure
Checking pulse rate
Assessing mobility
Checking temperature
Carrying out blood, urine and faecal tests
Palpation

Routine health checks: observation checks

An observation check is like a visual health check because the animal is not handled. Also, health factors are observed visually and recorded. But observation checks on an animal's behaviour and movement are normally carried out over a longer period of time.

This method is useful in cases with some animals, such as:
Very young animals
Aggressive animals
Venomous and poisonous animals.

Which aspects of health should be monitored?

A pregnant animal- Weight, heart rate, temperature, food and water intake and behaviour.

An older animal- Weight and food and water intake

An animal after surgery- Wound appearance, weight, temperature, food and water intake and behaviour

An animal with an injury
Wound appearance, weight, temperature, food and water intake, heart rate and respiratory rate

A venomous animal
Food and water intake and behaviour

Animal Health and Welfare

Year 9 BTEC Animal Care: Summer 2

Signs of good health

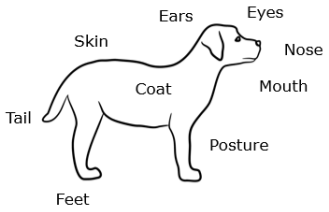
Main indicators of good health

Eyes: bright, clear pupils, response to movement
Ears: natural movement, response to sound, clean
Nose: clear airways, response to smell, clean
Mouth: pink gums, clean teeth
Coat: clean and shiny, full, no bald patches
Skin: correct colour, no breaks in the skin, no rashes
Tail: natural movement, absence of lumps or abrasions

Further indicators of good health

Feet: correct number of toes, correct number of claws
Posture: normal stance for the species, equal weight on all limbs
Breathing: apt respiratory rate for situation
Urine: normal colour/quantity, passed frequently and with ease
Faeces: normal consistency/colour, passed frequently and with ease
Food and water intake: normal quantity/frequency, correct foodstuff, ease of ingestion
Behaviour: natural/normal
Body language: no signs of pain

Areas of a dog's body to be checked for health issues



Signs of ill health

Eyes: sunken, discharge, cloudy pupils, bloodshot, limited sight
Ears: discharge, loss of hearing, injury
Nose, discharge, abrasions
Mouth: pale or discoloured gums, discoloured or broken teeth
Coat: dull, matted, bald pitches
Skin: abnormal colour, break in the skin, rash
Tail: lumps or abrasions, broken
Feet: broken claws, cracked pads
Posture: reluctance to use all limbs, hunched appearance
Breathing: irregular respiratory rate for the situation
Urine: discoloured, contains blood or pus, strong smell, displaying signs of difficulty passing urine
Faeces: loose consistency, colour change, contains blood, displaying signs of difficulty passing faeces
Food and water intake:
loss of appetite, increased thirst, rapid weight loss, unexpected weight gain
Behaviour: abnormal
Body language, signs of pain.

Assessing an animals health

Fox with scabies/ mange	Obese cat
	

What is stress?

Stress is an animal's response to a stressor such as an environmental condition. It is the body's method of reacting to a condition such as a threat, challenge or physical and psychological barrier.

Common causes of stress in animals

Natural stressors:

Food shortages
The presence of predators
Conflicts with neighbouring animals or group members
Fluctuations in food and water availability
Temperature changes.
Although individuals can sometimes predict when stressors will occur, e.g. food shortages during the winter months, they cannot always foresee the intensity or duration of individual stressors.

Common causes of stress in animals

Captivity stressors:

Human presence
False social groups, unfamiliar enclosure/mates
Unfamiliar stimuli (noises, smells, objects, etc.)
Change
Sanitation
Comfort
Handling
Transportation
Training
Unpredictable feeding.

Common signs of stress

Physiological signs:
Increased heart rate and Increased respiratory rate (panting).

Behavioural signs:
Aggression, lowered body posture, vocalisations (e.g. hissing, growling, etc.), avoiding eye contact, running away, hiding, self-mutilation/overgrooming and loss of appetite.