

Year 8 Knowledge Organiser - Weather & Climate

Key Vocabulary

Altitude – A vertical measure of height from sea level.

Atmosphere – A layer of gases that surround the Earth.

Climate - The average weather conditions over a prolonged period (30 years)

Condensation – Water vapour cooling and turning back into a liquid.

Convictional rain – Process in which warm air expands and rises where it then cools and condenses.

Deciduous – Broad leaf forests that lose their leave in autumn.

Economic – Factors wealth, trade, jobs.

Environmental – Factors impacting the natural surroundings and wildlife.

Equator – A invisible line that splits the Earth into a northern and southern hemisphere.

Evaporation – Liquid to gas due to heating.

Extreme weather - Is severe, against the norm and usually unexpected. This type of weather is unpredictable and infrequent and often breaks records!

Frontal rain – Warmer air is forced upwards as cold air undercuts forcing cooling and condensation.

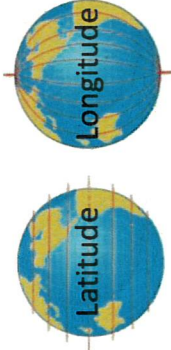
High pressure – Descending air.

Impermeable – Surfaces that do not allow water to pass through.

Infiltration – The movement of water into the soil.

What is latitude and longitude?

- Latitude and longitude are invisible lines that divide the Earth
- Latitude divides horizontally into a N/S hemisphere
- Longitude divides vertically into a W/E hemisphere.



Why are there climate zones?

Climate zones are influenced by latitude. Latitude determines how much sunlight and rainfall a place gets! This therefore effects what can grow.

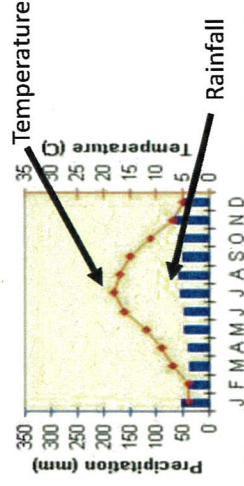
- The suns heat is concentrated over a smaller surface area at the equator
- The suns heat is spread over a larger area at the poles.
- The sun passes through less of the atmosphere at the equator, so less heat is lost giving higher temperatures.

What are temperate and tropical zones?

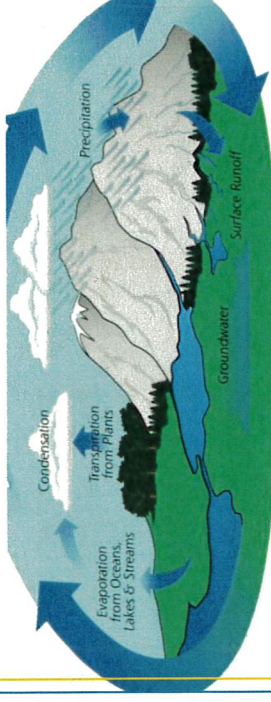
- Temperate zones have deciduous trees that lose their leaves in autumn. They have warm summers and cold winters.
- Tropical zones on the other hand are warm and wet all year round!

What are climate graphs?

- Climate graphs show temperature and rainfall.
- Here, the highest temperature is 19
- The highest rain was in November, at 7 mm.



How does water move around the planet?

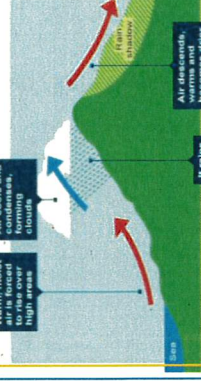


Why does it rain?

Cloud formation and hence rain involves the cooling of water vapour to allow condensation to occur.

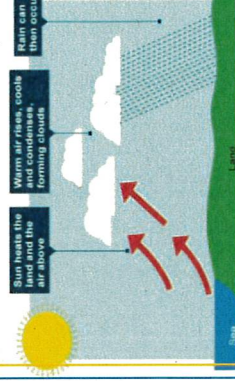
Relief rain

- Mountains cause air to rise.
- Water vapour cools and condenses.
- Rain shadow formed as air dries.



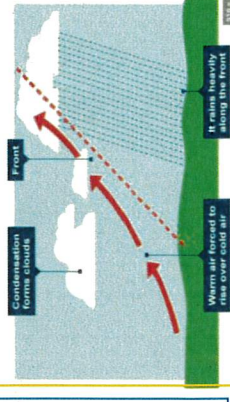
Convection rain

- Sun heats the ground.
- The ground heats the air which rises.
- It then is cools and condenses.



Frontal rain

- Warm air is force above cold air.
- This causes it to cool and then condense.



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Key Vocabulary

Latitude – Invisible lines around the Earth to assist locating.

Longitude Invisible lines over the Earth to assist locating.

Low Pressure – Rising air.

Permeable - Surfaces that allow water to pass through.

Precipitation – Rain, hail, sleet and snow.

Pressure – The weight of the air.

Relief – The physical shape of the land.

Relief rain – Mountains or hills force air to rise causing it to cool and condense.

Saturated – When the soil surface is full and cannot absorb any more water.

Social – Factors impacting people.

Surface runoff – Movement of water over the surface of the soil.

Temperate – Seasonal zones. Areas that experience warm summers and cold winters.

Transpiration – The movement of water from plants into the air.

Tropical – Areas between the tropics that receive high year round rainfall and temperature.

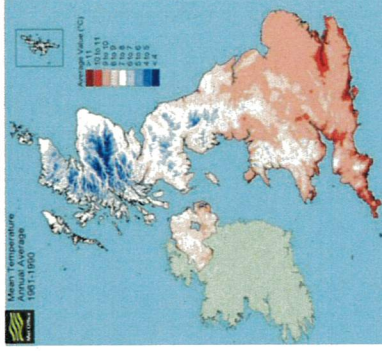
Tundra – Sub polar area in which the soil remains frozen for much of the year.

Vapour – Water in gas form.

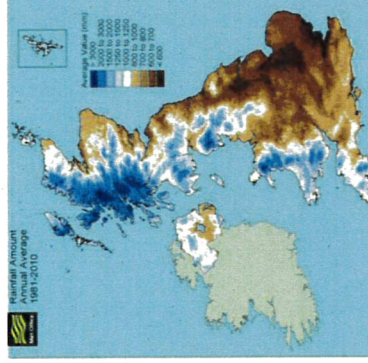
Weather – The day to day changes in the atmosphere.

How does UK climate vary?

- Areas to the north of the UK are generally colder than the south.
- Areas to the south east and south west are the hottest.



- North west Scotland is the wettest area.
- Eastern areas of the UK are drier than western areas.



Why does UK climate vary?

- Temperature decreases when air pressure falls. Air pressure drops with height.
- Areas of low latitude closer to the equator are warmer due to getting concentrated radiation.
- Winds originating from the north bring cold weather while southern winds bring warmth. Winds from across oceans are wet but continental winds are dry!
- Ocean currents in the North Atlantic such as the North Atlantic drift keep western areas much warmer in the winter. Ocean currents move warm water from the equator to the poles where it sinks and returns.
- Coastal areas are much wetter than inland areas due to increased moisture in the air from evaporation.

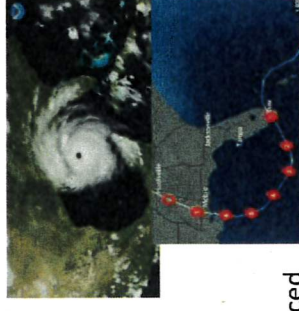


What is Extreme weather?

- Extreme weather is that which is against the norm, record breaking, unexpected and severe.
- Extreme weather is becoming more frequent.
- Examples include heat waves, torrential rain, blizzards.

What is an example of extreme weather?

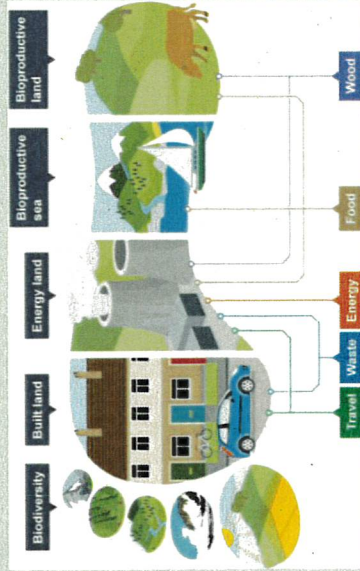
- In 2005, Hurricane Katrina developed into a powerful tropical storm in the Gulf. Katrina made land fall in Louisiana, battering the coast with high windspeeds and torrential rain.
- It remains the most costly natural disaster the US has faced



What were the effects of hurricane Katrina?

Social	Economic	Environmental
• Over 1 million people were displaced • 1800 people were killed • Trauma meant people decided never to return to Louisiana.	• 30 oil platforms destroyed • Rebuild estimated at 150 billion • Some insurance companies have stopped protecting home owners	• Storm surge wave causes significant coastal flooding • Marine mammals lost breeding grounds • Waters became contaminated with raw sewage

Ecological footprint

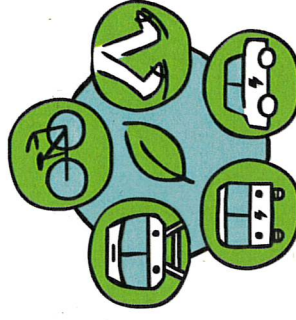
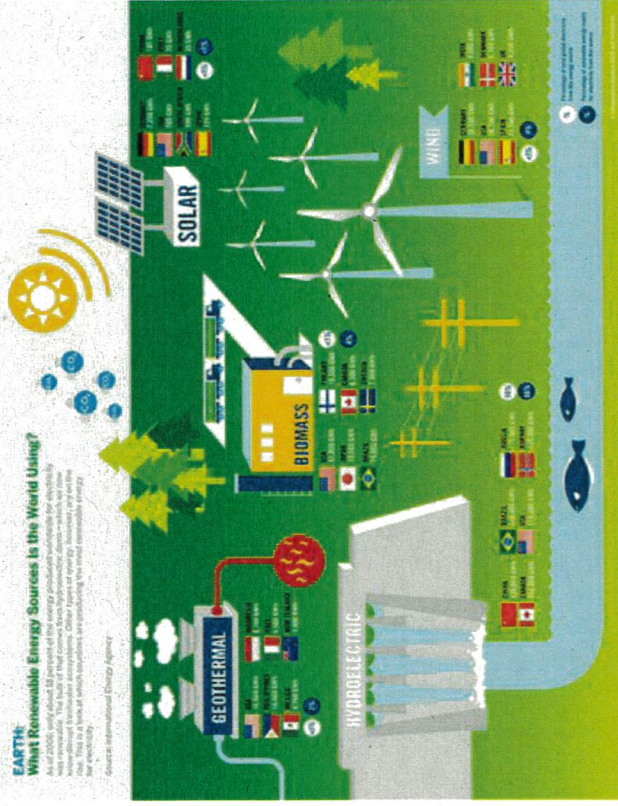


Our ecological footprint is a measure of the impact each of us has on the environment. It includes the amount of land needed each year to provide food, water, energy and services per person. Our ecological footprint is measured in global hectares per person (gha). We have enough on earth for 2.1 gha each. If this amount increases, our lifestyles will become unsustainable.

The more energy we consume, the more travelling we do, and the more natural sites we visit, the larger our ecological footprint.

Sustainable energy source - renewable energy sources include HEP, Solar Power, Wind farms, Biomass, Geothermal power and wave energy.

Costs	Benefits
Can be expensive to set up	Not much pollution
Might spoil the landscape	Safe
Noise pollution	Won't run out



SUSTAINABLE FUTURE

Sustainable building - One Angel Square, Manchester

- 16 storey building
- Underground car parking
- The atrium floods the building with natural light
- Low energy LED light bulbs are used throughout the building
- Waste pallets were upcycled are now modern furniture in the building
- 91% of the timber was sourced from chain of custody sources

SUSTAINABLE FUTURES - GLOSSARY

- **Sustainable living** - doing things in a way that lets the people living now have the things they need without reducing the ability of people in the future to meet their needs.
- **Ecological footprint** - the impact of a person on the environment, as the amount of land needed to sustain their use of natural resources
- **Urbanisation** - the growth of people living in towns & cities
- **Sustainable lifestyle** - a lifestyle in which you try to reduce your use of the earth's natural resources
- **Push factors** - a factor that encourages someone to leave an area and migrate
- **Pull factors** - a factor that encourages someone to leave an area and migrate
- **Socioeconomic opportunities** - factors that result in a chance for someone to have a new experience resulting in benefits for people and money
- **Reduce** - to cut down how much or how often you do / use something
- **Reuse** - to use something more than once
- **Recycle** - to convert waste products into a product that can be reused.
- **Transport** - vehicles which move people from one location to another
- **Residential landuse** - land which will have houses built on it.
- **Social landuse** - land which has a main aim of people coming together and meeting
- **Commercial landuse** - land which is mainly for shops

What are the UN Sustainable Development Goals?

In 2015 the United Nations agreed a set of 'sustainable development' goals that are focused on ending poverty around the world, protecting the planet and ensuring a new prosperity for everyone. The focus areas are:

1. People - to end poverty and hunger in all of its forms so that people are able to fulfil their true potential in dignity and equality.
2. Planet - to protect the planet from degradation and to make sure that the world becomes increasingly sustainable by managing its natural resources carefully.
3. Prosperity - to ensure that all people are able to lead prosperous lives in harmony with nature.
4. Peace - to ensure that peaceful societies are free from fear and violence.
5. Partnership - to mobilise the means and money to support this agenda.

SUSTAINABLE DEVELOPMENT GOALS



How do the Sustainable Development Goals link to us as Witton Citizens?

As Witton Citizens our values are to be aspirational, respectful and resilient.

These values will help us to make positive contributions to society and improve the lifestyles of other people. The Sustainable Development Goals have the same aim. Study the 17 goals and consider how you can support their implementation. What can you do to help the goals, and a better quality of life for others, become a reality.

What are the 17 sustainable development goals?

1. No poverty
2. Zero hunger
3. Good health & wellbeing
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation and infrastructure
10. Reduced inequalities
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice and strong institutions
17. Partnerships for the goals



Economic Change in the UK

What do we mean by an economy?

What is an Economy?

This is how a country is doing in producing and making goods and providing services and how much money it has.

*"The amount of **goods** and **services** that are made, sold, and used in a country or area are known as **economic activity**."*

GOODS—items to be sold

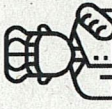
SERVICES—helping or doing work for someone.

The scale of an economy can vary from local to global.

What do we mean by types of Economic Activity?

There are four main types of Economic Activity:

PRIMARY SECTOR—this is where raw materials are extracted (taken) from the land and sea—e.g. jobs in fishing, mining, farming etc.



SECONDARY SECTOR—this involves manufacturing (making things) from raw materials e.g. factories

TERTIARY SECTOR—this involves providing a service to others e.g. teachers, doctors, tourism industry etc.



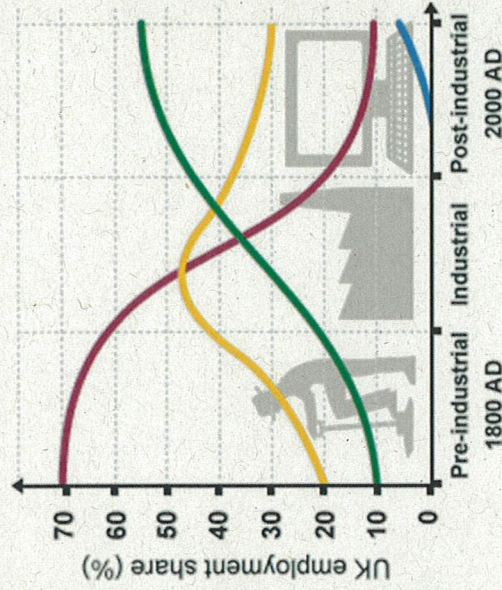
QUATERNARY SECTOR—this involves research and development into new technologies / ideas e.g. research into renewable energy.



What is meant by employment structure?

The employment structure of a place is the % of people working in the different types of economic activity—e.g. the % of people working in primary, secondary, tertiary and quaternary sectors.

How has the UK's employment structure changed?



What has happened to the employment structure in the UK?

1. The number of people working in the primary sector has decreased.
2. The number of people working in the secondary sector has also decreased.
3. The number of people working in the tertiary sector has increased.
4. More now work in the quaternary sector.

Why has the UK's employment structure changed?

There are **FEWER** people working in primary industries due to:

- **MECHANISATION** (more machines—e.g. combine harvesters—less man power needed).
- **LESS NATURAL RESOURCES AVAILABLE** (or cheaper to import them)

There are **FEWER** people working in secondary industries due to:

- **CHEAPER LABOUR ABROAD**—it has become cheaper to make goods abroad
- **GLOBALISATION**—increases in transport have made it easier to move goods around the world.

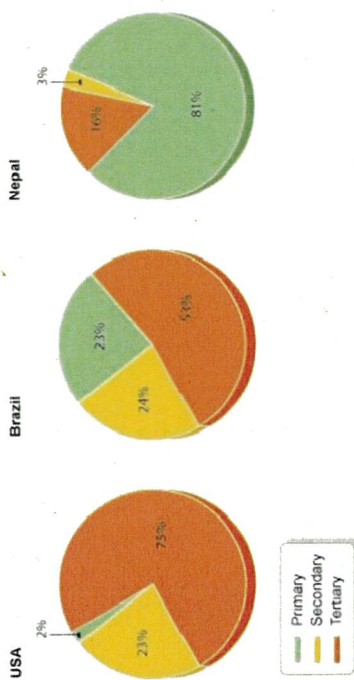
There are **MORE** people working in tertiary industries due to:

- More **DISPOSABLE INCOME** per person (this is the amount of money people have left when they have paid for the essentials (bills / food etc.))

This means people have more money to spend on non-essentials—e.g. tourism, recreation and also things like healthcare, shopping etc.



How does employment structure vary around the world?



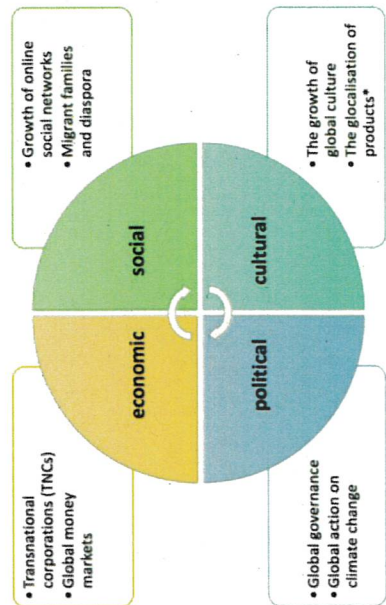
Poorer countries, such as Nepal (see above) still have a high proportion of people working the primary sector. As countries industrialise and develop, there is a growth in the secondary sector. Well developed countries have the highest levels of people working in the tertiary sector.

What is Globalisation?

The increasing links between countries around the world as a result of the movement of goods, services and money is known as **GLOBALISATION**.

This has happened with improvements in transport and also communication networks, such as the internet, which has connected people and places around the world.

Impacts of Globalisation include..



APPLYING YOUR KNOWLEDGE...

1. What type of economic activity would a forestry worker be involved in?
2. What type of economic activity would a scientist be involved in?
3. What has happened to the amount of people working in the secondary industry in the UK?
4. Why are there now less people working in the primary industry in the UK?
5. Why is there now more demand for services (tertiary industry) in the UK?

Now Challenge yourself even further!

- Find out what is meant by a transnational company and write down 4 examples that you know of.
- Look at 10 food products and 5 examples of clothes and check their labels for where they were made—mark these on a map with arrows between the country of origin and the UK. Try and explain why you think we now import more of our food and clothes.

Some ideas for finding out more..

Read more about Globalisation and Global trade here.. <https://www.bbc.co.uk/bitesize/guides/zrvcwmn/revision/2>

Research Question—how could we investigate this?

“What impact has globalisation had on the shops and job types in St. Ives, Cambridgeshire”

Key Term	Definition
Disposable income	The amount of money people have left after all essentials have been paid (e.g. bills, food etc.)
Economy	The way in which goods and services are made, sold and used in a country or area.
Employment structure	% of people working in different types of industry.
Goods	Items to be sold
Globalisation	The increasing links between countries around the world as a result of the movement of goods, services and money.
Primary Sector	Raw materials are extracted (taken) from the land and sea e.g. jobs in fishing
Quaternary Sector	Involves research and development into new technologies / ideas e.g. research into renewable energy
Secondary Sector	Manufacturing (making things) from raw materials e.g. factory workers
Services	Helping or doing work for someone
Tertiary Sector	Providing a service to others - e.g. teachers

KS3 Schoology



SCAN ME

Key Terms—To test yourself Read, Cover, Write, Check OR try this quizlet <https://tinyurl.com/KS3UKEconomy>

