

## YEAR 7 GEOGRAPHY KNOWLEDGE ORGANISERS 2021-2022



World Geography

Map Skills

Population

Weather and Climate

Rivers

Economic Activity

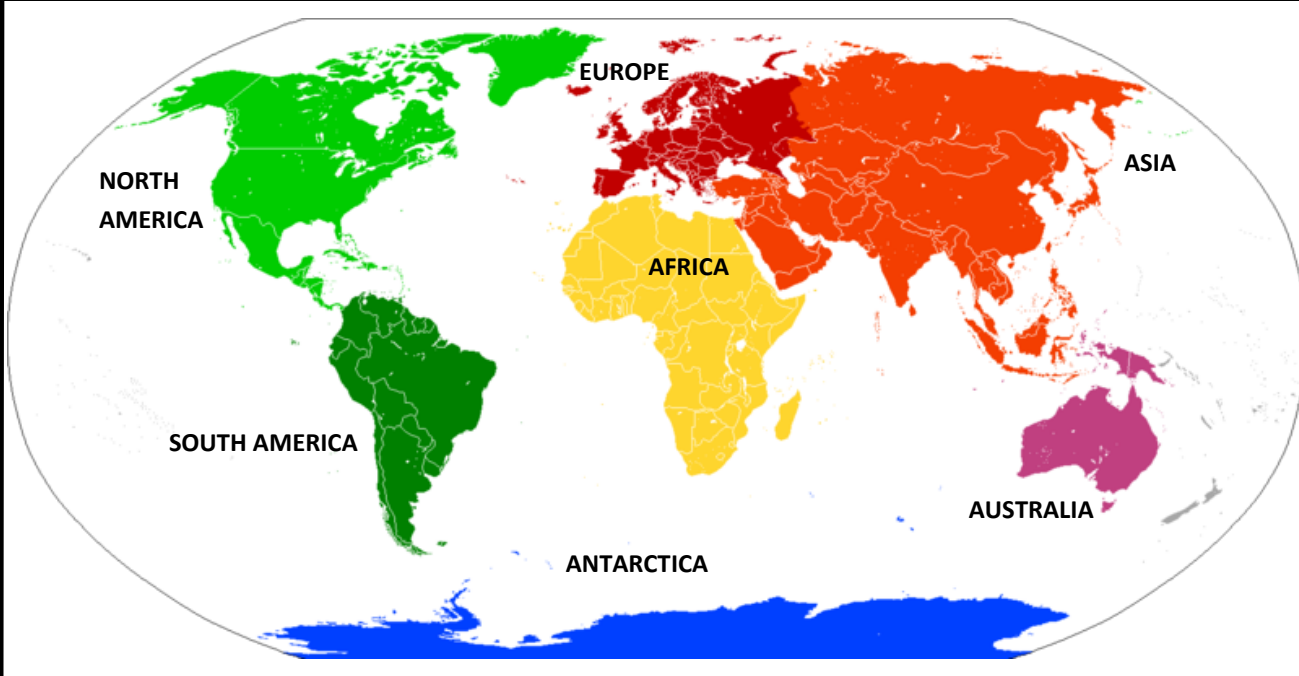
Russia

# 7

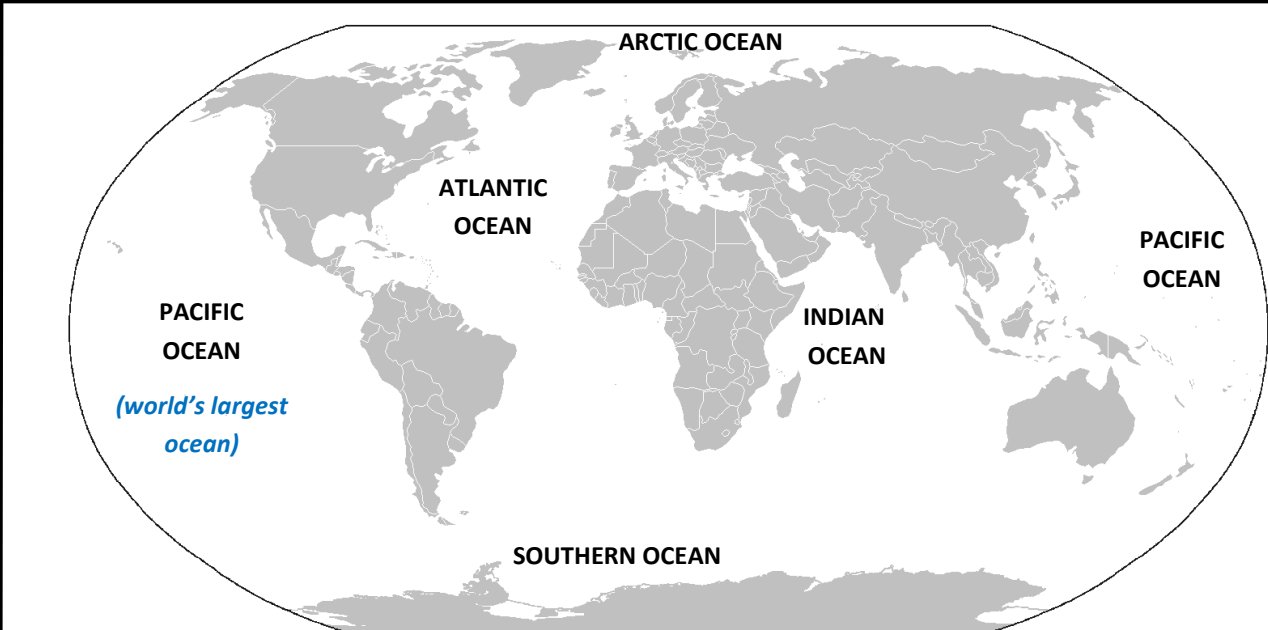
# World Geography

## 1. CONTINENTS

There are SEVEN continents



## 2. OCEANS



## 3. MAJOR MOUNTAIN RANGES

MOUNTAIN RANGE	WHERE IN THE WORLD
Alps	EUROPE
Andes	SOUTH AMERICA
Atlas	AFRICA
Himalayas	ASIA
Rocky Mountains	NORTH AMERICA
Ural Mountains	ASIA

**Mount Everest** is the tallest mountain in the world (8,848metres) and **K2** is the second tallest (8,611m) both in the **Himalaya range**.

## 4. MAJOR RIVERS RANGES

MOUNTAINS	WHERE IN THE WORLD
Amazon	<b>SOUTH AMERICA</b> (second longest river in the world)
Danube	<b>EUROPE</b> (source in Germany)
Ganges	<b>ASIA</b> (India / Bangladesh)
Mississippi	<b>NORTH AMERICA</b> (USA)
Mekong	<b>ASIA</b> (starts in Tibet)
Nile	<b>AFRICA</b> (Longest river in the world—starts in Tanzania (White Nile) and Ethiopia (Blue Nile) and ends in Egypt)
Volga	<b>EUROPE</b> (longest river in Europe) - Russia
Yangtze	<b>ASIA</b> (China) - third longest river in the world
Zambezi	<b>AFRICA</b> (starts in Zambia)

## 5. MAJOR DESERTS AND RAINFORESTS

Sahara Desert—**AFRICA**  
Thar Desert—**ASIA (India)**  
Kalahari Desert—**AFRICA**  
Gobi Desert—**ASIA**  
Arabian Desert— **ASIA**



The Amazon Rainforest  
**SOUTH AMERICA**  
The Congo  
**AFRICA**



# World Geography

## 6. COUNTRIES (to explore all the countries of the world see Google Earth <https://earth.google.com/web/> )



## 7. CAPITALS (major capitals to learn) - to practice these use this quizlet <https://tinyurl.com/KS3WorldCapitals>

ARGENTINA	Buenos Aires	CHILE	Santiago	IRAN	Tehran	NEW ZEALAND	Wellington	SPAIN	Madrid
AUSTRALIA	Canberra	CHINA	Beijing	ITALY	Rome	PERU	Lima	UK	London
BANGLADESH	Dhaka	FRANCE	Paris	JAPAN	Tokyo	PHILIPPINES	Manila	USA	Washington D.C.
BOLIVIA	Sucre	ICELAND	Reykjavik	KENYA	Nairobi	PORTUGAL	Lisbon	VENEZUELA	Caracas
BRAZIL	Brasilia	INDIA	New Delhi	MALAYSIA	Kuala Lumpur	RUSSIA	Moscow		
CANADA	Ottawa	INDONESIA	Jakarta	MEXICO	Mexico City	SOUTH AFRICA	Cape Town / Pretoria / Bloemfontein		

Schoology



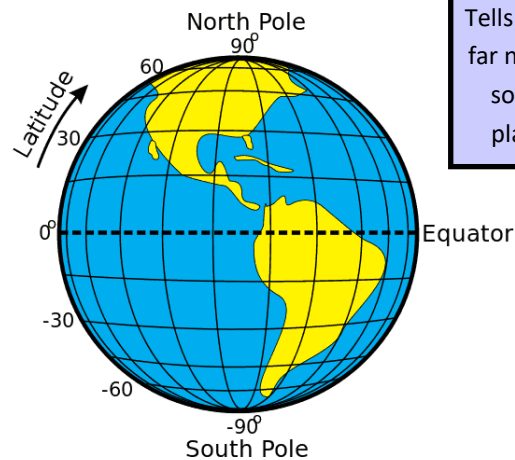
SCAN ME

# MAPSKILLS

## 1. Latitude and Longitude

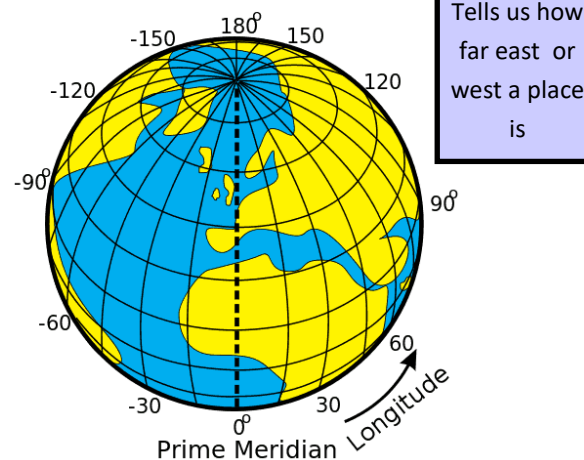
We can use latitude and longitude to pinpoint the location of any place on the earth.

**LATITUDE**— lines of latitude are parallel to each other, circling the earth in an east-west direction. The  $0^\circ$  line of latitude is the equator. The Tropic of Cancer is  $23.5^\circ\text{N}$  and the Tropic of Capricorn is  $23.5^\circ\text{S}$



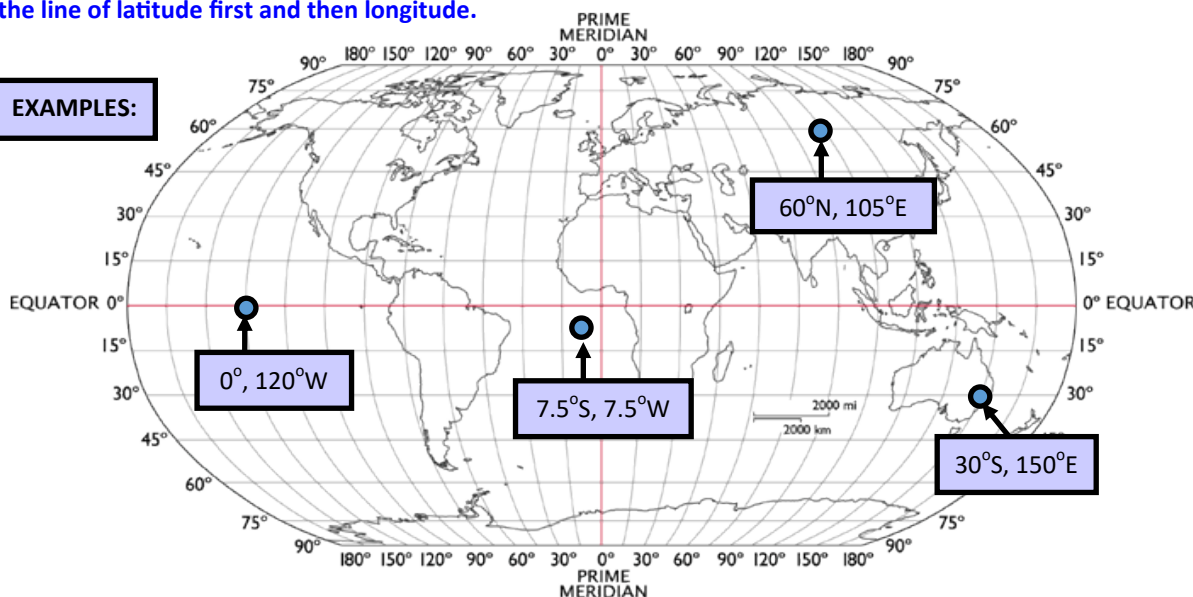
**LONGITUDE**—lines of longitude run from the top of the earth to the bottom meeting at north and south poles (they are also called meridian lines).

The  $0^\circ$  line of Longitude is known as the Greenwich Meridian and runs through Greenwich in London.



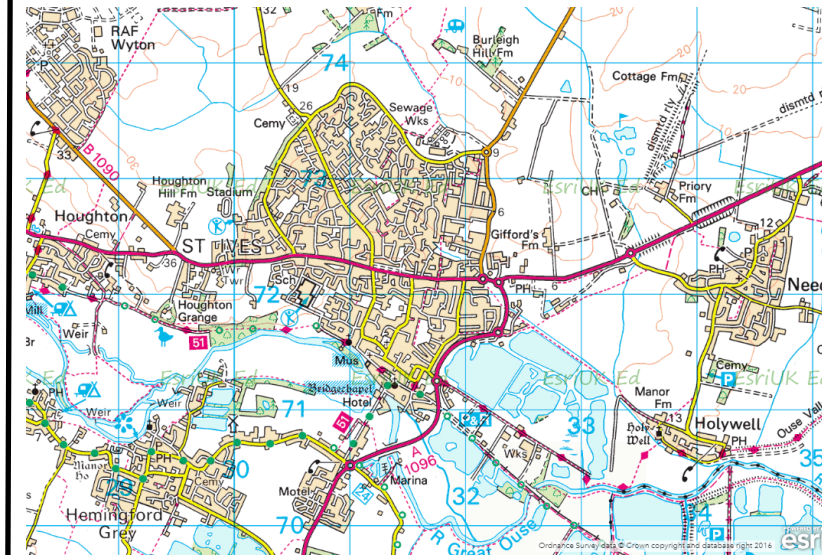
Source: [Image: Djexplo – Wikimedia Commons, CC BY 2.0](#)

When giving the latitude and longitude of a place—always given the line of latitude first and then longitude.



## 2. Ordnance Survey Maps

The Ordnance Survey (OS) is the national mapping agency for Great Britain. Ordnance Survey maps are detailed maps of Great Britain, showing the physical landscape and detailing features such as villages, towns, rivers, roads etc.



There are a number of skills you need to learn to be able to interpret OS maps.

## 3. Scale

Scale enables you to calculate the exact distance between two places on a map. The scale of a map is how much you would have to enlarge your map to get to the actual size of the area you are looking at.

1:25,000 and 1:50,000 are common OS map scales.

1. **1:25,000**—this means that every 1cm on the map = 25,000cm in real life.

i.e. this is the same as **4cm to 1km**

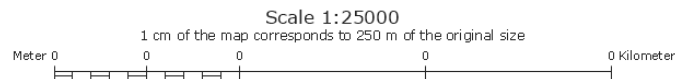
2. **1:50,000**—this means that every 1cm on the map = 50,000cm in real life.

i.e. this is the same as **2cm to 1km**



## 4. Calculating Distance on an OS map.

All Ordnance Survey maps have a scale bar to be used to help measure distance.



### 1. Measuring STRAIGHT LINE DISTANCES:

Measures the direct distance between two points.



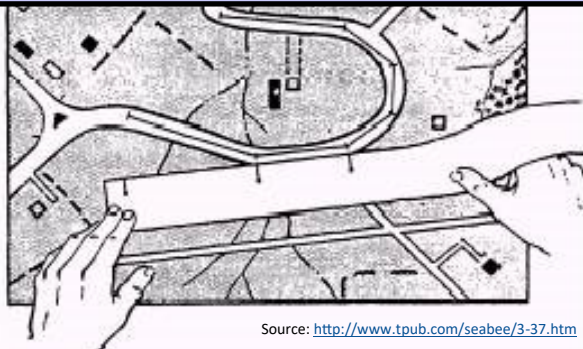
- Mark the positions of the two places on the edge of a piece of paper
- Place **this edge** under the scale bar and read off the correct number of whole and part kilometres (remember to start at 0!)

### 2. Measuring CURVED (ACTUAL) DISTANCES:

- Choose a straight edged piece of paper, mark one of the places on the edge and gradually work along the route, using a pen to pivot the paper and keep it in place to follow the route until meet the second place (mark this with a pen). You can then use the scale bar to work out the distance.



Always remember to give units ( e.g. km) when giving distance!



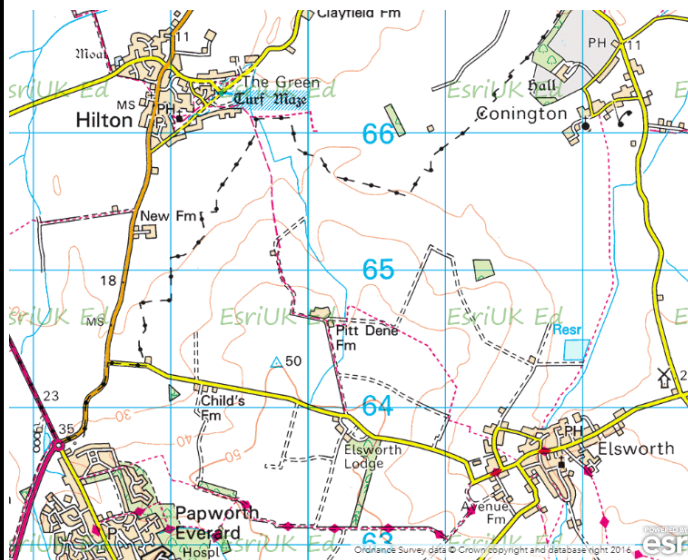
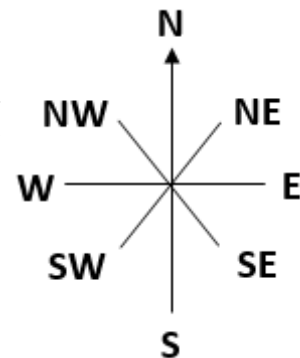
Source: <http://www.tpub.com/seabee/3-37.htm>

## 5. Directions

Ordnance Survey maps will all have a north arrow marked on.

You must be able to describe the position of places in relation to other places using direction.

You should be able to use an 8 point compass. Some of you may even be able to use a 16 point compass for increased accuracy. For example if a place is between N and NE it is NNE.



In the map above— what direction would you travel..

- ?
- from Conington to Hilton?
  - from Elsworth to Hilton?
  - from Papworth Everard to Hilton?
  - from Papworth Everard to Conington?

## 6. Using a key

As there is a lot of information on OS maps, symbols, lines and icons are used to help mark things on a map.

Each Ordnance Survey map will have a **key**—this will help you identify what each symbol actually means and therefore help you interpret the landscape you are looking at.

Although OS maps have a key, you should try and learn some of the most often used symbols. Some examples are below.

Church with a Tower	
Church with a spire	
Campsite / Caravan site	
Golf Course	
Bus Stop	
Picnic site	
Public House	
Car Park	
Viewpoint	
Site of Battle	
Coniferous Woodland	
Non-coniferous woodland	
Tourist information	
Public Phone	

## 7. Grid Reference—4 and 6 figure

Ordnance survey maps are divided into grid squares. These can be used to help pin-point the location of a place.

Vertical lines are called **EASTINGS** with numbers increasing towards the east and horizontal lines are called **NORTHINGS** with numbers increasing towards the north.

**Always give the EASTING and then the NORTHING figure**

**You need to be able to use and give both FOUR and SIX figure grid references.**

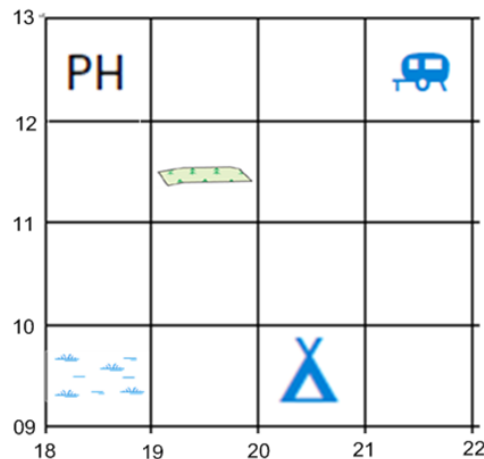
### 1. FOUR FIGURE GRID REFERENCES

*How would you give the four figure grid reference of the square with the marsh in?*

Give the number of the line to the left of the square which is **18**

Give the number of the line to the bottom of the square which is **09**

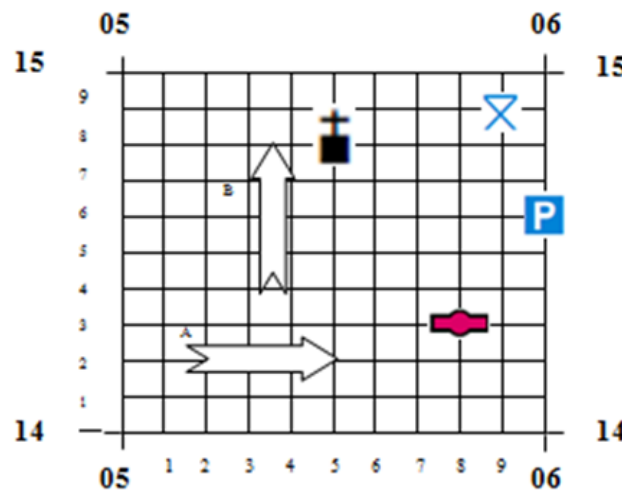
So the marsh is in grid square **1809**



- ?** So what is the 4 figure grid reference for:-
- (i) Campsite \_\_\_\_\_ (ii) Pub \_\_\_\_\_
  - (iii) Woodland \_\_\_\_\_ (iv) caravan site \_\_\_\_\_

## 2. SIX FIGURE GRID REFERENCES

Six figure grid references are simply an extension of four figure grid references. The four figure grid reference tells us which grid square to look in, a six figure grid reference tells us precisely where within that grid square to look.



*How would we give the six-figure grid reference for the church with a spire, located within this grid square?*

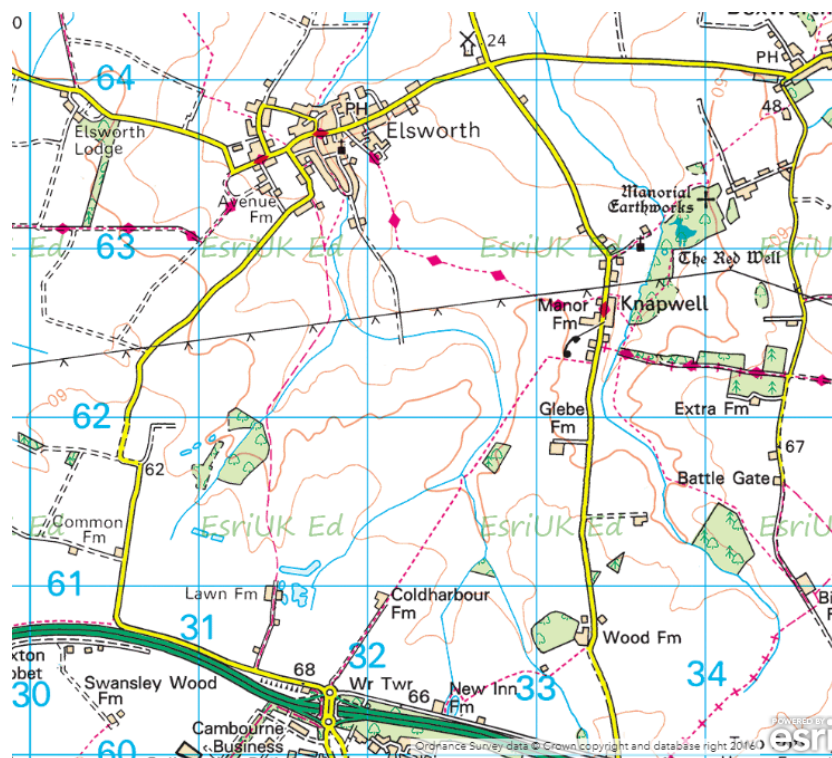
1. Firstly - what is the 4 figure grid reference for this square? (remember give the number of the line to the left and then number of the line immediately below the square **0514**)

2. You need to imagine that the square is divided into tenths (along the bottom and up the side).

Go 'along the corridor' (follow arrow A), how many tenths along the square is the church? **5**, add this number to the first two figures of your four figure grid reference. **0 5 5**

Now go 'up the stairs' (follow arrow B), how many tenths up the square is the church? **8**, add this number to the second two figures of your four figure grid reference **1 4 8**

Now put the two halves together to give the six figure grid reference for the church with the tower which should be written **055 148**.



- ?** So – can you give the 6 figure grid reference for (i) The Bus Station (ii) The Picnic Site? (iii) The car park?

### **?** NOW PRACTICE USING THE OS MAP OPPOSITE

*What is the four figure grid reference for:*

1. Avenue Farm (Elsworth)?
2. Wood Farm?
3. Elsworth Lodge?
4. Manor Farm (Knapwell)?

*What is the six figure grid reference for:*

1. Church with tower—Elsworth?
2. Lawn Farm?

## 8. Height and Relief of Land

Ordnance Survey maps can be used to tell us about the **height** and **relief** of land.

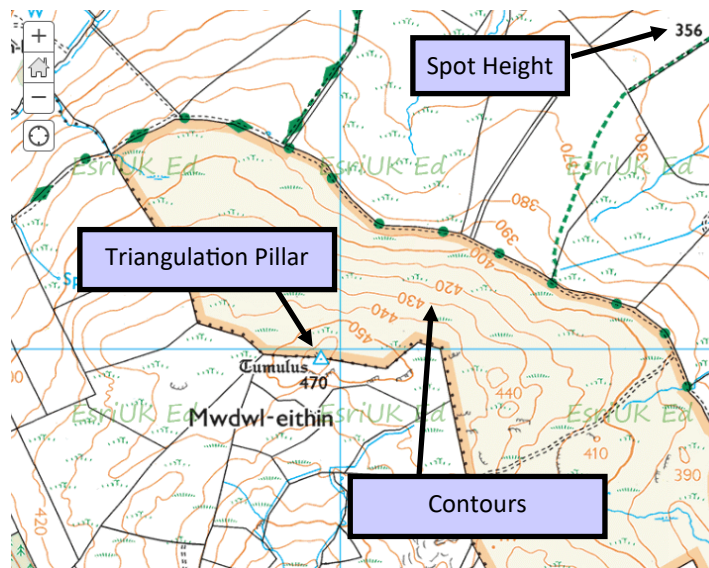
The **height of land** is how high above sea level the land is (measured in **metres above sea level**). The **relief of the land** refers to the **shape of land** in relation to its lowest and highest points.

On Ordnance Survey maps, **contour lines**, **spot heights** and **triangulation pillars** can be used to give information about the height and relief of an area of land.

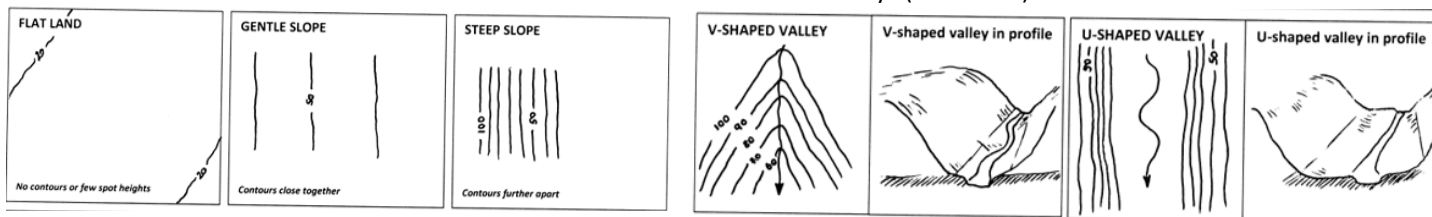
**Contour lines** are lines that join places of equal height and are often in 5 or 10 m intervals.

The closer together the contours, the steeper the slope—it shows the height of the land increases or decreases quickly.

The further apart the contours are the more gentle the slope. Where contours are very far apart it may be flat.



Contour patterns can tell us about landscape features such as hills and valleys (see below).



## APPLYING YOUR KNOWLEDGE...

**?** Make sure you try some of the questions throughout this KO.

1. What is meant by 1:25,000 on an OS map?
2. What is the difference between height and relief on an OS map?
3. What will a slope be like where contours are close together?
4. What are the 0° lines of latitude & longitude?
5. Define what is meant by a contour line.

### Now Challenge yourself even further!

1. Using the St Ives OS map extract on the next page try pick a walking route between St Ives and Holywell, describe your journey and what you would see on the way (try and work out the distance as well).
2. Test yourself on Grid references and calculating distances using the OS map to help you (you could pair up—each create questions and then test each other!)

### Some ideas for finding out more...

There are some advanced map reading guides from the Ordnance Survey here <https://getoutside.ordnancesurvey.co.uk/guides/map-reading-skills-advanced-guides/>

## OTHER RESOURCES

Mapzone—Interactive Games <https://www.ordnancesurvey.co.uk/mapzone/games>

Map Reading videos with Steve Backshall and Ordnance Survey <https://tinyurl.com/mapreadingvideos>

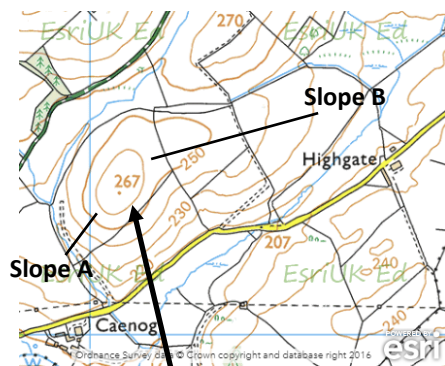
OS Mapskills—BBC Bitesize <https://www.bbc.co.uk/bitesize/guides/z6j6fg8/revision/1>

Ordnance Survey OS Explorer Symbol Flashcards <https://tinyurl.com/OSSymbolflashcards>

## KS3 Schoology

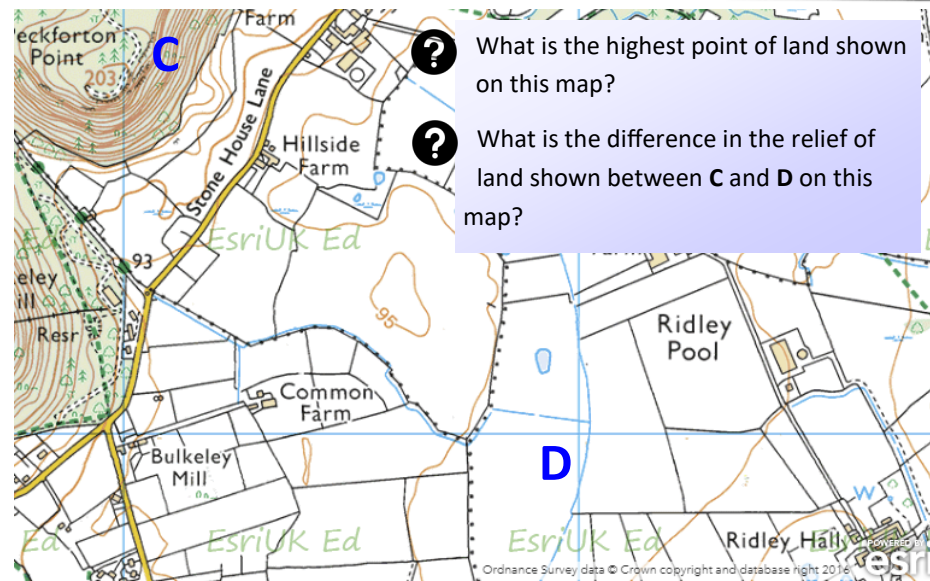


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**?** What is this landscape feature?

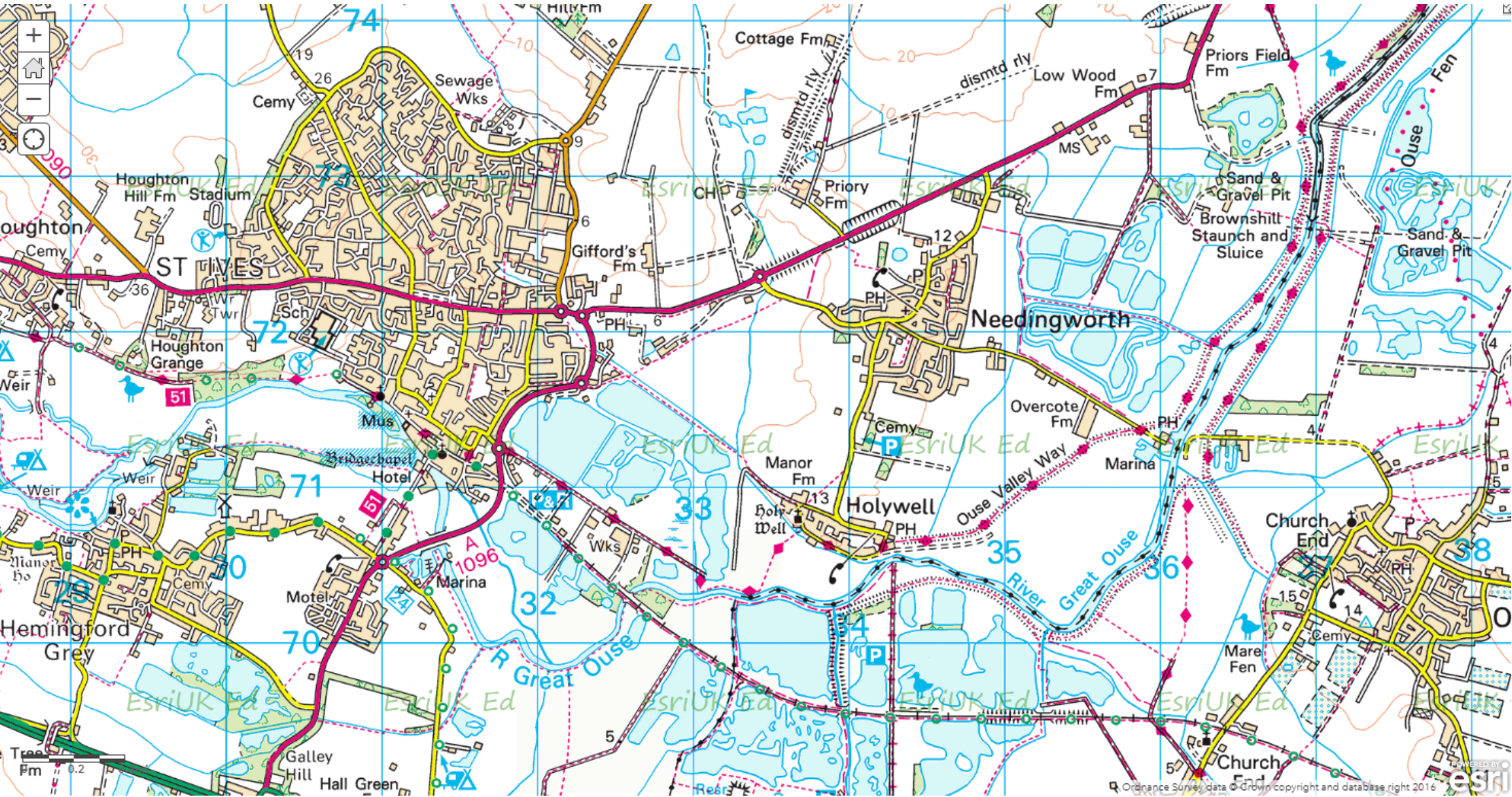
**?** What is the difference between Slope A and Slope B?



**?** What is the highest point of land shown on this map?

**?** What is the difference in the relief of land shown between C and D on this map?

Ordnance Survey Extract - St Ives and surrounding area



# Population

**Key Idea:** The human population of the planet has grown rapidly

**Population:** The number of 'inhabitants' of a particular place.

**Birth Rate:** (BR) The number of babies born per 1000 people per year.

**Death Rate:** (DR) The number of deaths per every 1000 people per year.

**Population growth or 'natural change' (NC):** calculate "BR - DR = NC"

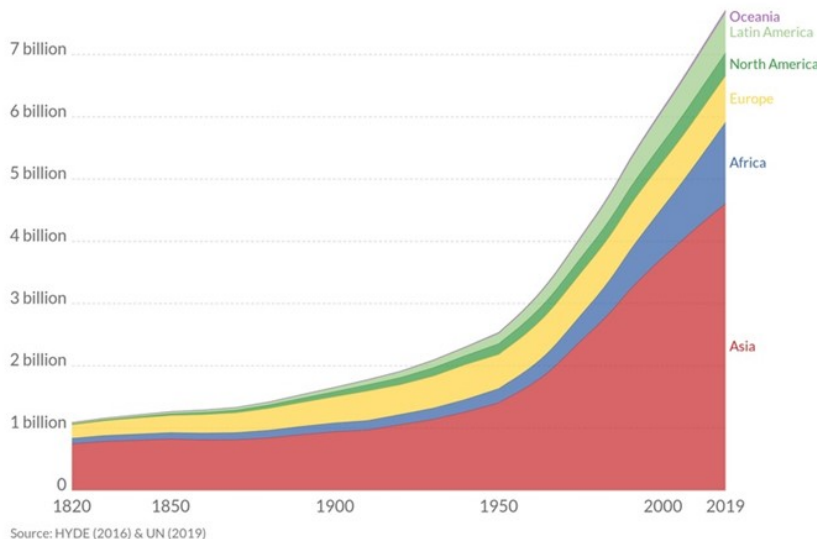
**Natural Increase:** when the birth rate exceeds the death rate.

**Natural Decrease:** when the death rate exceeds the birth rate.

Country	Birth rate	Death rate	Natural increase
UK	11	10	1

Growth was slow and steady until 1900 at which point **death rates** across the world started to fall. **Natural increase** was rapid causing a **population explosion**.

World population by region



The world population increased from 1 billion in 1800 to 7.7 billion today.

Whilst all continents show growth, some individual countries are increasing rapidly, while others are stable or even declining.

While the number of births and deaths is always a factor, other factors such as war, disease, migration, policies, and natural disasters others can affect a population's growth.

	FACTORS RESULTING IN HIGH RATES	FACTORS RESULTING IN LOW RATES
Factors affecting birth rates:	<ul style="list-style-type: none"> <li>Children work to help the family income.</li> <li>Children care for grandparents</li> <li>Low availability/knowledge /Fear of <b>contraception</b> and family planning</li> <li>High infant mortality, many born so some survive.</li> <li>Certain religions encourage large families.</li> <li>Large families can show high status for men.</li> </ul>	<ul style="list-style-type: none"> <li>Women's rights increased so can choose to not have children.</li> <li>Contraception/family planning available and affordable.</li> <li>Careers before family so fewer children</li> <li>Later marriage reduces <b>childbearing years</b></li> <li>Children increasingly expensive, prefer to have more disposable income</li> </ul>
Factors affecting death rates:	<ul style="list-style-type: none"> <li>Lack of food/malnutrition from <b>famine</b>.</li> <li>Poor sanitation and lack of <b>potable</b> water.</li> <li>Natural disasters destroying crops/incomes.</li> <li>High levels of disease, eg malaria.</li> <li>Lack of doctors, medicines and healthcare.</li> <li>War and genocide.</li> </ul>	<ul style="list-style-type: none"> <li>High food availability and storage</li> <li>Advances in medicine and technology</li> <li><b>Vaccinations</b> against disease childhood</li> <li>Improved water provision and <b>sanitation</b>.</li> <li>Lower infant death rates.</li> </ul>

**Higher income countries have lower birth and death rates**, (10-20 per thousand people per year), whereas **lower income countries have higher birth and death rates** (40-50 per thousand people, per

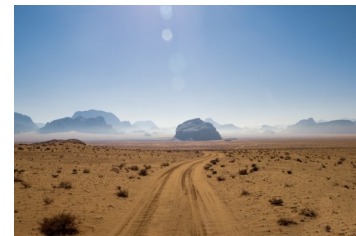
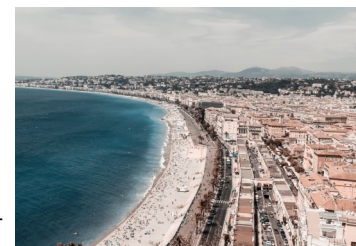
**Key Idea:** The world's population is not evenly distributed

**Population Distribution** = The pattern or 'spread' of where people live in the world.

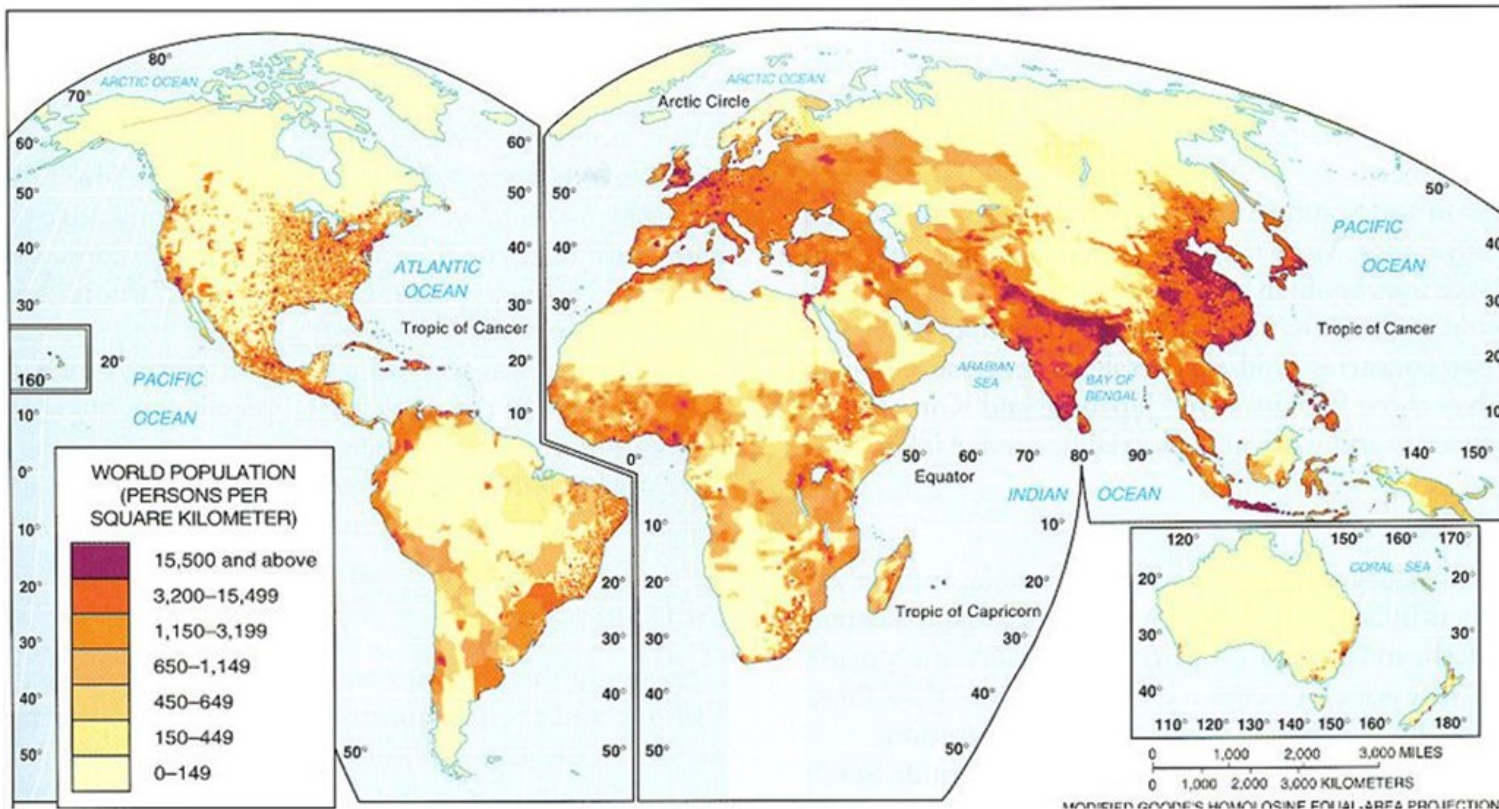
**Population Density** = A measurement of how many people there are per square kilometre.

**Densely populated** = The population is high and very close together. Typically, in the mid-latitude climates, lowlands and near coastal areas, beside major rivers, easy to develop and grow food to feed large populations.

**Sparsely populated** = The population is low and very spread out. Typically, in extreme climates or high-altitude locations where it is difficult to live and grow enough food to support large populations.

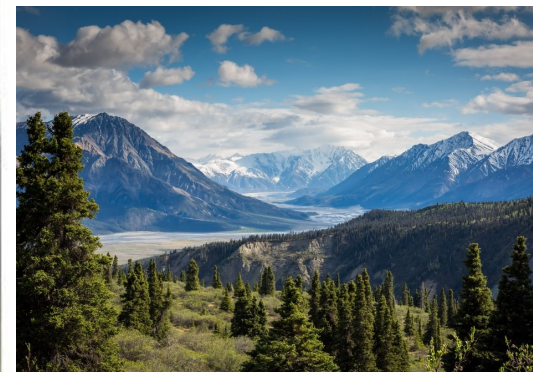


## Population continued...



### Physical factors affecting population density

- Available water supply
- Relief
- Climate
- Nearness to coast
- Soil type (how fertile)
- Access to resources (e.g. minerals)
- Vegetation

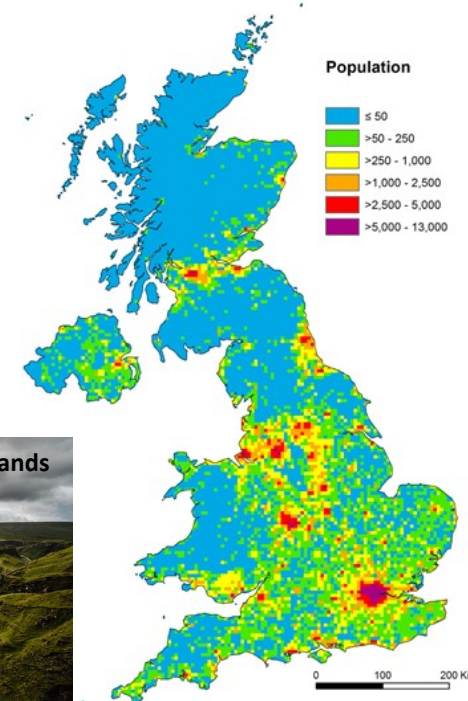
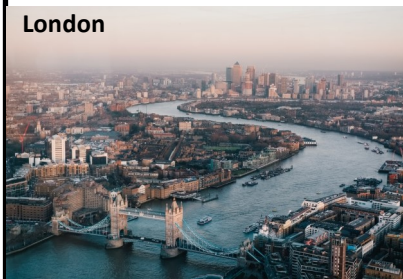


### Human factors affecting population density (\*may result in migration)

HIGH DENSITY REASONS	LOW DENSITY REASONS
ECONOMIC: diverse financial market, developed business infrastructure, trade links, jobs in all sectors. Important city	ECONOMIC: limited trade, unstable economy, lack of financial and business services. Rural area.
SOCIAL: good housing, school and health provision or opportunities, choice, and freedoms	SOCIAL: isolated populations with lack of infrastructure, to support employment, schooling, and services
*POLITICAL: stable fair government, good global standing, respect for law and civil rights	*POLITICAL: Unstable government, civil war, lack of personal liberty, or civil rights.

### THE UK'S POPULATION DENSITY

- England is more densely populated than Scotland, Wales, and Northern Ireland.
- There are few people in all the highland areas of the UK. Dense clusters around major cities in the North of England where industry is located.
- Most dense area is London and the surrounding area.



# Population continued...

**Key Idea:** Population size and structure is important for governments and decision makers

**Underpopulation** = Too few people to make best use of their resources of food, water, minerals, and energy, so it can limit the standard of living because a lack of. (Australia, Canada, and Mongolia) There can sometimes be many unfilled job positions and a need to use migrant labour to help the economy.

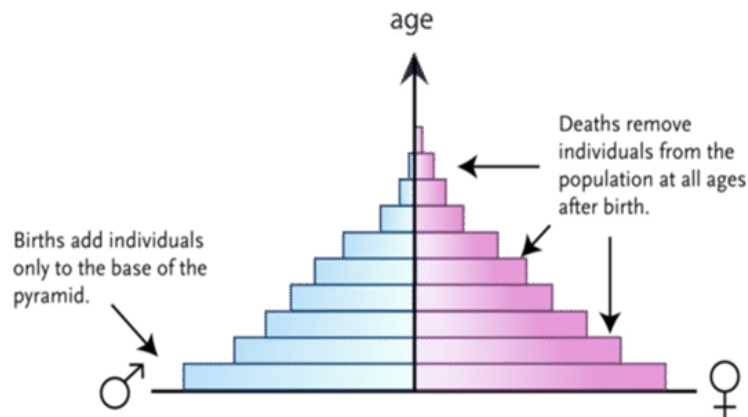
**Overpopulation** = The size of the population exceeds a country's own supply of **resources** (food, water minerals and energy,) and therefore puts pressure on the systems of society and **reduces the standard of living**. (Singapore, Israel, Kuwait). This is not the same as a place being 'densely populated'. The ability of a place to support the population is what determines over or under population.

**Population policy** a set of laws or strategies put in place by a government aimed at 'managing' the number of people in a country. A population policy may be '**pro-natal**' (encouraging births) or '**anti-natal**' (discouraging births). A famous anti-natal policy was **China's One Child Policy (OCP)**. Overall, it is estimated to **have prevented 400 million births**. This is more than the entire population of the United States of America!

## China's One Child Policy (OCP).

The Issue:	The policy (OCP)	The penalties	Problems
In the early 1970s, the government feared famine, and over-population was reducing the quality of life and standard of living. Many families lived in poverty with few jobs available and no income. They felt a policy of strict population control was required.	OCP introduced in 1979. Couples should delay marriage until 25 or over. Must be sterilised after the first child or abort any future pregnancies. Would receive a 5-10% salary rise for limiting their family to one child. Reduced education and healthcare costs for family.	For disobeying the policy, a 10% salary cut Significant fines designed to be too high for most households pay for the education of both children and health care for all the family Second children born abroad were not penalised, but they were not allowed to become Chinese citizens	Forces abortions Gender imbalance due to preference for boys in society (30 million more males than females) Abandoned baby girls left in orphanages Government had too much control over people's lives Spoilt and lonely male children known as 'Little Emperors'.

**Population Pyramid:** A horizontal bar graph that represents the 'structure' or composition of a place's population by age and sex. They indicate the proportion of the population who are dependents (too young or old to work) or economically active (a country's eligible workforce) as this can affect a country's wealth and income.



### UNDERSTANDING POPULATION PYRAMIDS:

**Width of the base** - indicates high or low birth rates. High birth rate is shown with a wide base.

**Symmetry** - pyramids should be symmetrical. Any asymmetry indicates a difference in the male and female population.

**Shape of sides** - Concave sides (curving inward) with a narrow top, indicate a high death rate and convex sides (bulging outward) and a wide top, indicate a low death rate.

**Bumps in the sides** - irregularities in the sides indicate an anomaly, bulges in the middle indicate migrants moving for work. Dents in the middle side indicate emigration. side is a sign of migrant.

**High pyramids indicate** - Long life expectancy. Average age in years a person lives to in an area



## Population continued...

Population structures with more old people than young can lead to problems with looking after the elderly, increasing costs of healthcare and taxes and declining birth rates.

Populations with more young than old may lead to problems with economic development due to too many children to support and not enough jobs and school places. Both these situations may result in migration. People needed to work or people moving for work.

• **Migration** The movement of people from one place to another. Migrant A person who migrates from one country to another.

• **Rural-to-urban Migration** = This is when people migrate from countryside areas to towns and cities.

• **International Migration** = The act of resettling to another country.

• **Emigration** The act of leaving a country to resettle abroad. (Emigrants leaving their country)

• **Immigration** The act of moving into a country from abroad. (Immigrants entering another country)

• **Refugee** A person who is forced to migrate as a result of unsafe conditions in their home country.

To balance a population with natural population growth and migration usually requires careful knowledge of the population structure. In the UK a census is carried out every 10 years to find out who lives in the UK and their age education level and wealth. This helps with managing the economy and public services.



### APPLYING YOUR KNOWLEDGE...

- Why may birth rates remain high in a country?
- How do you calculate natural population change?
- What does the terms sparsely populated mean?
- Name a country or region of the world where few people live?
- What problems are associated with over populations?
- How could having an aging population lead to population decline?
- What is the difference between an immigrant and an emigrant?
- What do we call factors that make people want to leave a place?

#### Now Challenge yourself even further!

- Explain why population pyramids may indicate the wealth of a country or place?
- Do you think China's One Child Policy was successful? Give reasons for your opinion.
- Countries regulate migration with policy. Why do you think this is?

### OTHER RESOURCES

Interactive pyramids change over time for all countries. <https://www.populationpyramid.net/>

BBC KS3—Population & migration <https://www.bbc.co.uk/bitesize/guides/zkg82hv/revision/2>

### KS3 Schoology



SCAN ME

Key Term	Definition
<b>Birth Rate</b>	The number of babies born per 1000 people per year.
<b>Death Rate</b>	The number of deaths per every 1000 people per year.
<b>Densely Populated</b>	The population is high and very close together
<b>Emigration</b>	The act of leaving a country to resettle abroad. (Emigrants leaving their country)
<b>Immigration</b>	The act of moving into a country from abroad. (Immigrants entering another country)
<b>International migration</b>	The act of leaving a country to resettle abroad. (Emigrants leaving their country)
<b>Migration</b>	The movement of people from one place to another. Migrant A person who migrates from one country to another.
<b>Natural decrease</b>	When the death rate exceeds the birth rate.
<b>Natural increase</b>	When the birth rate exceeds the death rate.
<b>Overpopulation</b>	The size of the population exceeds a country's own supply of resources
<b>Population</b>	The number of 'inhabitants' of a particular place.
<b>Population Density</b>	A measurement of how many people there are per square kilometre.
<b>Population Distribution</b>	The pattern or 'spread' of where people live in the world.
<b>Population Growth</b>	BR - DR = Natural Change
<b>Population Policy</b>	A set of laws or strategies put in place by a government aimed at 'managing' the number of people in a country
<b>Population Pyramid</b>	A horizontal bar graph that represents the 'structure' or composition of a place's population by age and sex.
<b>Refugee</b>	A person who is forced to migrate as a result of unsafe conditions in their home country.
<b>Rural-Urban migration</b>	This is when people migrate from countryside areas to towns and cities.
<b>Sparsely Populated</b>	The population is low and very spread out
<b>Underpopulation</b>	Too few people to make best use of their resources of food, water, minerals, and energy

To test yourself Read, Cover, Write, Check OR try this quizlet

<https://tinyurl.com/KS3Population>

# WEATHER & CLIMATE

## 1. What is Weather and Climate?

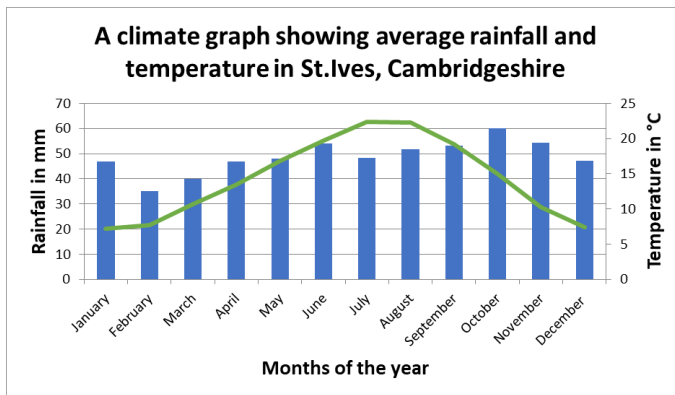
**Weather** is the day to day conditions of the atmosphere. It includes temperatures, precipitation and wind.

**Climate** is the average weather of a place or region measured over many years (usually at least 30).



## 2. Climate Graphs

A Climate graph shows Temperature and precipitation (Rainfall) on one graph and is averaged out per month.



Along the X Axis shows the months of the year.

The Y Axis on the left shows the Rainfall / Precipitation in millimetres (mm). Rainfall is measured using the left axis and the Blue Bars. Think about it like a glass of liquid you get in a bar.

The Y Axis on the right shows the Temperatures in degrees Celsius (°C) and is shown by the red line.

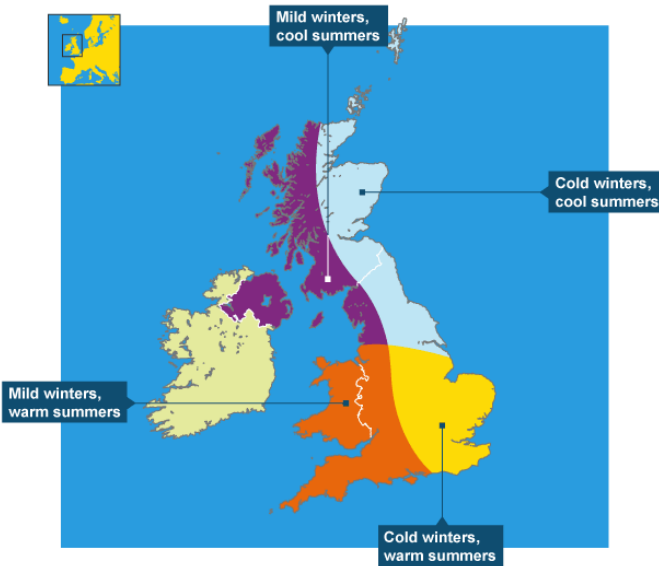
Each measurement is taken from the middle as it shows an average.

ALWAYS CHECK YOU ARE READING THE CORRECT AXIS AND THE CORRECT AREA BAR OR LINE!

## 3. The UK's Climate

The UK's has what is known as a **temperate** climate. Within the UK we have four distinct seasons. Generally winters are cool and wet and summers are warm and wet.

Temperature and rainfall also differs across the UK.



Source: <https://www.bbc.co.uk/bitesize/guides/zjk7hyc/revision/1>

**South West** – Warm and wet, warm wet air coming over the warm Atlantic Ocean.

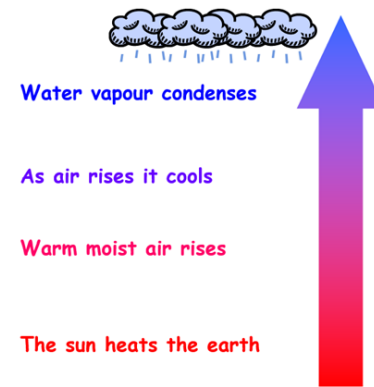
**South East** – Air comes from the west and loses its moisture so we get warm summers and cooler winters.

**North West** – Cooler air from the north Atlantic Ocean means it is wet but often warmer.

**North East** – Generally cooler air from the north east (Russia) and comes over land so drier.

## 4. Rainfall Formation

All rain forms in the same basic way—as shown in this simple diagram.



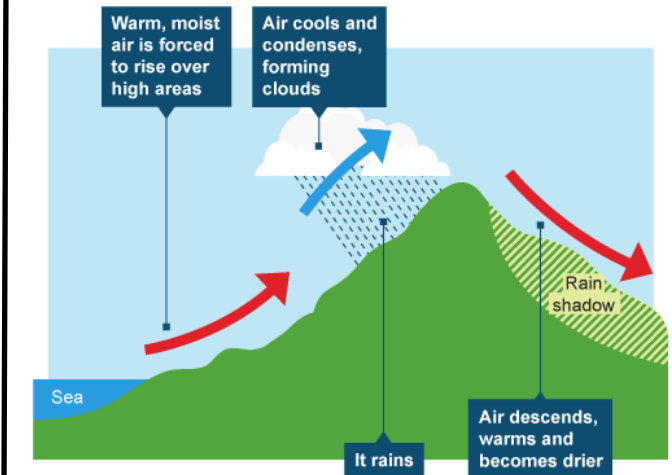
There are three types of rainfall:

1. Convective Rainfall
2. Frontal Rainfall
3. Relief Rainfall

What differs is what causes the air to rise in the first place.

### 1. RELIEF RAINFALL

- Prevailing winds bring warm, moist air to the western British Isles.
- Air is **forced to rise over high areas**.
- Air cools and condenses.
- Clouds form and it rains.
- Air descends on the other side of the mountains.
- It warms up and therefore becomes drier.



## Weather & Climate continued..

### Types of Rainfall continued..

#### 2. FRONTAL RAINFALL

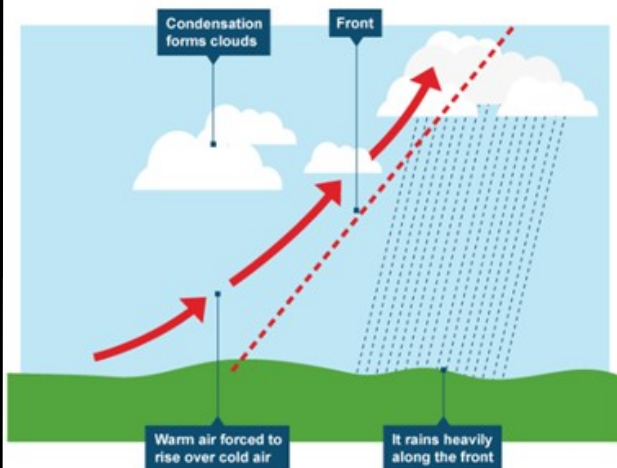
The British Isles are affected by a number of different air masses.

When warm and cold air meet, a **depression** forms:

- When a cold polar air mass meets a warm tropical air mass they do not mix - they form fronts.
- cold air is heavier than warmer air so rises over it.
- As the warm air is forced to rise it cools. As the warm air is in contact with the cold air along fronts, this also cools.
- Condensation occurs and clouds form. Rain occurs along the front.

In the UK, depressions often follow a similar pattern. First, a warm front passes over, bringing rain and then warmer air.

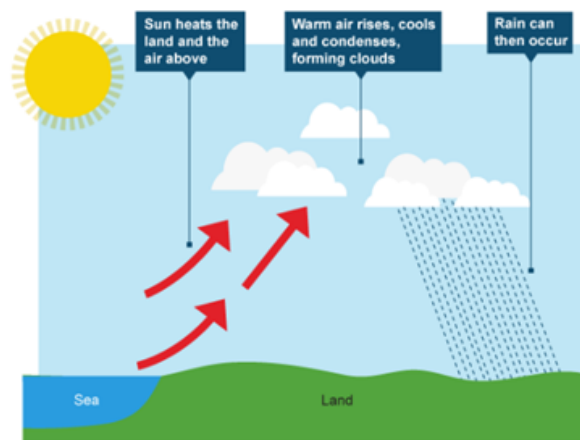
Then a cold front follows, bringing more rain and cooler air.



#### 3. CONVECTIONAL RAINFALL

- When the land warms up, it heats the air above it.
- This causes the air to expand and rise.
- As the air rises it cools and condenses. If this process continues then rain will fall.

This type of rainfall is very common in tropical areas but also in areas such as South East England during warm sunny spells.



Source of Diagrams—<https://www.bbc.co.uk/bitesize/guides/zik7hyc/revision/3>

#### 5. Cloud Types

Types of Clouds – Clouds are categorised according to height and shape.

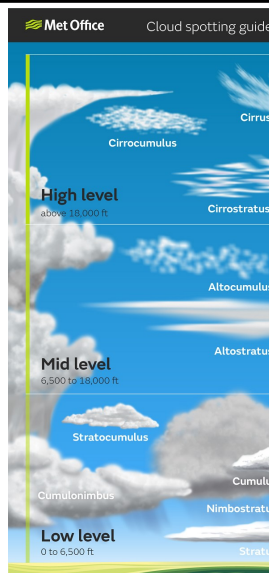
Many of the names are based on latin words.

**NIMBUS** clouds—bring with them rain.

**STRATUS** clouds—appear in layers

**CIRRUS** clouds —are wispy and high level

**CUMULO** clouds are fluffy with flat bases.



#### 6. Air Pressure

**Barometric Pressure** is the weight of the overlying air pressing down on the earth. It is also known as **air pressure**.

1. Air Pressure is measured using a Barometer.
2. **Low Pressure** means the overlying air is **rising**,
3. **High pressure** means the overlying air is **sinking**.

##### 1. LOW PRESSURE SYSTEMS

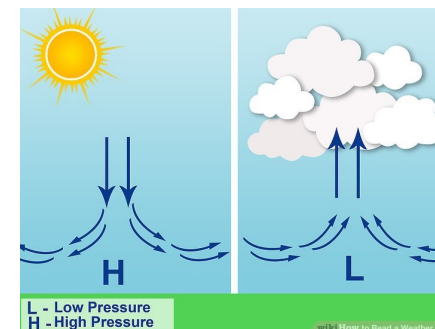
These create what is known as a **depression** and associated **wet and cloudy weather**.

- Warm air rises = Falling Pressure
- Warm air, often has water vapour, this cools to form clouds, simple water cycle.
- Wind is created as high pressure air rushes to fill the space left.

##### 2. HIGH PRESSURE SYSTEMS

These create what is known as a **anticyclones** and are associated with **calm, clear and dry conditions**

- Warm air has risen so cold air gets moved, and rushes to fill the gap so **SINKS**.
- As the cold air sinks, pressure increases.
- Closer to the ground the cold air warms up but there is no water vapour so no condensation occurs – **NO RAIN**.
- Nice and dry with clear skies. Very cold in the winter if we get high pressure. Very hot and dry in the summer if we get high pressure.



## Weather & Climate continued..

### 7. Measuring the weather

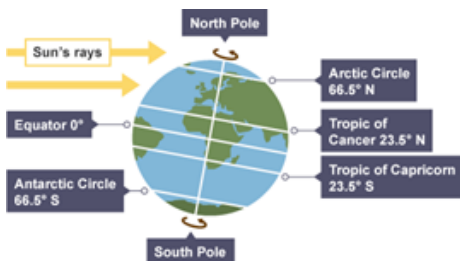
Weather Feature	How measured	Units
Temperature	Thermometer	°C
Precipitation	Rain Gauge	mm
Wind Direction	Weather /	Compass Direction
Wind Speed	Anemometer	Beaufort Scale (0-12)
Cloud cover	Observation	Oktas (measured in eighths)
Air Pressure	A barometer	Millibars
Cloud Type	Observation	Specific Names given
Visibility	Visibility Meter	In feet and metres

### 8. Factors affecting Weather and Climate

There are a number of factors which affect the weather / climate of a place.

#### 1. LATITUDE

This relates to how far a place is from the equator. Closer to the equator places are hotter with the sun directly overhead. Closer to the poles, sunlight has a larger area of atmosphere to pass through (due to curvature of the earth) and temperatures are cooler.



#### 2. ALTITUDE (Height above sea level)

Temperatures higher up are colder. Temperature usually decreases by 1°C for every 100m increase in height.

#### 3. DISTANCE FROM THE SEA

Oceans heat up and cool down slower than land—so coastal areas are cooler in summer and warmer in winter than places inland at the same latitude and altitude.

#### 4. OCEAN CURRENTS

A warm area of water (ocean current) known as the North Atlantic Drift (Gulf Stream), travels up from the Caribbean and keeps Britain warmer and wetter than places in continental Europe.

#### 5. PREVAILING WIND

The main direction from which wind comes will affect the weather. In the UK, the prevailing wind is from the SW—this brings warm, moist air from the Atlantic and contributes to frequent rainfall.

### 6. Extreme Weather—Tornadoes



### HOW DO TORNADOES FORM?

Tornadoes are violent rotating columns of air extending from a thunderstorm to the ground. They appear as a funnel shape cloud initially and when they touch down they are called a tornado.

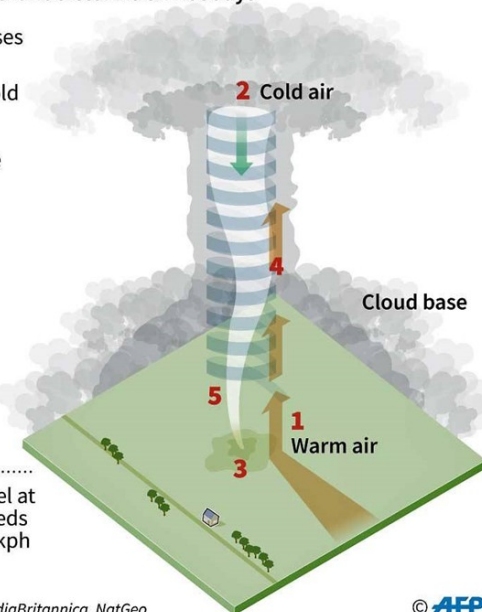
Tornadoes can reach speeds of up to 300mph causing huge amounts of damage.

Most tornadoes form from thunderstorms, often supercell thunderstorms, which are long-lived and can produce very violent tornadoes.

### Tornado formation

Twisters develop in thunderstorms on hot days

- 1 Warm, moist air rises from the ground
- 2 Warm air meets cold dry air, creating a vortex which descends from the storm cloud
- 3 Vortex makes contact with the ground
- 4 Updraft draws in more air, rises while rotating
- 5 Tornado spins at speed, creating a destructive force in its path



Most tornadoes travel at 16-32 kph, wind speeds can reach up to 400 kph

Sources : NOAA, Encyclopaedia Britannica, NatGeo

© AFP

### WHICH AREAS ARE MOST AT RISK?

Tornadoes have been recorded in all continents apart from Antarctica. Most tornadoes form in an area known as **Tornado Alley** in the USA where there are the ideal conditions with cold dry air moving south from Canada and warm moist air travelling north from the Gulf of Mexico.

May and June are peak months for tornadoes. The most notable tornado in the UK was in Birmingham in 2005 in which a row of houses were destroyed (no one was killed).



## Weather & Climate continued..

### HOW DO WE MEASURE TORNADOES?

Tornadoes are measured on the Fujita scale. The scale is based on the amount of damage the tornado causes in terms of to buildings and trees etc. It goes from F0 to F5.

#### Enhanced Fujita Scale (EF-Scale)

EF0	65 to 85 MPH
EF1	86 to 110 MPH
EF2	111 to 135 MPH
EF3	136 to 165 MPH
EF4	166 to 200 MPH
EF5	201+ MPH

Source: <https://www.factsjustforkids.com/>

### APPLYING YOUR KNOWLEDGE...

- What is the difference between weather and climate?
- Name at least 4 pieces of equipment we use to measure the weather and what they do? What units do they record in.
- State 5 factors that affect the weather and explain why they changes it in different places.
- What are the three types of rainfall and how do they form?
- What is a tornado and how do they form?

### Now Challenge yourself even further!

- Storm Chasers, what are they and what do they do?
- Extreme weather in the UK – What examples can you find and what are the causes?
- Try and create either a 3D Rainfall model or Animation – showing either convectional, frontal or relief rainfall with annotations placed in some way.
- Weather Forecast – watch this video on how are weather forecasts made? <https://www.bbc.co.uk/news/explainers-51533852>
- <https://study.com/academy/lesson/weather-forecasting-definition-types.html>
- Explore how to read a synoptic chart <https://www.metoffice.gov.uk/weather/learn-about/weather/how-weather-works/synoptic-weather-chart>
- Find out what is meant by Blood Rain <https://www.metoffice.gov.uk/weather/learn-about/weather/types-of-weather/rain/blood-rain>

### OTHER RESOURCES

**BBC KS3 Bitesize—Weather and climate** <https://www.bbc.co.uk/bitesize/topics/zx38q6f>

**Climate, Weather and Cloud types Quiz** <https://www.bbc.co.uk/bitesize/guides/zw9qtfr/test>

**British weather and climate quiz** <https://www.bbc.co.uk/bitesize/guides/zjk7hyc/test>

**The MET Office** <https://www.metoffice.gov.uk/>

**Climate Kids—NASA** <https://climatekids.nasa.gov/menu/weather-and-climate/>



SCAN ME

Key Term	Definition
Air mass	A mass of air with the same temperature and humidity
<b>Air Pressure</b>	The force or weight of the air above us. Air pressure is measured in millibars
<b>Altitude</b>	How high land is above sea level ( in metres or km above sea level)
<b>Anemometer</b>	A weather instrument used to measure the wind speed
<b>Anticyclone</b>	An area of high pressure—causes clear skies and sunny weather
<b>Atmosphere</b>	A layer of gases surrounding the planet
<b>Barometer</b>	A weather instrument used to measure air pressure
<b>Beaufort Scale</b>	The scale used to determine wind speed through observations of the effects of the wind
<b>Climate</b>	The average weather conditions for a place, usually measured over a long period of time (30 years)
<b>Climate Graph</b>	A graph showing average month temperature & rainfall
<b>Clouds</b>	A collection of tiny droplets of water or ice crystals in the air
<b>Cloud Cover</b>	The amount of cloud covering the sky
<b>Convectional Rainfall</b>	Rain formed when the ground heats up during warm, sunny weather
<b>Frontal Rainfall</b>	Type of rainfall formed when two air masses meet.
<b>High Pressure</b>	When air pressure is higher than average caused by sinking air
<b>Latitude</b>	How far a place is north or south of the equator
<b>Low Pressure</b>	When air pressure is lower than average—caused by rising air
<b>Ocean Currents</b>	Movements of warm or cold water around the world's oceans
<b>Precipitation</b>	Any type of moisture reaching the Earth's surface (rain / snow / sleet)
<b>Rain Gauge</b>	Used to measure amount of rain in 24hr period (in mm)
<b>Relief Rainfall</b>	Rain formed when air is forced to rise over hills/mountains
<b>Stevenson Screen</b>	A shelter for weather instruments to protect from extremes
<b>Temperature</b>	How warm or cold the air is (measured in °C or °F)
<b>Thermometer</b>	Used to measure temperature
<b>Tornado</b>	A violently rotating column of air in contact with the ground
<b>Weather</b>	Daily changes in condition of the atmosphere
<b>Wind Direction</b>	Direction from which the wind is blowing from
<b>Wind Speed</b>	How fast the wind is blowing—measured in miles / km per hour.

To test yourself Read, Cover, Write, Check OR try this quizlet  
<https://tinyurl.com/KS3weather>

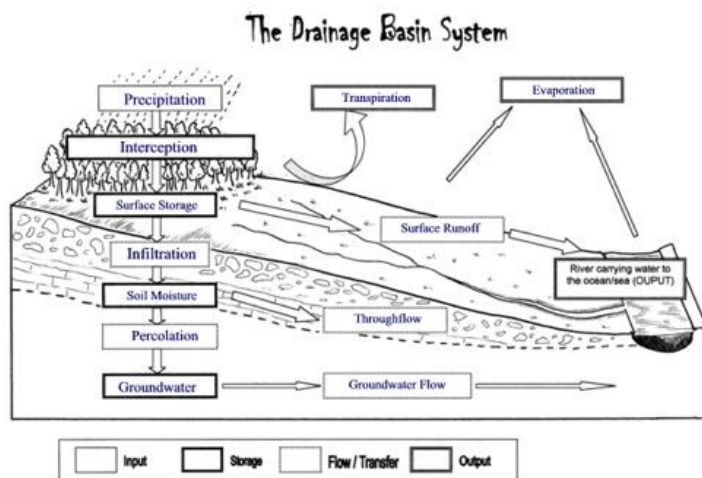
# RIVER LANDSCAPES

## 1. Why are rivers important?

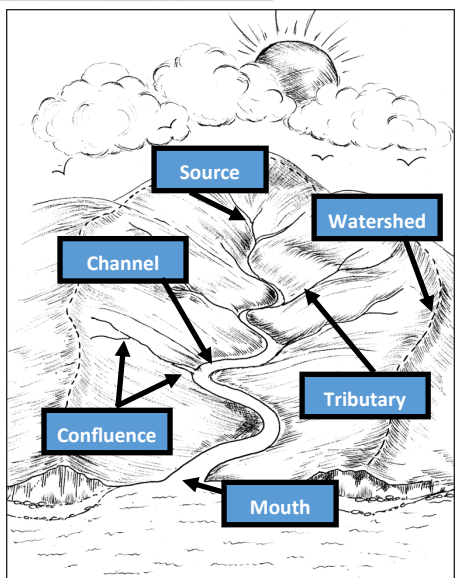
Rivers are important because they **shape the landscape**, **supply us with water**, influence the location of settlements and provide us with a means of **travel**, **power** and **recreation**.

## 2. How does water flow into rivers?

The water cycle is the journey water takes between the **hydrosphere** (water), **atmosphere** (air) and **lithosphere** (land). At it's most simple, this involves evaporation, condensation and precipitation



A drainage basin is an area of land which feeds a river. The rain falling in this area will flow into the **river channel** and travel from **source** to **mouth**. The division between drainage basins is called the **watershed**. Where two rivers meet is called the **confluence** and smaller rivers feeding a bigger one is known as a **tributary**.



## 3. What work do rivers do?

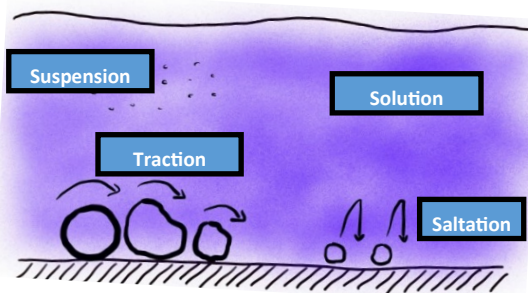
Rivers flow downhill due to gravity. Where the gradient of a river is steep, more energy is provided to erode the landscapes. Material found within a river is known as the **load** and this material is **transported** and **deposited** downstream.

### 1. River Erosion.

There are four types of river erosion: **abrasion**, **attrition**, **hydraulic action** and **corrosion**. (see key term glossary)

### 2. River Transport

The greater the volume of water in the river, the more energy it will have to transport material. There are four different ways in which a river may transport material: **suspension**, **solution**, **saltation** and **traction** (see key term glossary)



## 3. Deposition

Deposition takes place when the river no longer has the energy to carry material, so it is dropped. The larger rocks are dropped first due to the greatest weight.

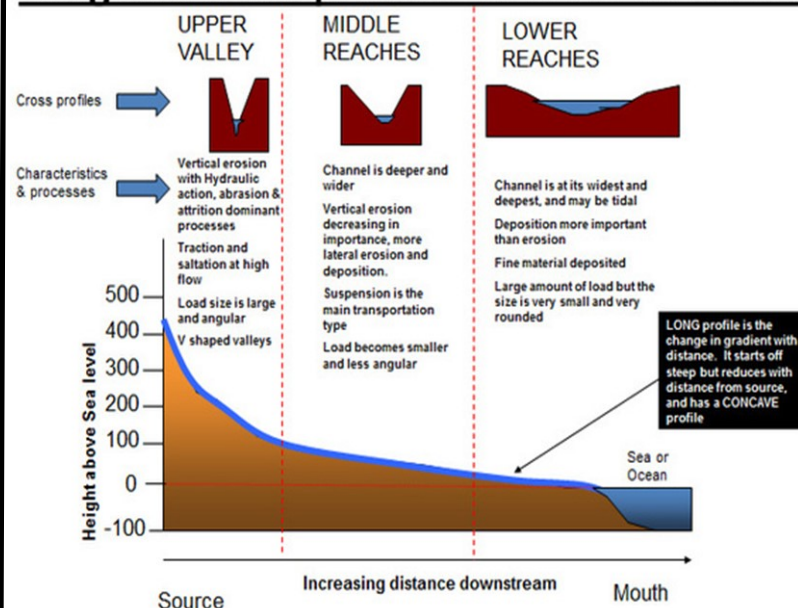
Deposition will occur where:

- the gradient of the river or the volume of water decreases
- the water slows down on the inside bend of a river
- the river channels becomes shallower
- the river enters a lake or the sea.

## 4. How do rivers change from source to mouth?

Although no two rivers are the same, many share a similar **long profile**, which shows a change in the gradient of a river from source to mouth. A **cross profile** shows the gradient of slopes across the valley.

## Long and cross profiles on a TYPICAL river



### Changes in the Valley Downstream

In the upper course of a river the gradient is steeper and the valley have steep v-shaped valley sides and narrow valley floors, as it moves further downstream the valley gets flatter and much wider.



### Changes in the River Channel Downstream



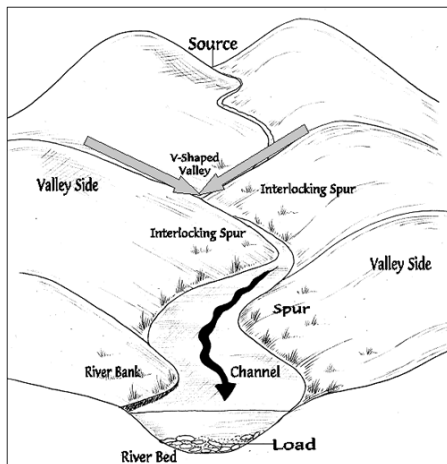
## RIVER LANDSCAPES continued..

### 5. How do rivers shape the land?

The processes of erosion, transport and deposition also have a key role in the formation of other river landscapes such as **v-shaped valleys**, **waterfalls** and **meander**, **flood plains** and **oxbow lakes**.

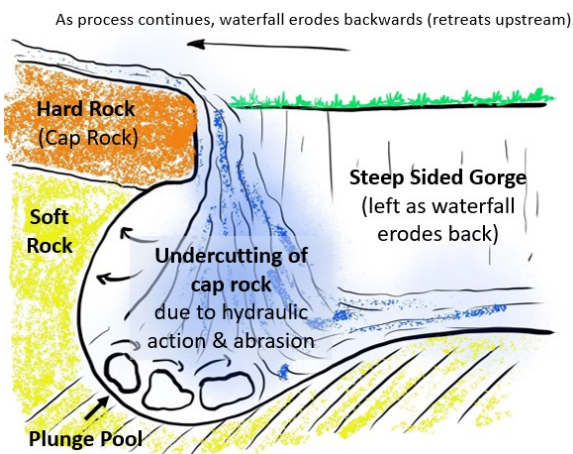
#### 1. V-Shaped Valleys

In the upper course, the river cuts down **vertically** into the bed, creating **v-shaped valleys**. Where the river does not have the power to cut through hills it winds around them leaving **interlocking spurs**



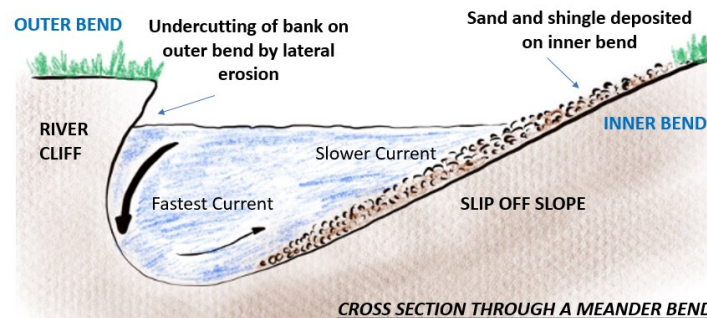
#### 2. Waterfalls

A waterfall forms at a steep drop in the long profile of a river, **where a hard layer of rock lies over a softer, less resistant rock**. A deep pool forms at the base of the waterfall called a **plunge pool**.



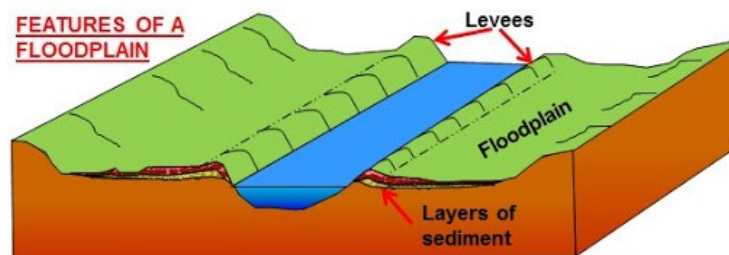
#### 3. Meanders

A meander is a bend in the course of a river. On the outside of a meander the water is deeper and the current flows faster. The force of water undercuts the bank of the outside bend, forming a steep bank. This is called a **river cliff**. On the inside bend the current is slower, sand and pebbles are deposited forming a gentle **slip off slope**.



#### 4. Floodplains

Lateral erosion (where the river is eroding into its banks) occurs at the lower stage of the river, forming a wide flat valley called a **flood plain**. As a river floods it deposits material, continuing to build up a flat wider floodplain.

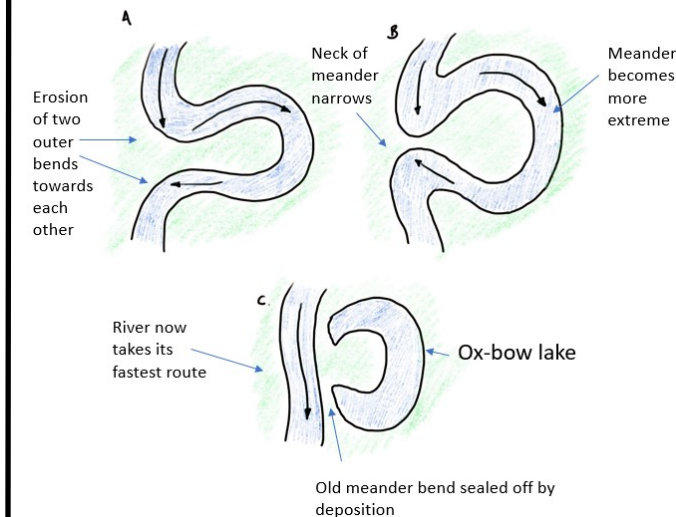


#### 5. Ox-Bow Lakes

Sometimes when the loop of a meander becomes extreme, two erosion banks can meet at a narrow neck. Eventually the channel can cut through leaving an **ox-bow lake**.



#### OX-BOW LAKE FORMATION



### 6. How are rivers important to people?

Historically settlements grew up next to rivers. River water supplied drinking water, narrow points along a river channel provide bridging points and a focus for roads, where people could trade, leading to a growth of a settlement. The mouth of a river can also provide a deep and wide natural harbour. For example, the mouth of The River Tees has developed into a large port which brings in raw materials for industries located in the area.



## RIVER LANDSCAPES continued..

### 7. How do river floods create problems?

A flood occurs when a river has too much water in its channel. The water in the river overflows its banks and spreads out onto the surrounding area.

#### The Causes of River Flooding

PHYSICAL CAUSES	HUMAN CAUSES
Heavy, prolonged rainfall	River Management
Saturated Soil	Deforestation
Impermeable rock	Urbanisation
Steep Gradient	

### 8. The effects of Flooding

Flooding can have the follow types of effects:

**ECONOMIC EFFECTS**—cost of damage to buildings, loss of crops, insurance costs, damage to cars.

**ENVIRONMENTAL EFFECTS**—loss of habitats, land flooded, pollution of freshwater

**SOCIAL EFFECTS**—deaths, stress and anxiety, closure of schools etc.

### 9. Managing Floods

The Environment Agency (EA) is a governing body that has responsibility for the protection and enhancement of the environment in the England.

They also manage the risk of flooding and making people aware of how they can protect themselves and their property, using a combination of **hard and soft engineering approaches**. **Hard Engineering** being man-made artificial structures which try and control rivers.eg. building a raised bank. **Soft Engineering** being where more natural methods are used.eg. planting trees which uptake water.

#### Hard Engineering

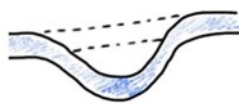
1. Build dams and reservoirs



2. Raise banks & dredge the river bed



3. Straighten rivers to speed up flow



4. Build Concrete Walls.



#### Soft Engineering

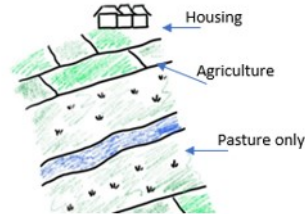
1. Warn and educate people



2. PLANTING TREES (more interception)



3. LAND-USE ZONING



#### APPLYING YOUR KNOWLEDGE...

- Describe the main changes in a river and its valley as it moves from source to mouth.
- Describe and explain how a meander is formed.
- Outline the ways in which the risk of flooding can be re-

#### Now Challenge yourself even further!

- *Try and find out what is meant by the Bradshaw Model*
- *Investigate the causes, effects and responses to flooding in York or Bangladesh.*
- *Through research create a poster to show how the River Severn changes from source to mouth.*

**Challenge Question:** In what ways can an increasing population lead to an increased flood risk?

#### OTHER RESOURCES

BBC KS3 Bitesize—Rivers and Water  
<https://www.bbc.co.uk/bitesize/topics/zs92tfr>  
 River Flooding <https://www.bbc.co.uk/teach/class-clips-video/geography-ks3-river-flooding/zmdq7nb>

#### KS3 Schoology



SCAN ME

Key Term	Definition
<b>Abrasion</b>	Rocks hitting into and scraping against the river bank wearing it away
<b>Attrition</b>	Rocks hitting into each other becoming smaller & rounded
<b>Biological Weathering</b>	The breakdown of rocks caused by living plants and creatures (e.g. roots forcing themselves into rock).
<b>Chemical weathering</b>	The breakdown of rocks by chemicals in the rock reacting with air and water
<b>Condensation</b>	The change in state from a gas to a liquid
<b>Confluence</b>	The point where two or more river channels join
<b>Drainage Basin</b>	The area of land drained by a river (i.e. land where a river gets its water from.
<b>Evaporation</b>	The change in state from liquid to gas
<b>Groundwater Flow</b>	The transfer of water through the ground back to the sea or river
<b>Hydraulic Action</b>	The force of water hitting the bank and squeezing air into cracks in rocks causing mini explosions
<b>Infiltration</b>	The movement of water into the ground from the surface
<b>Interception</b>	Where leaves on trees / plants stop rain reaching the ground
<b>Mouth</b>	The point at which a river meets the sea
<b>Physical Weathering</b>	The breakdown of rock caused by the effects of changing temperature in rocks & the effects of wind and rain.
<b>Precipitation</b>	Any moisture falling from the sky—including rain, snow, sleet and hail
<b>River Channel</b>	The path through which the river flows (consisting of bed and banks)
<b>Saltation</b>	Medium sized rocks 'bounced' along bed
<b>Solution</b>	Where minerals in rocks are dissolved by the water
<b>Source</b>	Starting point of a river
<b>Surface Runoff</b>	The movement of water over the surface of land into the rivers (also known as overland flow)
<b>Suspension</b>	Small material actually carried in the flow of the water
<b>Throughflow</b>	The horizontal movement of water through the soil
<b>Traction</b>	Large material rolled along bed of river.
<b>Transpiration</b>	The evaporation of water from the leaves of trees and plants
<b>Tributary</b>	A small river or stream which joins a larger river
<b>Watershed</b>	The invisible land (marked by high land) marking the edge of a drainage basin.

To test yourself Read, Cover, Write, Check OR try this quizlet <https://tinyurl.com/KS3Rivers>

# 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.



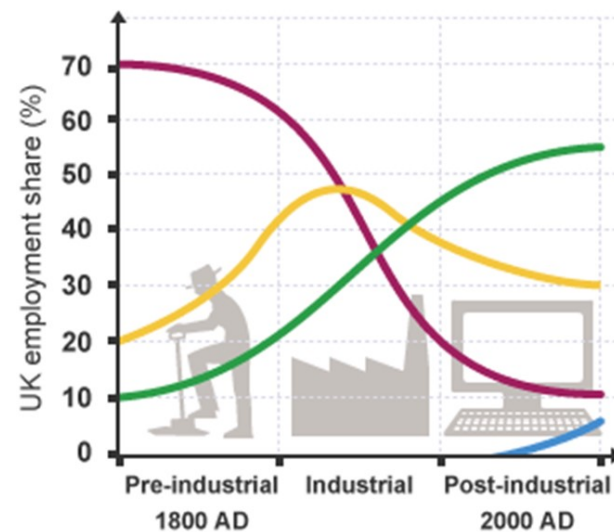
**QUATERNARY SECTOR**—this involves re-search and development into new technologies / ideas e.g. research into renewable energy.



## 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:*

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

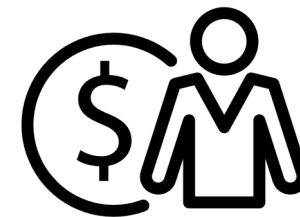
*There are **FEWER** people working in **secondary industries** due to:*

- **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.

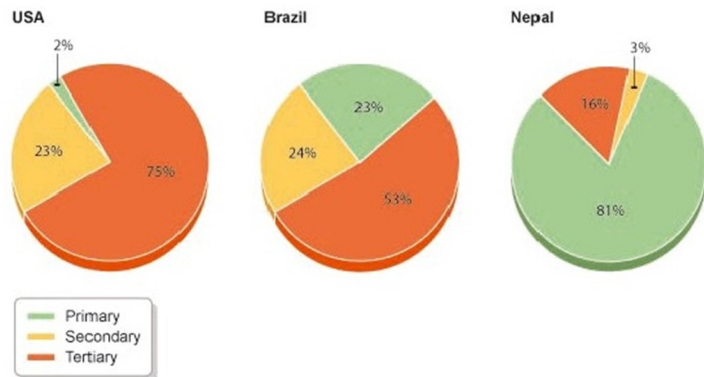
*There are **MORE** people working in **tertiary industries** due to:*

- 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?



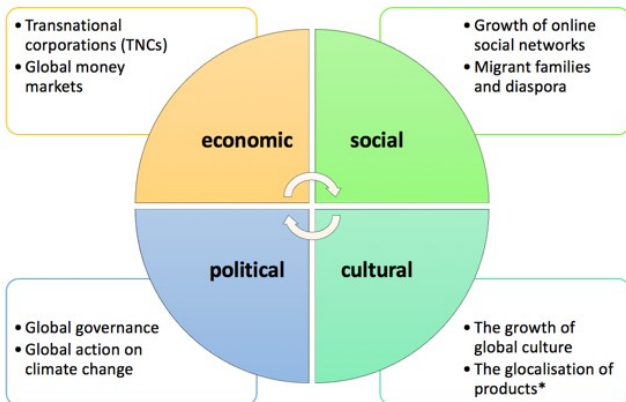
Poorer countries, such as Nepal (see above) still have a high proportion of people working the primary sector. As countries industrialise and develop, there is a growth in the secondary sector. Well developed countries have the highest levels of people working in the tertiary sector.

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



# RUSSIA

## 1. Geography of Asia

Asia is an important continent containing 2 of the world's most populated countries (India and China) and also some of the world's most economically important economies (Japan) and a global superpower (Russia). There are 48 countries in Asia.

Test yourself on the following:

- Largest country by land area – Russia
- Biggest Island – Borneo
- Longest River - Yangtze
- Biggest lake – Caspian Sea
- Biggest desert – Gobi desert



## 2. Basic Geography of Russia and major features



Source: <https://www.worldatlas.com/>

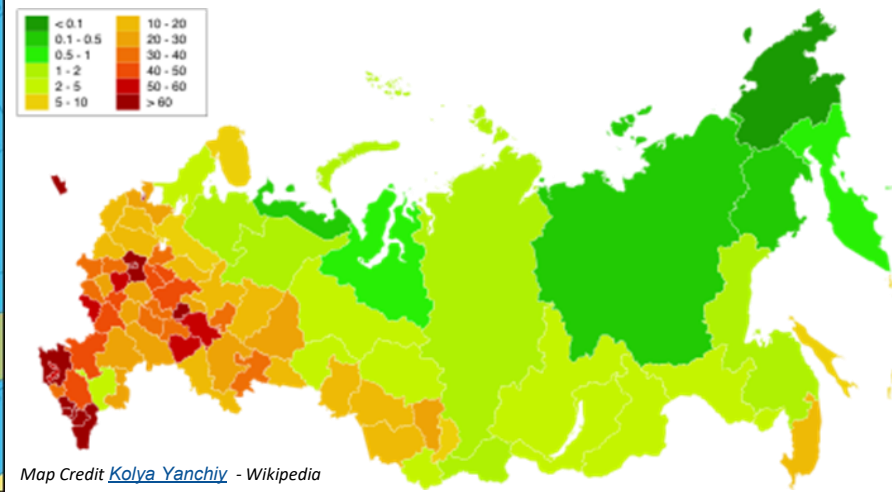
### Physical Features

Major rivers – Volga, Ob, Yenisey

Ural Mountains – these divide Western from Eastern Russia

Lake Baikal - Lake Baikal is located in SE Russia and is the largest freshwater lake in the country. It is the deepest lake in the world at 1600m deep. It is nearly 400 miles long and contains 1/5 of all freshwater stored on land. The lake is home to more than 1800 species, many endemic to the area. Important industries include fishing, mining, paper production and tourism.

### Human Geography—Population Density



Map Credit [Kolya Yanchiy](#) - Wikipedia

Source: <https://geology.com/world/asia-satellite-image.shtml>

## RUSSIA continued..

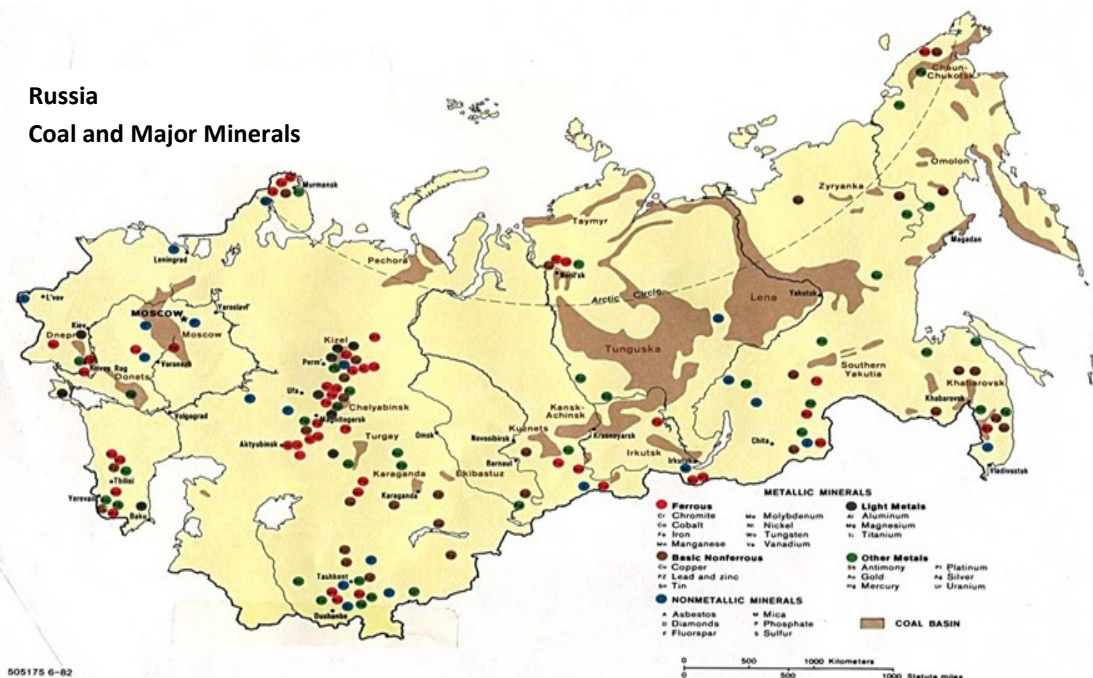
Densely populated cities in the West include Moscow and St Petersburg. These are located here due to good trade links with Europe and a more temperate climate than the East which is better for growing food. Sparse populations in the East and North are the consequence of difficulties of access, transport and the extreme climate in much of Northern and Eastern Russia.

### Natural resources of Russia

Russia exports more than 3,000,000 barrels of oil to European countries per day, making Europe very reliant on Russian exports. Russia also provides a large percentage of coal and gas used in Europe. Russia also has abundant supplies of many other metals and minerals which means that they can supply many of their own industries without being reliant on imports from other countries.

#### Russia

#### Coal and Major Minerals



Source: <http://www.1uptravel.com/worldmaps/russia48.html>



Oymyakon

### 4. Permafrost and issues of building on frozen ground.

Permafrost is permanently frozen ground—frozen for two or more consecutive

Windows

Roof

Walls



Stilts

Foundations

You should be able to annotate key ways in which buildings are designed to manage the permafrost environment. (skills) – Walls and windows are heavily insulated, houses are raised to avoid melting permafrost base, roof has steep angle to quickly clear snow and ice.

Raised pipes to carry oil and gas.

People eat a lot of protein based foods eg. fish and meat due to lack of fresh fruit and vegetables

### 3. Oymyakon—The world's coldest inhabited place

Oymyakon is the world's coldest inhabited settlement with a lowest recorded temperature of -71 degrees centigrade. The town is built on permafrost which means the soil is permanently frozen. This means no food can be grown so the diet is very focused around meat and fish. It is too cold for indoor plumbing for toilets so these have to be located outside. Transport can be an issue as even fuel and oil can freeze at these temperatures.

# RUSSIA continued..

## 5. Dzerzhinsk—The World's most polluted city

38 chemical factories still producing toxic chemicals. During Soviet era the town produced chemical weapons including Arsenic. Average life expectancy is 42 for men and 47 for women. Dzerzhinsk has been the focus of recent investment in an attempt to clean up the town.

## 6. Indigenous peoples of Russia—the Nenets

The Nenets inhabit the Yamal peninsular, an area in Northern Russia which has becoming increasingly important as a source of oil and gas.

Traditionally, the Nenets live in tents – they rely on the reindeer for food, shelter and transport. They migrate annually between reindeer feeding grounds.

Melting permafrost is damaging the reindeer as cannot migrate as easily.

Oil and gas exploration is taking away the land from the Nenets and they are being moved to towns and cities, removing traditional ways of life. Also, pollution from oil and gas is damaging the ecosystem leading to less feeding areas for the reindeer.



## 7. Scramble for the Arctic —Issues of resource exploitation

Russia has put a flag on the sea bed to lay claim to areas of arctic territory. Global warming is melting arctic ice, opening up new areas for exploitation.

Russia has many oil and gas operations in the Arctic. Other countries also lay claim to the Arctic.



Sources: IBRU, Durham University;  
Ministry of Foreign Affairs of Denmark

Source: <https://www.economist.com/international/2014/12/17/frozen-conflict>

There are implications for global trade as melting ice opens up the Northern Sea Route across the Arctic. This is likely to cause conflicts between countries.

## Global Warming Opens Arctic Passage For Container Ships

Northern and southern sea routes between Europe and East Asia in comparison

- Current Route
- Northern Sea Route

Shipping on the Northern Sea Route can save up to 14 days over the Suez Canal route



\* By 24th August

Sources: High North News, Barents Observer, Süddeutsche Zeitung

statista

# RUSSIA continued..

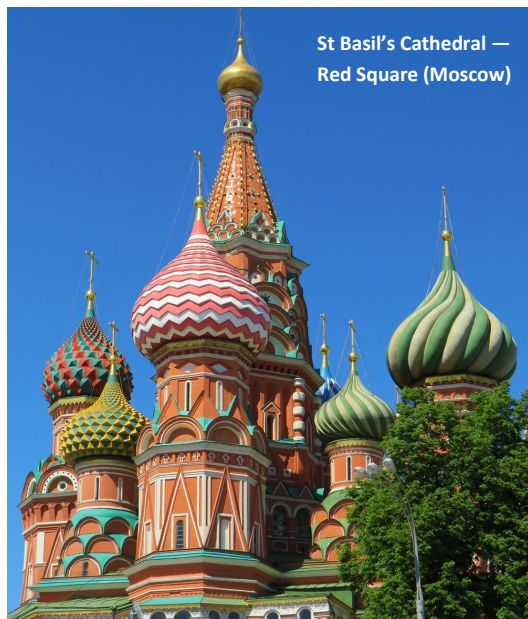
## TOURISM

### Claiming the Arctic

Russia has filed a revised claim with the UN for disputed territory



Source: <https://phys.org/news/2015-08-russia-vast-swathe-arctic.html>



## APPLYING YOUR KNOWLEDGE...

- Explain why the population density varies across Russia
- Describe 3 ways in which people have adapted to living in the cold Arctic temperatures
- Explain why Dzerzhinsk is such a polluted city
- Describe some impacts of global warming on the Nenets people
- Contrast 2 different biomes which are found in Russia
- Explain why the natural resources found in Russia help to make Russia a 'Superpower'.

### Now Challenge yourself even further!

- What impacts do you expect climate change to have on the indigenous people of Russia in the future?
- How will the opening of the Northern Sea Passage affect the geopolitics of the Arctic region?

## OTHER RESOURCES

- Extended video on the Nenets <https://www.youtube.com/watch?v=Sykmh7V0eSQ>
- Interactive room at the museum of Hetscheepvaart <https://www.hetscheepvaartmuseum.com/whats-on/exhibitions/Scramble-for-the-Arctic-and-Rising-Tide>
- Life with the Nenets <https://tinyurl.com/lifewiththeNenets>

## KS3 Schoology



To test yourself Read, Cover, Write, Check OR try this quizlet <https://tinyurl.com/KS3Russia>

Key Term	Definition
Asia	The continent occupying the area between Japan in the East, Turkey in the west, India in the South and the Arctic in the North.
Biome	A large area with common flora, fauna and climate characteristics
Chemical Waste	Toxic chemicals released as a by product of industrial activity, often have negative effects on the environment
Continent	A large continuous area of land, usually including many different countries and islands.
Country	A politically determined area of land and sea ruled over by a single government
Dense Population	An area where many people are found per square km
Dzerzhinsk	The most polluted city on earth
Geopolitics	The relationships between countries and the efforts to manage these relationships
Indigenous	Group of people with a long history of settlement in one ecosystem/ area
Methane	A greenhouse gas
Migration	The movement of people from one place to another
Natural resources	Products that are found naturally in a country eg. forests or oil
Nenets	An indigenous group of people native to the Arctic tundra region of Yakutsk
Omyakon	The coldest populated city on earth
Permafrost	Permanently frozen subsoil
Plain	A large area of land with little variation in height
Pollution	Chemicals or products released into the environment which are damaging to plants, animals or people
Reindeer	A species of deer native to Arctic areas used by indigenous people for transport, food, clothing and shelter
Sparse Population	An area where few people are found per square km
Steppe	A biome found in temperate regions characterised by flat grasslands
Superpower	A country which exercises political, economic or military power over a large area beyond its own national borders
Taiga	A biome found in colder areas characterised by evergreen coniferous forests
Time Zone	An area of land which operates a common time policy
Toxicity	The level to which a substance is harmful to humans and wildlife
Tundra	A biome found in cold areas with permanently frozen subsoil