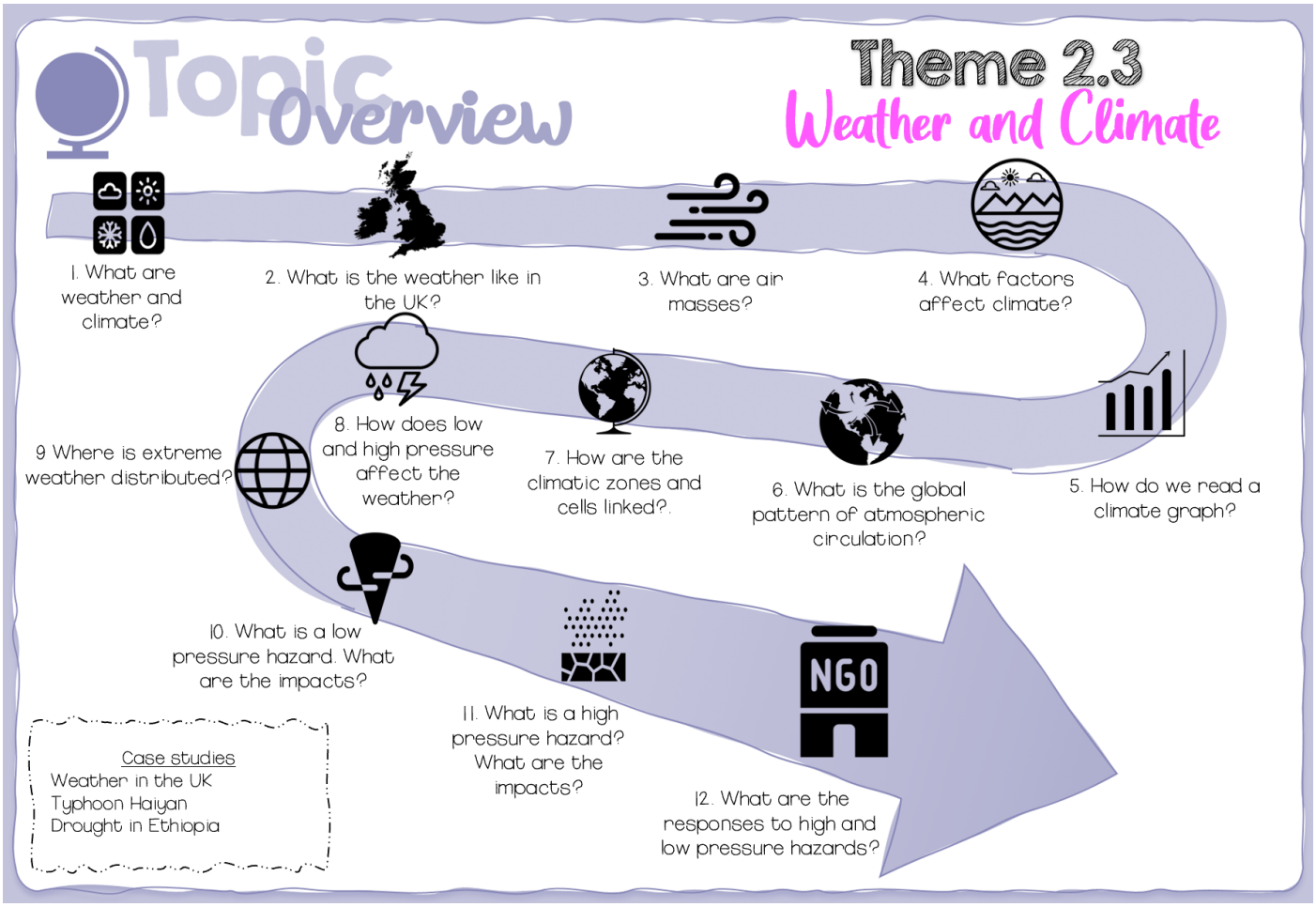
GCSE Geography

Weather & Climate

Name _____ Group _____



Past Exam Questions

> 'The challenges faced by the Philippines after Typhoon Haiyan are the same as those found in any area affected by a tropical storm.
>
> Give reasons to support why you agree or disagree with the statement. (8)

Explain the formation of a tropical storm (4)

Describe the weather associated with a low-pressure system (4)

Explain the relationship between climatic zones and convection cells (6)

Explain two factors which affect climate (4)

Using a named example analyse the impacts of a low pressure weather event on different groups of people (8)

Theme 2: Changing Environments

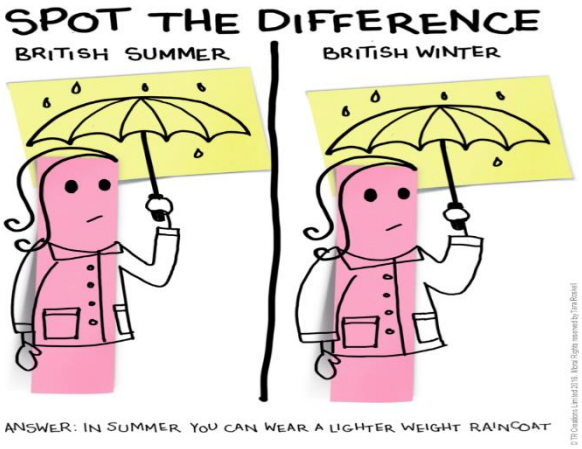
Key Idea 2.3 Weather and Climate

Keyword	Definition
Altitude	Height above sea level
Anticyclone	Areas of high atmospheric pressure.
Atmosphere	A complex mass of gases, liquids and solids that surround the Earth.
Atmospheric Circulation	Circular movement of air within the Earth's atmosphere.
Cells	Sections of the Earth's atmosphere where air moves in circular motion – Hadley, Ferrel and Polar Cells.
Climate	The typical weather conditions over a long period of time.
Climate Change	A long-term change in the Earth's climate.
Coriolis Effect	The spinning effect caused by the rotation of the Earth.
Depression	Areas of low atmospheric pressure.
Drought	A long, continuous period of dry weather.
Eye of the Storm	A small area at the centre of a storm which is relatively calm.
Eye Wall	The outer edge of the storm with the strongest winds.
Global Warming	The increase in global temperatures.
High Pressure	A region of atmospheric pressure which is higher than the surrounding environment. It often brings fine weather.
Jet Stream	A narrow ribbon of air that encircles the globe and causes weather systems to cross over the UK.
Low Pressure	Where warm air meets cold air. Usually poor weather conditions.
Pressure Belts	Zones of high/low pressure that encircle the Earth between cells.
Saffir-Simpson Scale	Scale used to measure the strength of hurricanes based on wind speed.
Storm Surge	A wall of water often 3-4m high, driven onshore by a hurricane.
Tropical Storm	An area of low pressure with spiralling destructive winds. Also called a hurricane, cyclone or typhoon.
Troposphere	The lowest region of the atmosphere.
Variation	A change or difference in condition.
Weather	The day to day conditions of the atmosphere.
Weather Hazard	Extreme weather events that pose a threat to humans and/or property.

Lesson 1: What is the UK Climate like?
LO: What are the characteristics of the UK climate including seasonal variations?

Do Now: Complete the key word test.

Keyword	Definition
BIOME	
	An animal that only consumes plant material.
TUNDRA	
	An animal which feeds on dead organic material, especially plant detritus.
TERTIARY CONSUMER	
PRIMARY CONSUMER	
	A reddish clay material which forms the topsoil in some tropical areas
FOOD WEB	
LATITUDE	
	The non-living parts of an ecosystem e.g. sunlight



What does this cartoon suggest?

Match the key words to the definitions

Weather		Rain, snow, sleet or hail that falls to the ground.
Climate		The state of the atmosphere at a particular place and time as regards heat, cloudiness, dryness, sunshine, wind, rain etc.
Precipitation		The weather conditions prevailing in an area in general or over a long period of time (usually 30 years)

Describe the climate in the British Isles

What are the regional variations?

North West	North East
South East	South West

What is an air mass?

How do air masses affect the weather in the UK?

What are the 6 main air masses that affect the UK?

Where do maritime air masses originate?	
Where do continental air masses originate?	

1. Draw arrows onto the map and label them to show which directions the air masses come from. Read each statement carefully as this will help you to locate the air masses.
2. Colour the maritime airmasses in blue and the continental airmasses in red.

Polar Maritime: This air mass travels across the ocean from Greenland. It brings with it wet and cold air. The weather will be cold and showery. This is very common in the UK. There can be heavy showers in hilly areas. There are often strong winds and gales.
Returning Polar Maritime: This air mass comes from Greenland but travels down the Atlantic Ocean picking up more moisture. It brings unstable changeable weather where there is a lot of cloud and rain showers.
Polar Continental: This air mass travels across Siberia and Russia bringing cold air to the UK. It brings dry summers and snowy winters. It can bring very cold temperatures. There is a high wind chill factor. When snow falls, it can last for several days.
Tropical Continental: This air mass travels up from Africa bringing with it hot dry air to the UK. It brings will it hot weather and stable conditions. There are usually storms after this air mass has moved over the UK
Tropical Maritime. This air mass travels across the warmer parts of the Atlantic Ocean. It brings cloud and rain but the weather will be warmer. This is very common. It brings thick clouds cover. There is often fog at the coasts.
Arctic Maritime. This air mass travels down from the Arctic. It brings with it freezing weather conditions. In the winter, it brings wet weather and snow. This air mass is rare in summer. There is often snow in Scotland with this air mass and heavy showers. Hail is common. It is very windy.

Read through the text and add annotations to your blank UK map. Describe the variations.
Challenge: Use the climate graphs on Teams to add evidence to your map.

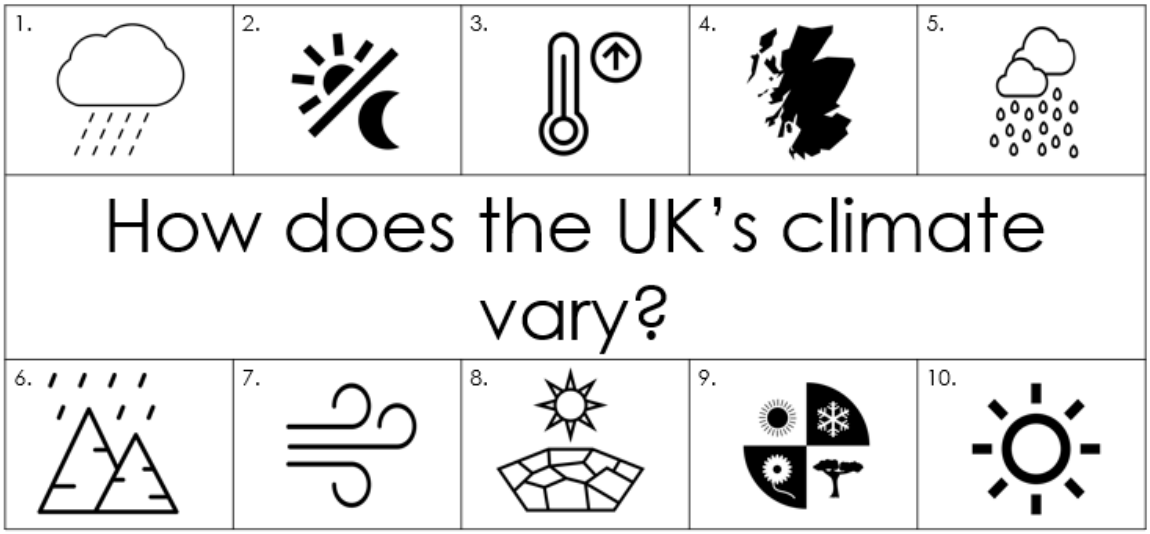
1. **Sunshine hours** are greatest along the south coast of England (average of 1,750 hours of sunshine per year) and are least in mountainous areas (average less then 1,000 hours).
2. **Daylight hours** - Scotland has shorter winter days and longer summer days than the rest of the UK, because it is further north. In north Scotland there are four more hours of daylight in midsummer than in London.
3. **Rainfall**
   - On average it rains one in three days in the UK. However, rainfall varies greatly from region to region. It is generally wetter in the west than the east and wetter in the highlands than the lowlands. The wettest place is Snowdonia in Wales (average annual totals exceeding 3,000 mm of rain a year), followed by the Highlands of Scotland, the Lake District, the Pennines and the moors of South West England.
   - Parts of the east, such as East Anglia, receive less than 700 mm a year.
   - In most places in the UK it will rain twice as much in winter months as in summer months. Although in central and South East England, and parts of South East Scotland, July and August are often the wettest months of the year. In London and Birmingham it will thunder on average 15 days a year, compared to less than 10 elsewhere in the UK.
4. **Average temperatures**
   - Average temperatures in UK are warmer at lower *latitudes* and colder at higher latitudes. They are also warmer at lower *altitudes* and colder at higher altitudes. Average yearly temperatures at low altitude vary from 7°C in Shetland, in northern Scotland, to 11°C on the south-west coast of England. The coldest (and highest) place is Ben Nevis - altitude 1,344m - where the average temperature is less than 0°C.
   - The coldest months are January and February and the warmest are July and August. In summer Scotland will be about 3°C cooler than England. The average daily maximum temperature at Glasgow in July is 19°C compared with 22°C in London.
5. **Severe weather**
   - Scotland tends to be worse affected by severe weather than the rest of the UK. Snow is more common in highland regions than in lowland areas, so while snow might fall on South West England less than 10 days a year, it will fall on the peaks of the Cairngorm Mountains over 100 days a year.
   - Gale-force winds (winds of more than 34 knots or 17.2 m per second) are most commonly caused by *depressions* travelling across the Atlantic Ocean. These depressions may pass close to or over Scotland, with Orkney and Shetland experiencing the strongest winds. Occasionally they can reach hurricane force, e.g. the storm in October 1987.

A map to show the regional variations in weather in the British Isles.

Homework: Revise the UK Weather case study (at the back of this workbook) for a quick test next lesson.

Lesson 2: Why is the UK Climate so variable?
LO: To be able to interpret climate graphs and understand the range of factors which affect UK Climate.

Do Now:



What factors affect climate?

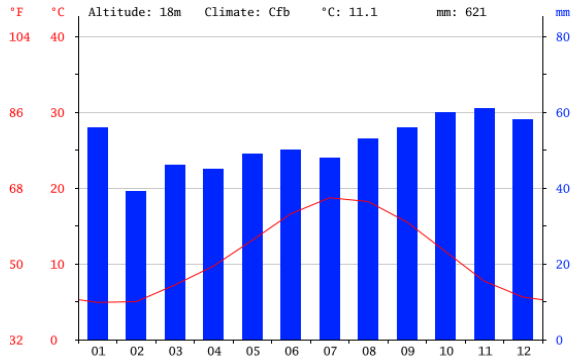
Complete the table using the information on each slide.

Factor	Description	How does it affect the climate?	Sketch the factor

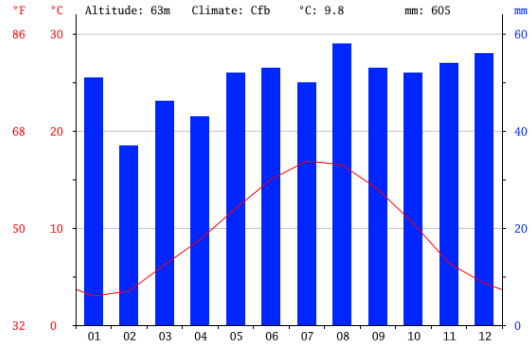
What does a climate graph show?

Using the four climate graphs compare and contrast the 4 different areas of the UK. For example, where is the warmest, coldest, wettest and driest.

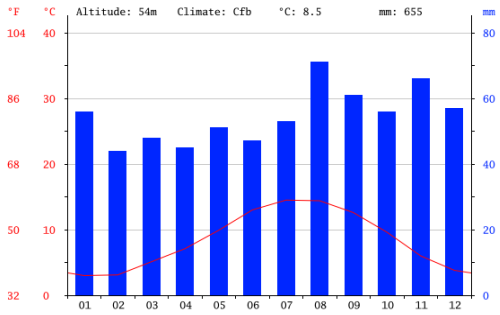
CLIMATE GRAPH LONDON



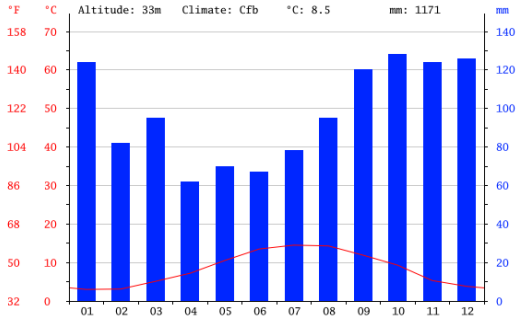
CLIMATE GRAPH NORTHAMPTON



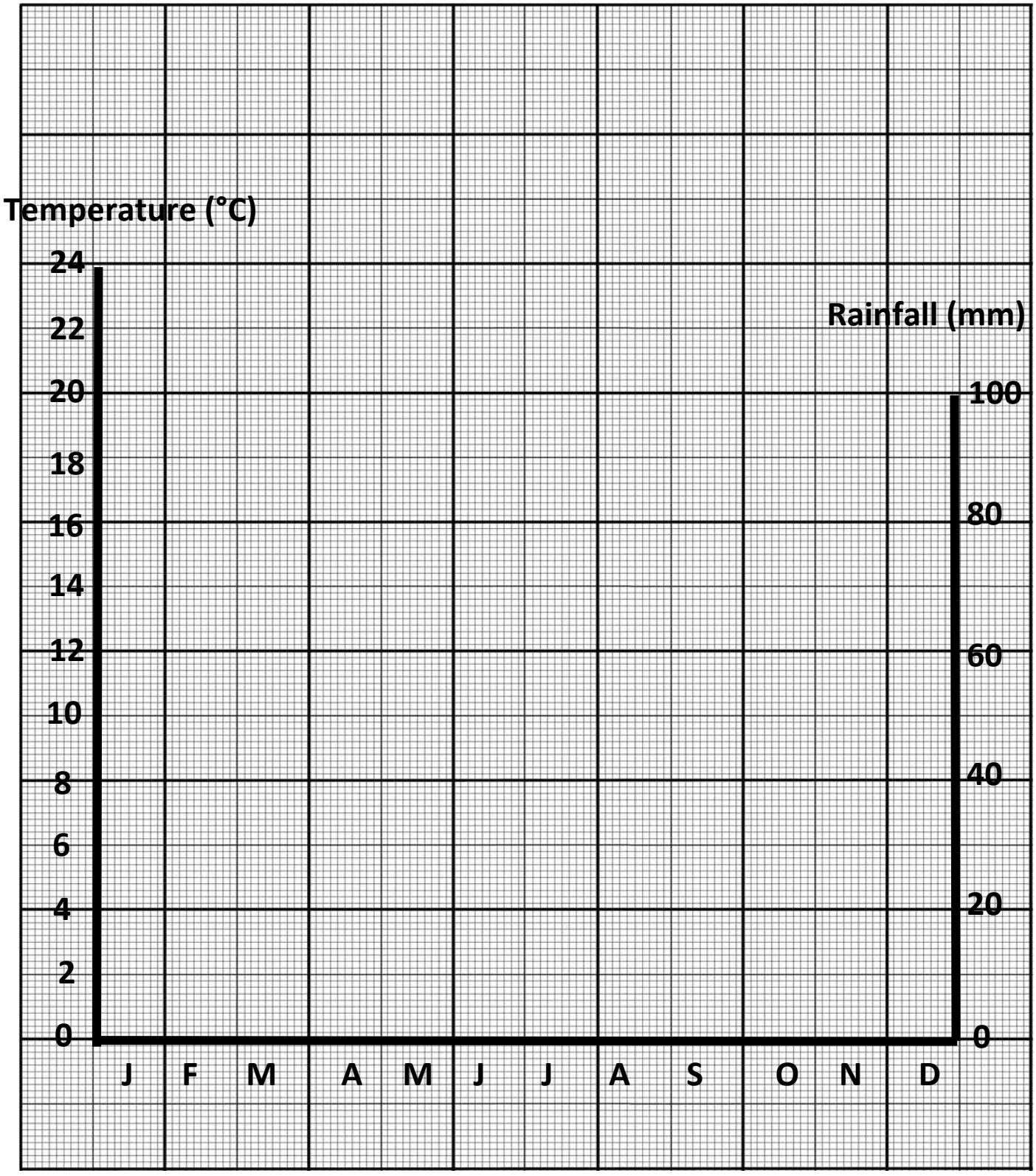
CLIMATE GRAPH NEWCASTLE UPON TYNE



CLIMATE GRAPH GLASGOW



Homework:
Complete the climate graph for London using the data.



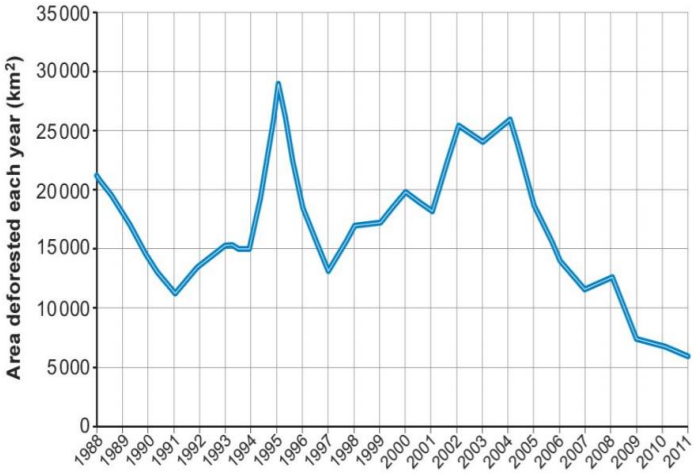
London Climate data	J	F	M	A	M	J	J	A	S	O	N	D
Average maximum daily temperature °C	6	7	10	13	17	21	23	22	19	14	10	7
Average monthly precipitation (mm)	78	59	61	51	55	56	45	51	63	70	75	79

Lesson 3: How does the global circulation of the atmosphere create distinctive climate zones?

LO: To explain how the global circulation of the atmosphere creates distinctive climate zones across the globe.

Do Now:

Study the line graph below. Answer the question that follows.



Tick (✓) **five** statements that are correct

	Tick (✓)
The amount of deforestation is similar in each year	
The amount of deforestation fluctuates but overall the trend has gone up	
The amount of deforestation fluctuates but overall the trend has gone down	
Deforestation peaked at 29,000km^2 in 1995 with smaller peaks in 2002 & 2004.	
Deforestation peaked at 27,000km^2 in 1995 with smaller peaks in 2002 & 2004.	
Deforestation peaked at 29,000km^2 in 1995 with larger peaks in 2002 & 2004.	
Deforestation went down every year between 2004 and 2011.	
Deforestation went down in five of the seven years between 2004 and 2011.	
Deforestation went down in six of the seven years between 2004 and 2011.	
There was almost 5 times more deforestation in 1995 than in 2011.	
There was almost 6 times more deforestation in 1995 than in 2011.	
There was almost 7 times more deforestation in 1995 than in 2011.	
Deforestation was 50% higher in 2004 than it was in 1997.	
Deforestation was 100% higher in 2004 than it was in 1997.	
Deforestation was 200% higher in 2004 than it was in 1997.	

Map from Memory

Draw the map into the box below. Do not draw whilst the picture is on the screen.

What is the global pattern of atmospheric circulation?

What is the troposphere?

Answer these questions whilst watching the video clip
https://www.youtube.com/watch?v=_fcXL61NZS0

Where receives direct sunlight?	
What type of pressure is around the equator?	
What is an air current?	
How many cells are there in each hemisphere?	
How many cells are there in total?	
Does cool air rise or sink?	
Where to Jet streams form?	
What is a jet stream?	

What are the names of the three circulatory cells? Where are they found?

Match the key words with the definitions

Hadley Cell		These are found between 30 and 60 degrees North and South. There is an area of low pressure here. The cold air sinks and moves towards the mid latitudes.
Ferrel Cell		Warm air rises at the equator and travels to around 30° North where it cools and sinks to the surface, before returning to the tropics. They are responsible for the trade winds in the tropics.
Polar Cell		There is rising air near 60 degrees and sinking air towards the poles. These cells control the weather at the northern and southern latitudes.

Complete the cloze exercise

Hadley cells are found at the _____ – here the ground is intensely heated by the sun. This causes the air to _____ which creates a low-pressure zone on the Earth's surface. As the air rises, it cools and forms thick _____ (storm) clouds. The air then _____ and starts to move towards the _____. When it reaches about 30° north and south the air _____ and sinks towards the ground forming the _____ high-

pressure zone. As the air sinks, it becomes warmer and_____– this creates an area of little _____ and low rainfall, where the _____ are found.
Ferrel cells are found at _____ latitudes – between 30 and _____ degrees north and _____. The air on the surface is pulled towards the poles and they form warm _____. These winds pick up moisture as they travel over the _____, at around 60° north and south they meet _____ air which has drifted from the poles. The warmer air is _____ and the colder air is denser. When the two air _____ meet the warmer air rises above the colder air. This causes _____ pressure and _____ weather conditions.
_____ cells are found at the poles. Here the air is cooled and _____ towards the ground forming high pressure – this is known as a polar high. This then flows towards the lower _____. At about 60° the cold air _____ with the warmer air and rises upwards – creating a _____ of low pressure. The weather here is unstable.

Missing Words

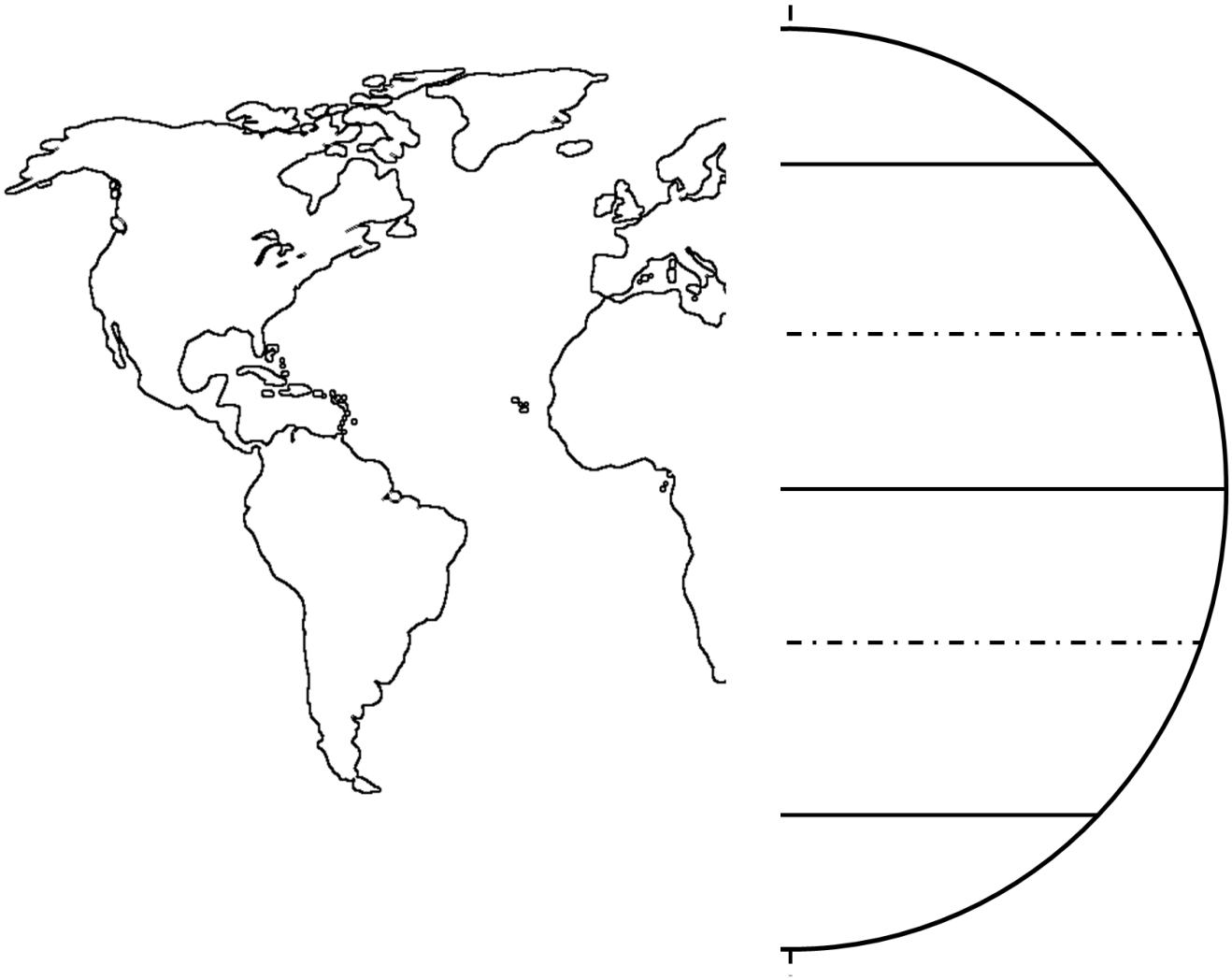
Equator	Subtropical	Unstable	Mixes	Low
Higher	South	Masses	Separates	Rise
Cumulonimbus	Poles	Cools	Zone	Drier
Oceans	60	Cloud	Latitudes	Deserts
Winds	Lighter	Cold	Sinks	Polar

Draw a picture in each box to show what happens in each convection cell

Hadley Cell	Ferrel Cell	Polar Cell

How are the climatic zones and the cells linked?

Finish labelling the cells, identify where the biomes are and annotate the climatic conditions found in each biome.



Read through the information and complete the table on the features of the climate
What similarities and differences are there between the two climates? Use evidence and give reasons.

Hot Semi-Arid Climate Features	Tropical Climate Features
Location	Location
Temperature	Temperature
Precipitation	Precipitation
Seasonality	Seasonality
Other Information	Other Information

Features of the tropical climate

Tropical climates are hot and wet. In the equatorial region of the Amazon Basin (within 5° of the Equator) there is between 1,500 mm and 2,000 mm of rainfall a year. London, by comparison, has an average of 593 mm of rainfall each year. The rainfall is created by heat. Large air masses are constantly warmed by the hot ground below. This creates massive zones of low pressure. These air masses are unstable, meaning that warm air is rising within them. The unstable air rises and spreads away from the Equator, creating the **tropical rain belt** (or **ITCZ**) that circles the globe. You can see some of the clouds forming in the ICTZ in Figure 3.

There are three main types of wet tropical climate. Two have seasonal patterns to their rainfall. Figure 2 summarises the features of these climates. It also introduces the other main tropical climate type we will explore in this chapter, the hot semi-arid climate.

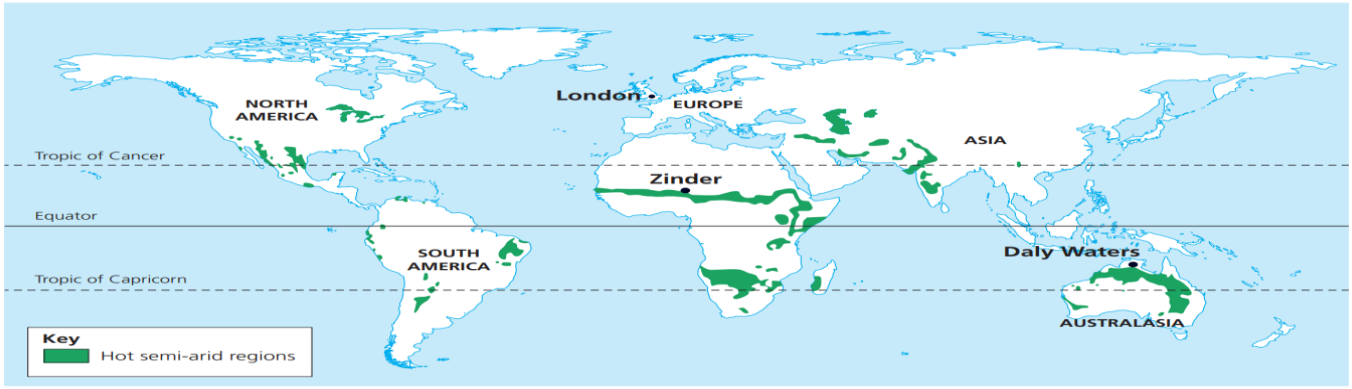
Tropical rain belt (ITCZ)

A zone between the Tropics of Cancer and Capricorn that has a lot of rainfall. This zone experiences high temperatures when the sun is overhead. As the Earth is heated, it warms the atmosphere above creating huge areas of low pressure that bring rain.

Key	Climate type	Features
	Equatorial (also known as the tropical rainforest climate)	All months have an average precipitation of at least 60 mm, often much higher. There are no seasons. It is hot and wet throughout the year.
	Tropical wet (also known as the tropical monsoon climate)	It is hot in every month with no real seasonal variation in temperature. Precipitation is seasonal, with some months having exceptionally high rainfall totals but other months having less than 60 mm of rainfall.
	Tropical wet and dry (also known as tropical savanna climate)	It is hot in every month but some months are a little cooler than others. There are very distinct wet and dry seasons. During the dry season monthly precipitation totals are below 60 mm. There is usually less total annual rainfall than a tropical wet climate and the dry season is drier and longer.
	Hot semi-arid	This is the most seasonal of the four tropical climates. It is extremely hot in the summer and mild in the winter. There is a short wet season and a long dry season. There is a lower annual precipitation total than in the savanna type of climate.

What are the features of the hot semi-arid climate?

Areas of hot semi-arid climate are found on the fringe, or outer edge, of arid areas. You can think of them as a transition zone, or a zone of change, between hot deserts and places with a seasonal tropical wet and dry climate. They are found largely between the Tropics of Cancer and Capricorn.

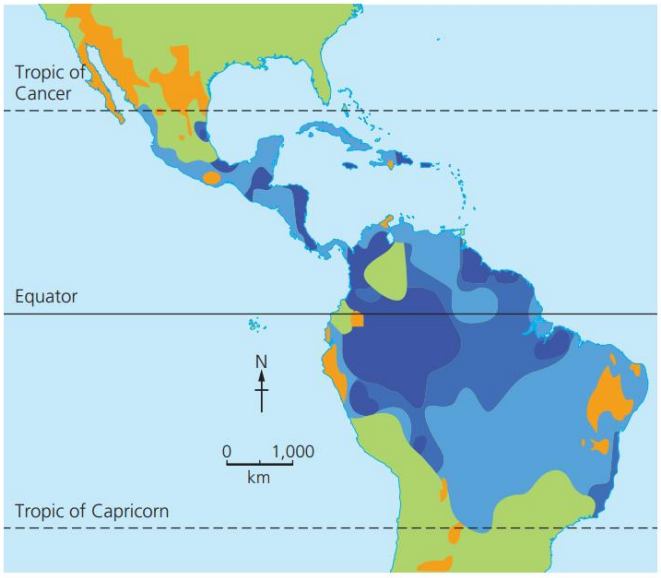


▲ **Figure 5** The world distribution of hot semi-arid climates.

What is the climate pattern like?

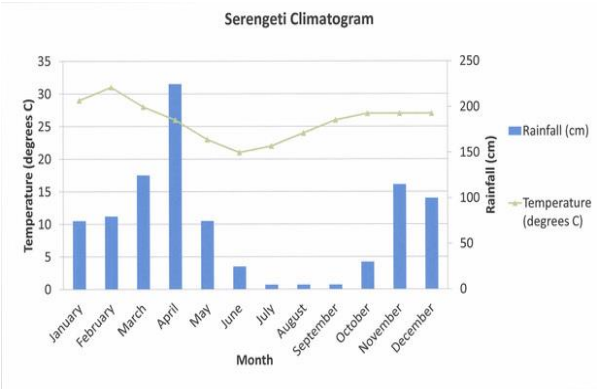
Temperatures vary throughout the year but, compared to the UK, remain high. The hot temperatures are due to the position of the Sun which remains high in the sky across the tropical belt throughout the year (see Figure 3 on page 284–285). The most striking feature of the climate is the low rainfall.

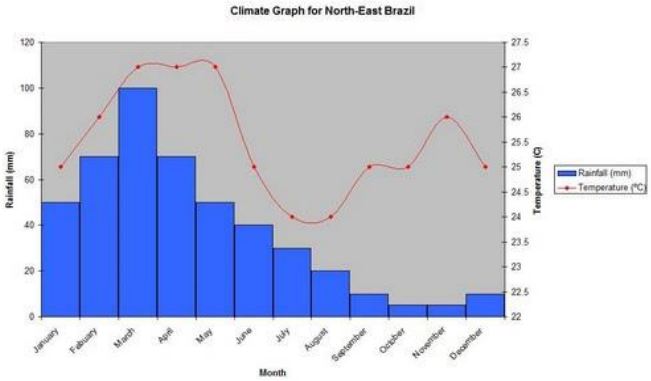
Hot semi-arid climates have low annual precipitation. Precipitation totals are lower than 600 mm per year. Precipitation falls only as rain. Snow never falls in this area except on the highest mountains, such as Kilimanjaro in Tanzania. The rainfall is seasonal. The dry period lasts for several months. Rainfall in the hot semi-arid zone is also unreliable. This means that, in some years, the usual rain storms of the wet season fail. The drought months are the result of stable descending air when air pressure remains high. This can be seen in Figure 2 on page 173. Even in the months when rainfall is higher, much of the water is quickly evaporated due to the relatively high temperatures.



▲ **Figure 2** The distribution of the three main tropical climate types, and the hot semi-arid climate in Central and South America.

Compare and contrast the two climate graphs

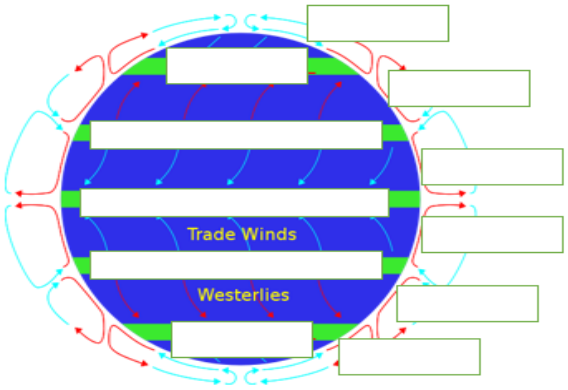




Lesson 4: What are depressions and anticylones?
LO: To explain the global distribution of high and low pressure systems and link this to typical weather patterns and extreme weather.

Do Now:

1. Give the definition for a biome	
2. Give the definition for an ecosystem	
3. Give two examples of cold biomes	
4. Give two examples of hot biomes	
5. How does the latitude affect the biome	



The Global Pattern of Atmospheric Circulation

Complete the diagram above with the following labels:

- Hadley Cell x 2
- Ice x 2
- Rainforests
- Ferrel Cells x2
- Deserts x2
- Polar Cells x2

What causes high and low pressure?

Sketch the diagrams and annotate using the key points from your explanation of what causes high and low pressure.

Low Pressure	High Pressure

What type of weather do you get in high and low pressure?

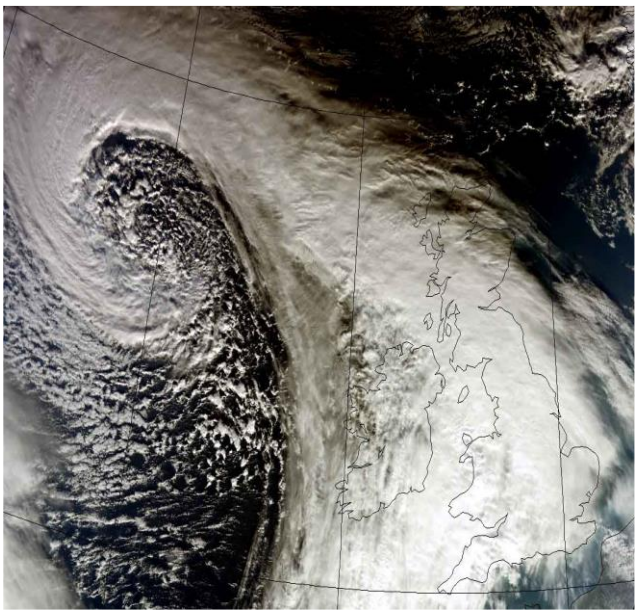
How is high and low pressure distributed globally?
Draw a sketch of this diagram into your books and briefly explain what it shows.

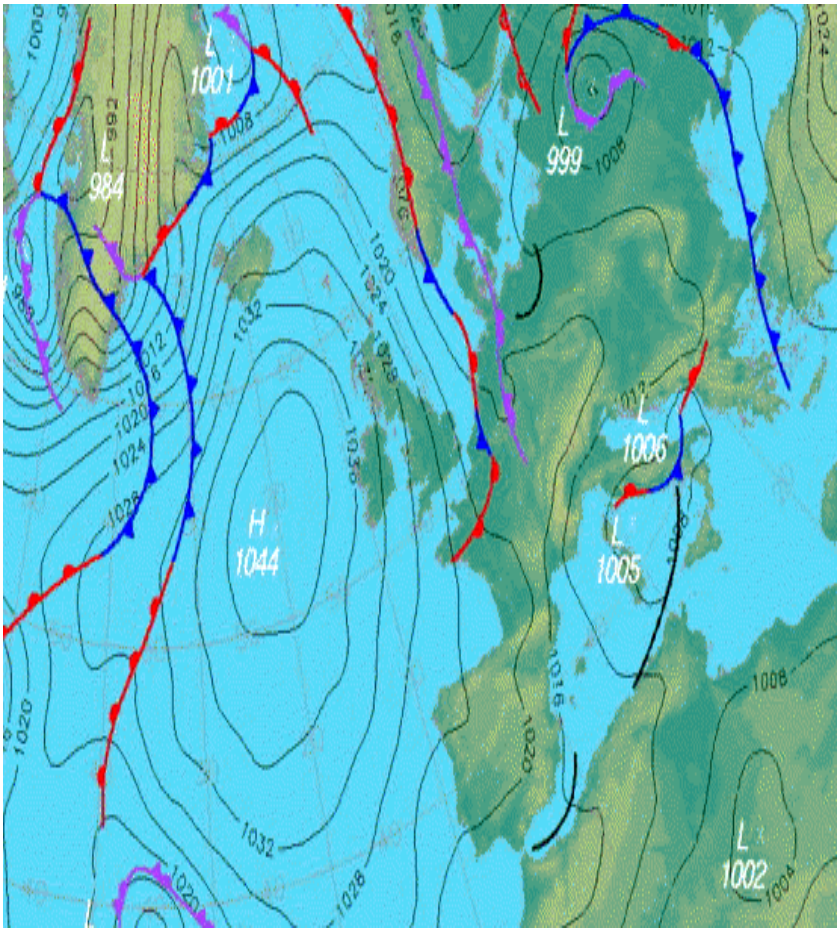
Sketch here	Explain here

Complete the cloze exercise

- In an anticyclone (_____ pressure) the winds tend to be light and blow in a _____ direction (in the northern hemisphere). Also the air is _____ , which _____ cloud formation and leads to light winds and settled _____ conditions.
- In a depression (low _____), air is rising and blows in an _____ direction around the low pressure (in the northern hemisphere). As it rises and cools, water vapour _____ to form _____. This is why the weather in a depression is often _____; there are usually weather fronts associated with depressions.
- **<u>Word bank</u>: high, unsettled, clockwise, pressure, sinking, reduces, anti-clockwise, clouds, weather, condenses.**

What does high and low pressure look like?





Task: Watch the video then annotate your map to help you understand the key features of a weather map.

Weather key phrases

1. Area of high pressure
2. Area of low pressure
3. Fine weather
4. Windy conditions
5. Clear skies
6. Cloudy
7. Rainfall likely
8. Isobars (places of equal pressure)
9. Tightly packed isobars (windy)
10. Fronts (2 different masses of air)
11. Cold front
12. Warm front

Complete the table, adding the descriptions of the weather conditions into the correct boxes.

	Summer	Winter
Low Pressure		
High Pressure		

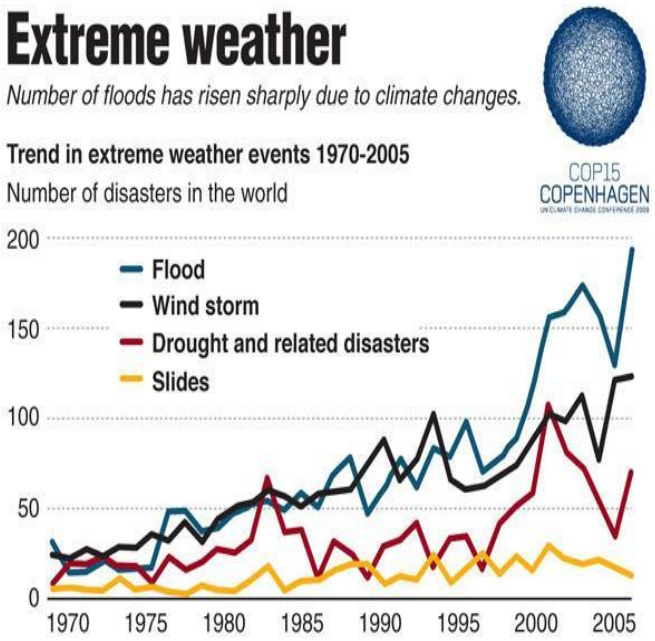
True or False? If the statement is false, rewrite it to make it true

Statement	True/False	If false, re-write
There are bands of high and low pressure across the globe.		
An anticyclone is low pressure.		
High pressure is when air is rising.		
In summer, depressions bring fine weather.		
In winter, high pressure brings frosty mornings.		
In summer, low pressure brings stormy conditions.		
Isobars are areas of equal pressure.		
Tightly packed isobars indicate calm conditions.		
Fronts bring unsettled conditions.		
A warm and cold front that has joined together is known as an attached front.		

Lesson 5: How are extreme weather events distributed around the world?
LO: To understand the global distribution of extreme weather including droughts and low pressure systems.

Do Now: Without looking back in your books, how many points can you score in 2 minutes. The person with the highest number of points will win a prize! Total marks available 26.

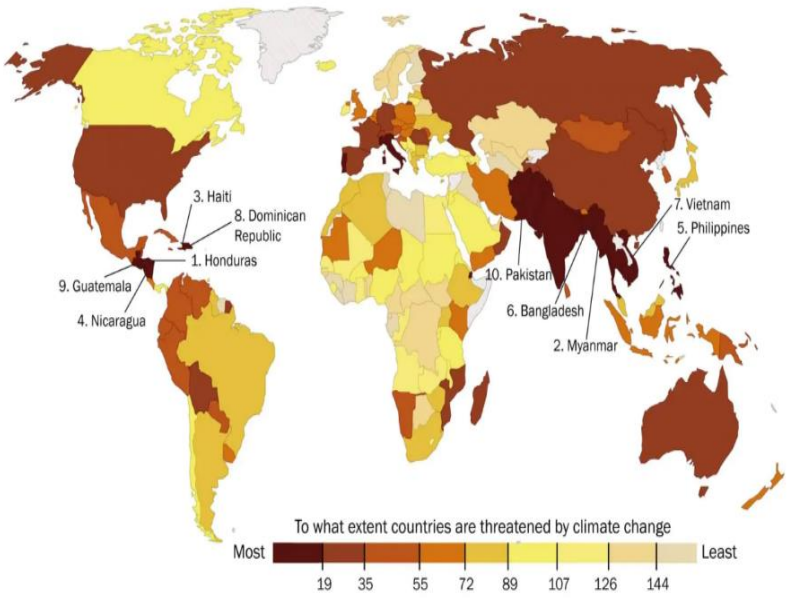
What do isobars measure?	**Which weather system is caused by sinking air?**	**What does this symbol mean?** 
Give 3 high pressure summer conditions.	**What is indicated if isobars are close together?**	**Strong winds are found in which weather condition?**
Which weather system is caused by rising air?	**What does this symbol mean?** 	**What is an area of low pressure called?**
What is an area of high pressure called?	**What does this symbol mean?** 	**Give 3 low pressure winter conditions.**



Identify the patterns of data using the sentence starters. Suggest reasons for the changes in data

Overall the number of extreme weather events has……

In particular, the most significant increase is….



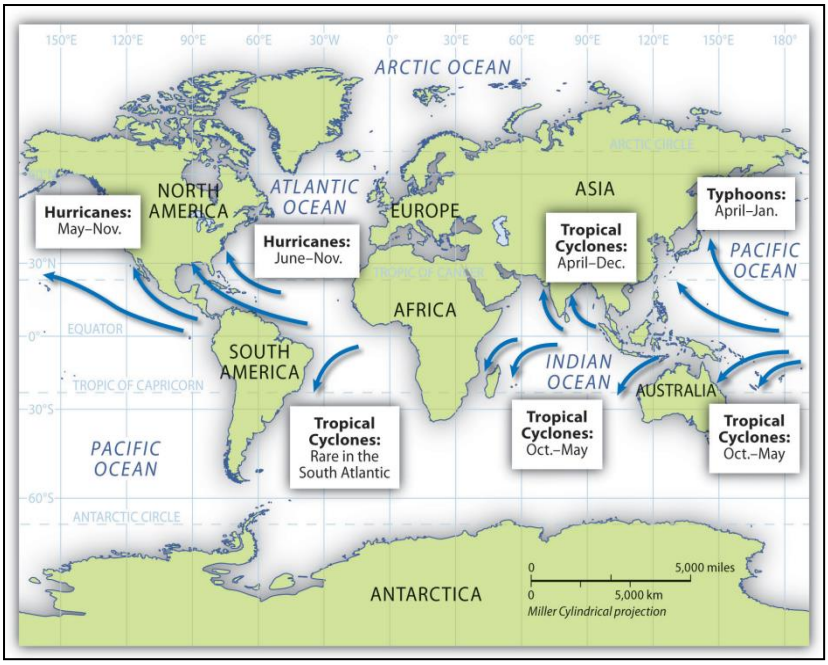
What facts can you infer (conclude) from the source?

Are there any patterns or trends in the data?

Are there any anomalies or surprises?

What does the source not tell you?

Does the source link to any other topics/wider knowledge?



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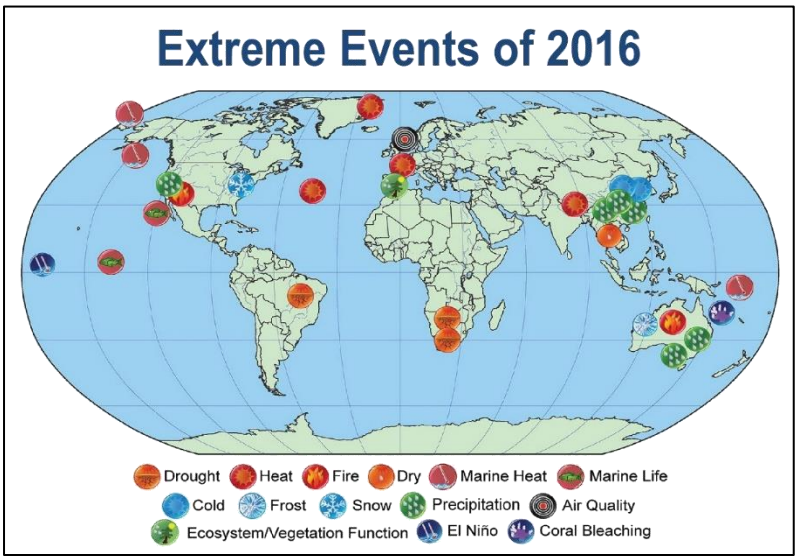
What does the source not tell you?

Does the source link to any other topics/wider knowledge?



What facts can you infer (conclude) from the source?

Are there any patterns or trends in the data?

Are there any anomalies or surprises?

What does the source not tell you?

Does the source link to any other topics/wider knowledge?

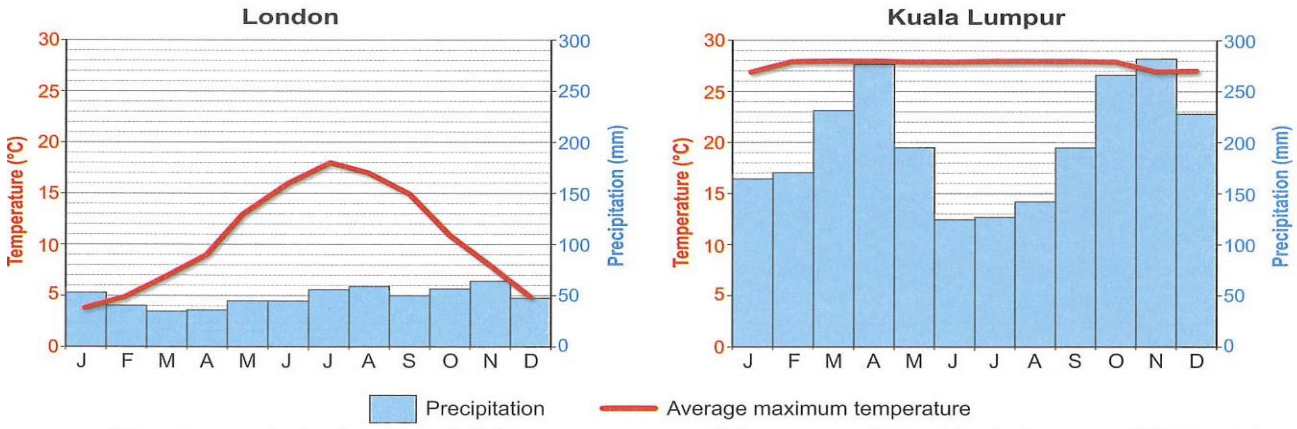
Homework

Complete the map and graph based exam questions.
Remember to use the data contained in the maps/graphs in your answer. Read each question carefully and answer all questions. Take a photo and upload to Teams!

Theme 2: Physical Processes and the Relationships between People and Environments

Answer **all** *parts of (a) to (e). There is a choice of question in (f).*

2. Study the map and climate data below. It shows information about London (UK) and Kuala Lumpur (Malaysia).



Climate graph for London (UK)

Climate graph for Kuala Lumpur (Malaysia)

(a) Compare the climate of London with that of Kuala Lumpur. Use figures in your answer. [4]

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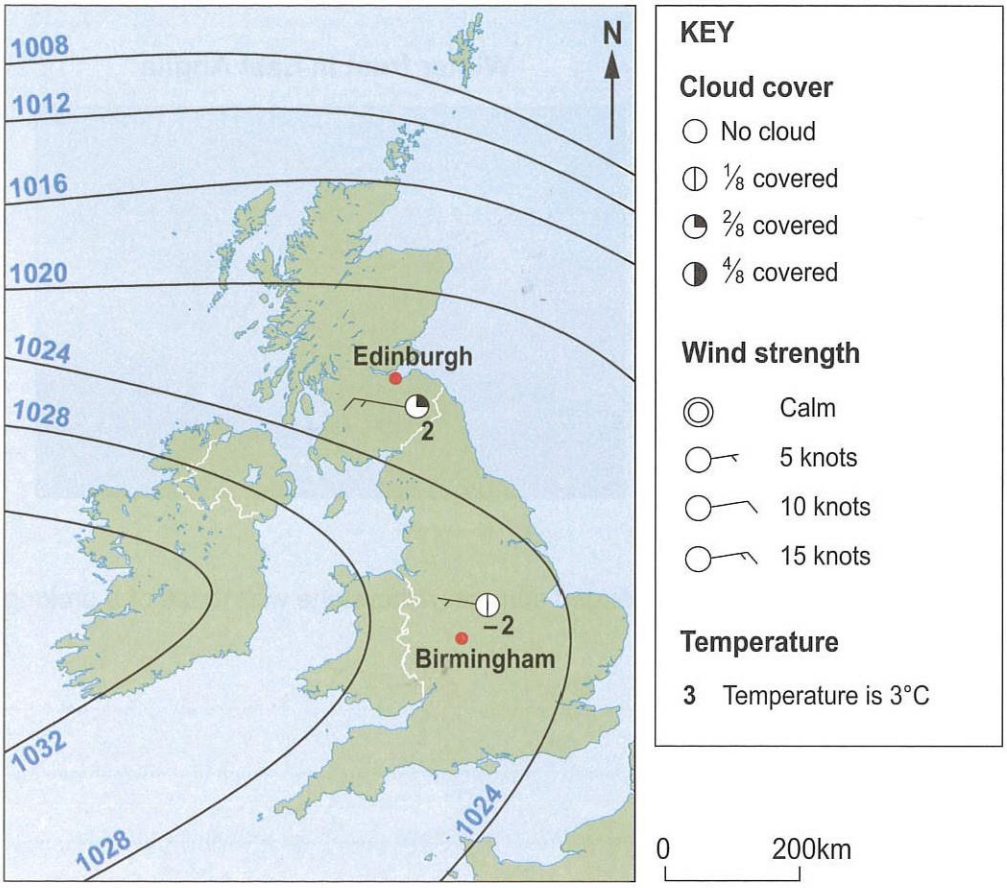
the United Kingdom in January 2014.



(i) What is an anticyclone? Tick (✓) the correct answer from the statements below. [1]

	Tick (✓)
An area of low pressure with light winds.	
An area of high pressure with light winds.	
An area of high pressure with strong winds.	

(ii) Use the map to compare the weather in Birmingham with Edinburgh in January 2014. Use figures in your answer. [3]

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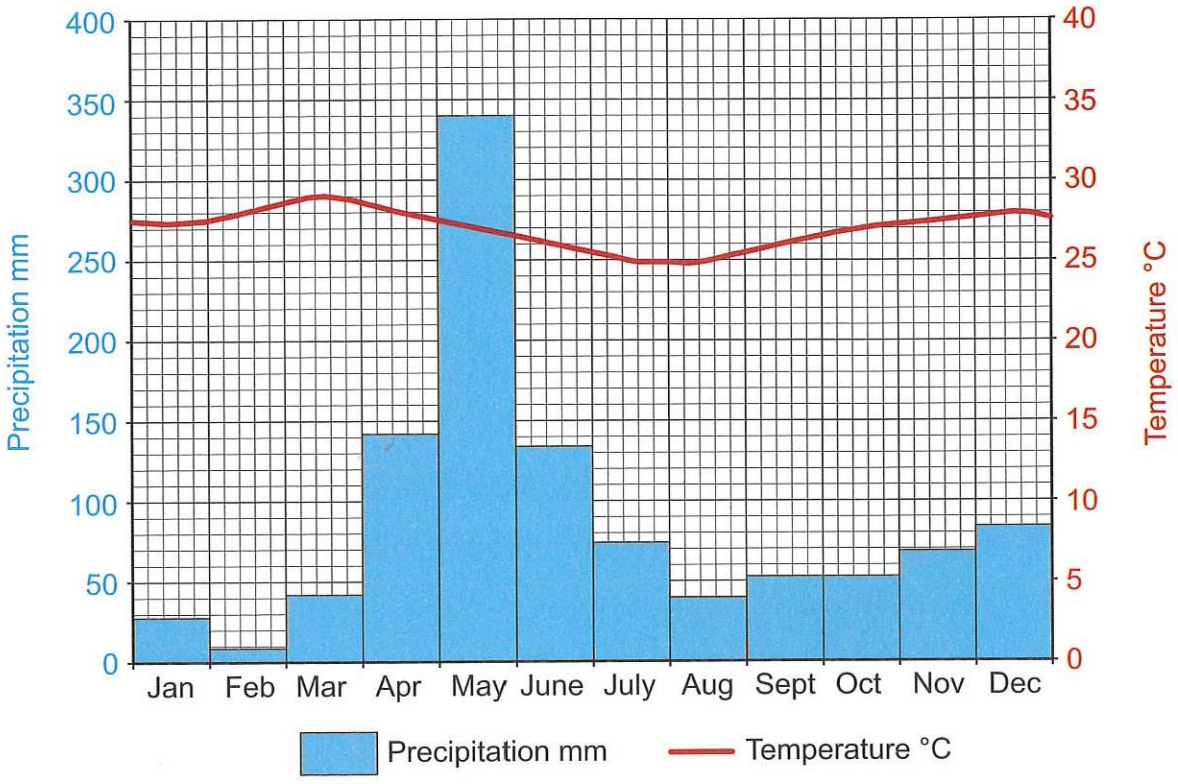
Theme 2: People and the Natural World Interactions

Answer **all** *parts of (a) to (d). There is a choice of question in (e).*

2. *(a)* Study the climate graph of Kipini, in Kenya, below.



Describe the pattern of precipitation throughout the whole year in Kipini. Refer to figures in your answer. [2]

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Lesson 6: <u>What are the causes, impacts and responses to two contrasting extreme weather events?</u>

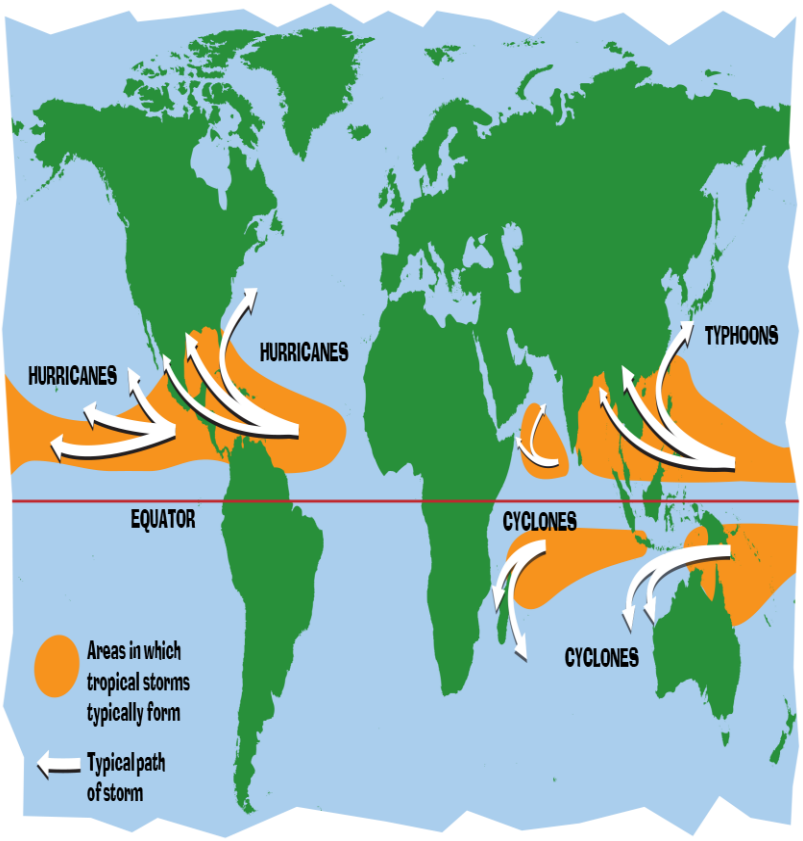
LO: To use two case studies to illustrate the causes, impacts and responses of extreme weather events.

Do Now! Can you calculate the mean?

Set 1	5	5	6	5	7	8	9	5
Set 2	10	11	13	16	22	7		
Set 3	34	19	13	21	29	37		
Set 4	23.5	27.2	14.9	7.6				
Set 5	15	10	12.4	16.7	18.9			

Can you think of any examples of where we would need to calculate the mean in Geography?

Describe the distribution of tropical storms (4)



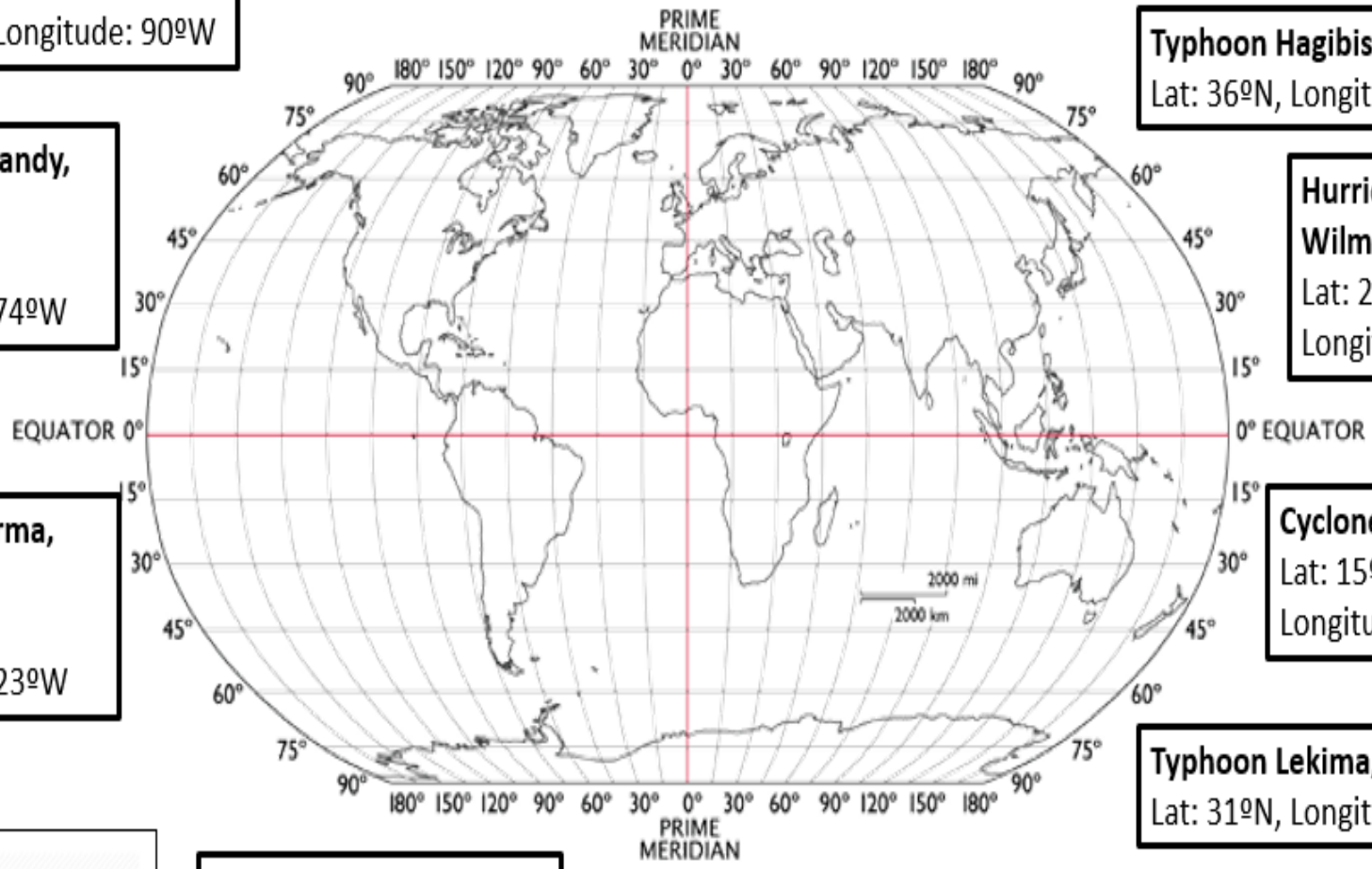
Tropical Storm Distribution

You are going to use latitude and longitude measurements for several tropical storms to plot their distribution. Can you spot any patterns?

Hurricane Katrina, 2005
Lat: 29ºN, Longitude: 90ºW

Hurricane Sandy, 2012
Lat: 39ºN,
Longitude: 74ºW

Hurricane Irma, 2017
Lat: 16ºN,
Longitude: 23ºW



Typhoon Hagibis, 2019
Lat: 36ºN, Longitude: 138ºE

Hurricane Wilma, 2005
Lat: 25ºN,
Longitude: 81ºW

Cyclone Yasi, 2011
Lat: 15ºS,
Longitude: 145ºE

Typhoon Lekima, 2013
Lat: 31ºN, Longitude: 121ºE

Typhoon Haiyan, 2013
Lat: 12ºN, Longitude: 120ºE

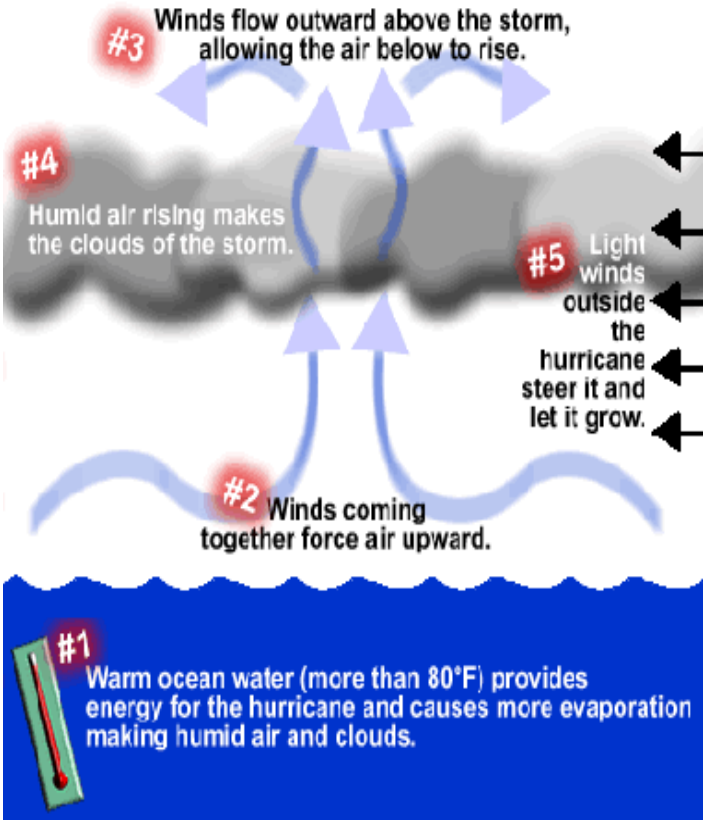
Key:
Hurricane
Cyclone
Typhoon

Cyclone Idai, 2019
Lat: 18ºS,
Longitude: 35ºE

Cyclone Bhola, 1970
Lat: 23ºN, Longitude: 88ºE

Use the latitude and longitude measurements to plot the distribute of tropical storms. You need to plot latitude first and longitude second.

How do tropical storms form? https://www.youtube.com/watch?v=Wk_FVXVnE2I



Use the following key words in your explanation of how tropical storms form

Thunderstorm	Low	Pressure	Evaporation	27°C	Clouds
	Land	Typhoon	Meeting winds		

Answer the questions whilst watching the video clip
https://www.youtube.com/watch?v=WmPrXJ4lCzk

What is a typhoon known as when it is over the Indian Ocean?	
What do typhoons start as?	
What is the centre of a typhoon called?	
Where are the maximum wind speeds found in a typhoon?	

Low Pressure Case Study: Typhoon Haiyan

Where are the Philippines located?

Describe the path of the storm

Watch the two video clips and complete the boxes.
https://www.youtube.com/watch?v=T0v6Gol83F0
https://www.youtube.com/watch?v=8UJW84Fqhgw

When did Typhoon Haiyan occur?

What were the effects of the Typhoon?

Sort the statements into effects and responses.
Categorise the effects into social, economic, environmental and political.

Britain sent RAF aircraft over to The Philippines which carried water and food supplies.	Over 600,000 people were displaced from their homes.	Approximately 7400 people died.	Emergency shelters were sent as many homes were destroyed.
Airports were badly damaged.	Japan pledged $10 million to help.	Many roads were blocked.	The US Navy sent ships to The Philippines.
Electricity and phone lines were knocked out by the storm	449 schools were damaged or destroyed.	21 UK Medics were deployed to Tacloban.	3374 tents were sent to The Philippines within the first 3 weeks.
Local people took to looting as food supplies quickly ran out.	Many children were separated from their parents.	Temporary hospitals were set up in buildings that had the least damage.	33 million coconut trees were destroyed/damaged

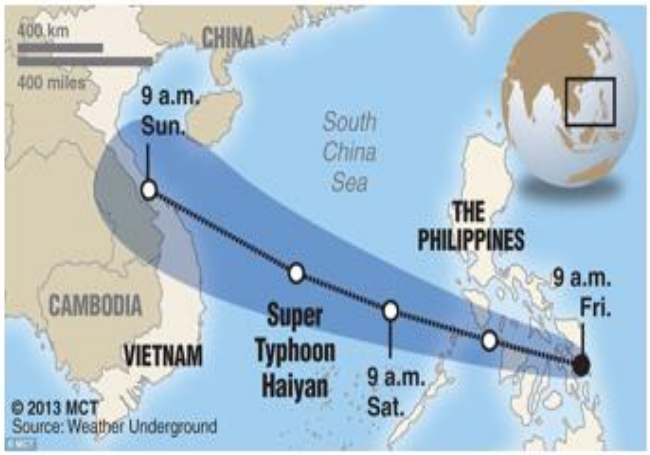
Watch this clip and write about the responses to the Typhoon below
https://www.youtube.com/watch?v=r8j4VEy3Wgw

Why was the response to Typhoon Haiyan so difficult?

What makes the Philippines vulnerable to natural disasters?

Use the data to write a paragraph to describe whether you think the Philippines is equipped to cope with a natural disaster on this scale. Consider the following:

Location
- Economy
- Development
- Ability to cope.



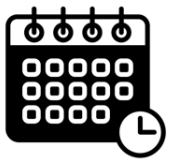
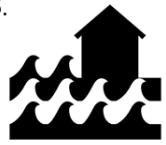
CIA Fact Box – Philippines Need To Know

Indicator	Values (2014 estimated)
GDP per capita PPP	$4700
People Living in Poverty (less than $2 per day)	27% of the population
Access to Clean Water	95.4% of the population
Life Expectancy	72 years
Literacy Rate	48.7%
People Per Doctor	1.15 doctors per 1000 people

Homework:
Revise the Typhoon Haiyan case study ready for a mini test next lesson. The case study is at the back of this booklet.

Lesson 7: Case Study of a High-Pressure Weather Event: Drought in Ethiopia
LO: To understand the causes and impacts of droughts and begin to compare these impacts with Typhoon Haiyan.

Do Now:

1. 	2. 	3. 	4. 	5. 
What impact can a low pressure weather system have on an LIC?				
6. 	7. 	8. 	9. 	10. 

I **Identify** — Where could this be? (1/2)

D **Describe** - What is happening in the photo? (3/4)

E **Explain** — What could they be queuing for? Why? (5)

A **Apply** — Why is this more common in LICs than HICs? (6)

L **Link** — How does this link to weather and climate? 7/8)

IDEAL analysis

v

Describe the location of Ethiopia

What causes drought in Ethiopia? https://www.youtube.com/watch?v=kdXTUSPelzY

What are the impacts of drought?

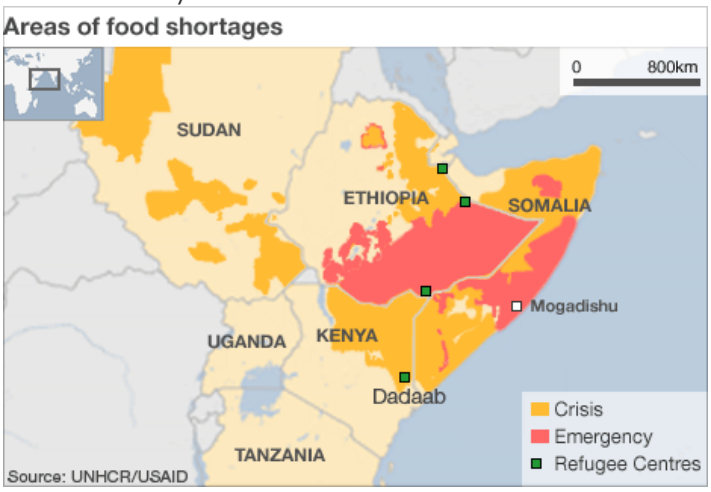
Read through the BBC News Article and add information to the boxes below. Write in your own words.

28 June 2011 Last updated at 15:31

Horn of Africa sees 'worst drought in 60 years'

Some parts of the Horn of Africa have been hit by the worst drought in 60 years, the UN says. A prolonged failure of rains, which began in late 2010, is now taking its toll.

Crops that people rely on for food have failed and livestock (such as cows), have died, therefore food prices have risen substantially across the region, (The price of grain in affected areas in Kenya is 30-80% above average) meaning many poor families cannot afford to buy food.



More than 10 million people are thought to be affected across the region.

The UN now classifies large areas of Somalia, Ethiopia, Djibouti and Kenya as a crisis or an emergency.

Charity Save the Children says drought and war in Somalia has led to huge numbers of people fleeing across the border into Kenya, with about 1,300 people arriving every day.

The numbers now affected are huge: 3.2m in Ethiopia, 3.2m in Kenya, 2.6m in Somalia and more than 100,000 in Djibouti.

Every month during 2011, about 15,000 Somalis have fled their country, arriving in Kenya and Ethiopia.

While conflict has been a fact of life for them for years, it is the drought that has brought them to breaking point. Many have walked for days, are exhausted, in poor health, desperate for food and water.

Hassain, Ali and Sareye are among the 390,000 Somalis to seek refuge in Kenya

Nearly one third of all children in the Juba region of Somalia are acutely malnourished, while in parts of Ethiopia the figure is even higher, the UN research says. Parts of Uganda are also suffering from the drought.

A new refugee camp primarily for Somalis was opened at Kobe in Ethiopia last Friday, near an existing camp at Melkadida. More than 3,500 refugees and their belongings were moved there over the weekend.

The UK has pledged £38m ($61m) in food aid to drought-hit Ethiopia - enough to feed 1.3m people for three months.

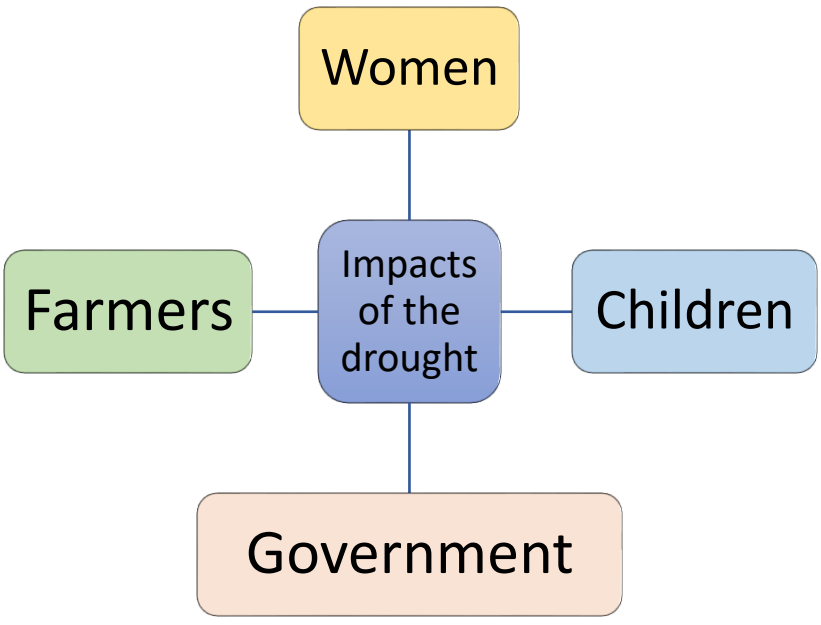
Social Effects	Economic Effects	Environmental Effects	Political Effects

Immediate Responses	Long-term Responses

Read through the statements and decide whether they are causes, effects or responses. Include a key.

There was crop failure due to the lack of rainfall.	The rains had failed to come for two years in Somalia.	The aid was very slow to get to the Horn of Africa.
Food prices increased and for many there was a food shortage.	Over 920,000 people left Somalia as refugees to find food, aid and water.	Al Shabab (an Islamist group) were reluctant to let aid groups work in Southern Somalia.
The UN requested $2.5 billion in humanitarian assistance.	Several countries send medical teams, tents and water to help with the crisis.	Infant Mortality rates increased within refugee camps.
Global temperatures are increasing	There was less rain than usual in some areas. In some places, it was less than 30% of the average.	There were a number of Cholera outbreaks in the refugee camps.
Overgrazing and cultivation had compacted the ground therefore food could not grow and water could not penetrate the soil.	Money was invested into restoration and maintenance of the local ecosystems.	People were suffering from malnutrition as there were not eating enough and did not have the right foods to eat.

Complete the spider diagram to show how drought impacts different groups of people.



Common Assessment AO2 Exam Question

Compare the impacts of contrasting weather events on different groups of people. (8)

What is the question asking?

Plan

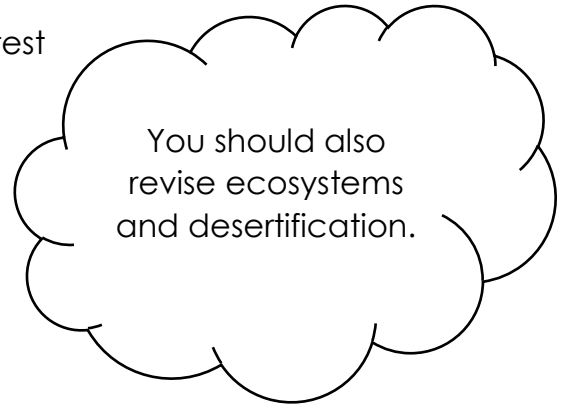
Answer

Improvements

Homework:

Complete the revision sheet for the end of unit test
Revise:

- High pressure
- Low pressure
- Tropical storms
- Droughts
- Atmospheric circulation pattern
- The UK climate – why it varies



Revision for Weather and Climate

Key words

Weather

Climate

Climate graphs – what do they show/how/why?

Describe the conditions of a semi-arid climate:

Factors affecting climate…

Altitude –

Ocean Currents –

Latitude –

Aspect –

Jet stream –

Air masses -

Case Study: Low pressure (Typhoon)

Location

Causes

Effects/Impacts
Social

Environmental

Economic

Responses

Define and describe the conditions in a…

Depression

Anticyclone

Case Study: High pressure (Drought)

Location

Causes

Effects/Impacts
Social

Environmental

Economic

Responses

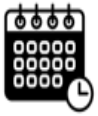
Take 10
Horn of Africa

Case study knowledge is important. Learn these 10 facts and apply them to your 6 and 8 mark questions.

The Horn of Africa consists of Eritrea, Djibouti, Ethiopia and Somalia. 	Drought frequently happen in the Horn of Africa. 
Between July 2011 and Mid 2012 a drought caused a severe food crisis across the Horn of Africa. 	There were 260,000 reported deaths in Somalia alone. 
By 15th September 2011 more than 920,000 refugees from Somalia has fled to neighbouring countries. 	More than 30% of children were suffering from acute malnutrition. 
Humanitarian agencies requested US$2.48 billion to address the crisis. 	Terrorist groups such as Al-Shabab denied there was a famine and banned many Western Aid agencies. 
Many people were negative about the response saying that it was too slow. 	The UN declared the famine over in February 2012. 

Take 10
Typhoon Haiyan

Case study knowledge is important. Learn these 10 facts and apply them to your 6 and 8 mark questions.

Location: The Philippines, Pacific Ocean. 	Date: 7 November 2013 
Strength: Category 5 Gusts up to 235mph Landfall windspeed 195mph 	71,000 hectares of farmland was affected - $85 million was lost from farm damage. 
1.9 million were left homeless 	6300 died in the Philippines. 
Aid was delayed due to the port and airport being destroyed. 	Tacloban was one of the worst hit cities – 90% of structures were either destroyed or damaged. 
There was a 20ft storm surge which led to mass flooding and water pollution. 	The overall cost of the damage was $2.02 billion. 

Example Answers:

Compare the impacts of contrasting weather events on different groups of people. (8)

Typhoons and droughts are two examples of contrasting weather events. A typhoon is a revolving storm caused by a low-pressure weather event, whereas a drought is a high-pressure event caused by a lack of precipitation.

Typhoon Haiyan struck the Philippines on the 7th November 2013, it was a category 5 storm with gusts of up to 235mph making it one of the most powerful storms to ever make landfall. Typhoon Haiyan caused the death of 2300 people and 1.9 million were left homeless. The Philippines is an LIC and therefore many people did not live in well-built homes and lacked access to shelters and medical care. Many of the deaths were of low-income residents of the Philippines particularly in Tacloban. Tourists and wealthier residents felt less of an impact e.g. power cuts and disabled phone lines.
The fishermen in Tacloban felt a huge impact as many of their fishing boats were destroyed in the storm surge – this left them unable to work and unable to provide an income for their families. The storm surge also led to polluted water therefore anyone using this water was at risk or illness.

The government had to reach out to other countries to ask for aid and assistance as they were unable to help all those that needed it due to their damaged infrastructure and lack of finances.

Drought frequently happens in the Horn of Africa – Eritrea, Ethiopia and Djibouti and Somalia. Between July 2011 and mid 2012 drought caused a severe food crisis across the Horn of Africa. In Somalia there were 260,000 deaths. Within the Horn of Africa children were severely affected with more than 30% of children suffering from malnutrition.
The food crisis led to a huge increase in refugees. More than 920,000 refugees fled from Somalia to neighbouring countries in the hope of finding food and water.

Many humanitarian groups were sent to the Horn of Africa to distribute aid and water and to provide medical assistance. This was a global effort to alleviate the suffering of the millions of people affected by the drought and food crisis. The governments and rulers in the Horn of Africa were almost powerless in this crisis, and when rain failed to arrive there was little they could do to prevent crop failure and to feed the many people that needed it.

In both weather events many different groups of people were impacted. As both locations are less developed, the residents of those locations felt the impacts the hardest and governments/leaders had to work with other countries in order to try and help the people affected. Both sets of governments/leaders had to call for financial and medical aid and assistance from other country from other countries in order to help their people.

Knowledge Checklist
Can you answer each of these questions?

Key Questions	R	A	G
What are the characteristics of the UK climate?			
What is seasonality?			
What is the global atmospheric circulation?			
How does latitude and altitude affect the climate?			
How does air pressure affect the climate?			
How does distance from the sea affect the climate?			
What are the different cells in the troposphere?			
Where are the distinctive climate zones? E.g. rainforest			
What are features of the semi-arid climate?			
What are the features of the tropical rainforest climate?			
How does global circulation create areas of high and low pressure?			
What weather is associated with high pressure?			
What extreme weather is associated with high pressure?			
What weather is associated with low pressure?			
What extreme weather is associated with low weather?			
What is an anticyclone?			
What is a depression?			
What are isobars? What do they represent?			
What are the causes of a drought?			
How are hurricanes/typhoons/cyclones distributed?			
How does a hurricane/typhoon form?			
When did Typhoon Haiyan happen?			
Where did Typhoon Haiyan happen?			
What caused Typhoon Haiyan?			
What were the social/environmental/economic impacts of Haiyan?			
What were the responses to Haiyan?			
When did the Horn of Africa Drought happen?			
Where did the Horn of Africa Drought occur (countries)			
What caused the Horn of Africa Drought?			
What were the social/environmental/economic impacts of the drought?			
What were the responses to the drought?			