



Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE

What are the three different names for tropical storms and where are their different locations?

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Answer(s)  ST IVO GEOMETRY

Hurricanes – Atlantic and E Pacific Ocean

Cyclones – Indian and South Pacific Oceans


Typhoons – North Pacific Ocean.

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Give four facts about the conditions required for tropical storms to form.

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Answer(s)  ST IVO GEOMETRY

Form over **areas of deep water** (at least 70m)


Form over **warm water (above 27°C)**

Most form **5-15° N/S of the equator** – because at the equator there is not enough spin from the rotation of the earth

Low wind shear – i.e. wind stays relatively constant with height (important so it doesn't tare apart the storm clouds)


Tropical regions – intense heat makes the air unstable.

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Give the basic sequence of the formation of tropical storms.

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Answer(s)  ST IVO GEOMETRY

Air heated above surface of water oceans rises under low pressure

Rising air draw up more air and moisture – causes strong winds

Coriolis effect causes the air to spin around a central calm eye


The rising air cools, condenses and forms huge cumulonimbus clouds generating torrential rain

Cold air sinks in the eye – lack of cloud and a calm dry area

The tropical storm travels across the ocean in the prevailing wind

Once it reaches the land the storm isn't fuelled by moisture / heat from

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True or false?


High wind shear is required for hurricanes to form

Surface water temperatures of less than 27°C are required for tropical storms to form

The eye of the storm has heavy winds and rain

Depth of water required for typhoons to form is at least 70m

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Answer(s)  ST IVO GEOMETRY

High wind shear is required for hurricanes to form (**FALSE – low wind shear**)

Surface water temperatures of less than 27°C are required for tropical storms to form (**FALSE – need 27°C +**)

The eye of the storm has heavy winds and rain (**FALSE – calm and little rain**)

Depth of water required for typhoons to form is at least 70m (**TRUE**)

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Which way do hurricanes spin in:

Northern Hemisphere

Southern Hemisphere


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Answer(s)  ST IVO GEOMETRY

Northern Hemisphere – storms swirl anti-clockwise


Southern Hemisphere – storms swirl clockwise.

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Question(s) **AQA GCSE Geography Revision** 


How is climate change expected to change the:

- Distribution of tropical storms
- The frequency of tropical storms
- The intensity of tropical storms


Answer(s) 

Distribution - not expected to change
 Frequency – likely to stay the same or decrease (but expected to be a greater number of more severe storms (4 and 5)
 Intensity – expected to become more intense and more category 4/5 storms.

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What is the name of the scale on which Tropical Storms are formed? How does the scale work?


Answer(s) 

The scale is known as the Saffir-Simpson scale – it is based on wind speed – the higher the category scale – the higher the intensity of the storm.

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Question(s) **AQA GCSE Geography Revision** 

Where and when did Typhoon Haiyan strike?

Answer(s) 

7th November 2013
 Philippines in SE Asia.

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Question(s) **AQA GCSE Geography Revision** 


True or false?

What category was Typhoon Haiyan on the Saffir Simpson scale and what wind speeds were reached.


Answer(s) 

Category 5 and wind speeds of between 170-190mph were reached.

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List 5 primary effects of Typhoon Haiyan.

Answer(s) 


- .6,300 deaths
- 400mm of rain – led to widespread flooding
- 40,000 homes destroyed
- 14 million affected in total – 4 million homeless
- 90% of Tacloban city was destroyed by winds and a 5m storm surge
- Widespread damage to infrastructure

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List 4 secondary effects of Typhoon Haiyan

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Answer(s) 


- Surface and groundwater chemicals were contaminated by chemicals / sewage leading to disease
- Oil barge ran aground at Estancia – 800,000 litres of oil leaked – destroying habitats.
- Agricultural land destroyed – food shortages and rice prices rose by 11.9%
- Looting became an issue – survivors fighting for food supplies.

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Give 4 immediate responses to Typhoon Haiyan

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Answer(s) 


- Warning on TV given and 800,000 evacuated
- 33 countries/ organisations pledged help – e.g. UK sent shelter Kits / France sent field hospitals
- \$1.5 billion of foreign aid was pledged
- Distribution of aid made difficult by damaged infrastructure
- Curfew set up after 2 days due to looting problems

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Give 4 long term responses to Typhoon Haiyan

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Answer(s) 


- More cyclone shelters built – new storm surge warning system put in place
- 'cash for work' programmes – people paid to help clear debris / rebuild the city
- Government announced a 4 year £6.2 billion programme to rebuild houses, infrastructure etc.
- Oxfam supported the replacement of fishing boats
- New legislation to prevent re-building in high-risk areas.

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Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
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What are the four things that can be done to reduce the effects of Tropical Storms with the acronym MPPP?

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Answer(s) 


MONITORING
PREDICTION
PLANNING
PREPARATION

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Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
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Give 2 ways in which Tropical storms can be monitored.



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Answer(s) 


SATELLITES – distinctive cloud patterns associated with tropical storms can be measured by satellite and rainclouds reaching 16km in altitude are likely to indicate intensification to tropical storm within 25 hours.

AIRCRAFT – specially equipped aircraft fly through tropical storms collecting air pressure, rainfall and wind sensors – used in forecasting models.

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Name an example of a cyclone that can be used to show that prediction technology is worth it

Answer(s)  N
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GCSE
GEOGRAPHY


Cyclone Phailin – India – 2013 – 1.2 million had been evacuated and 21 people died as a direct result of the cyclone.

In 1999 a similar cyclone in same area hadn't been predicted – more than 10,000 lives were lost.

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 **Question(s)** AQA GCSE Geography Revision  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Give four examples of how people can **protect** themselves from the hazards associated with tropical storms.


Answer(s)  N
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GEOGRAPHY

Cover windows with hurricane shutters
Bring in outdoor furniture and anything not secured
Install an emergency generator
Storm drains take away excessive rain / reduce flooding
Remove trees close to buildings
Houses close to the coast may be built on stilts in some area
E.g. Cyclone shelters in Bangladesh

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 **Question(s)** AQA GCSE Geography Revision  Astrea Academy Trust
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Give 3 examples of what people can do to plan ahead in order to reduce the hazards associated with Tropical Storms.


Answer(s)  N
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GEOGRAPHY

Emergency kits in the house with bottled water etc.
Place valuable on upper floors in waterproof containers
Store loose objects
Plan with family what to do in an emergency
Preparation of what to do in a Tropical Storm – e.g. National Hurricane Preparedness Week in the UK

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 **Question(s)** AQA GCSE Geography Revision  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Give 3 examples of extreme weather that the UK face and that can suggest weather is becoming more extreme.

Answer(s)  N
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GEOGRAPHY

EXTREME COLD – 1978-79 extreme cold, also 2014-2015 was unusually cold and 2018 – ‘Beast from the East’ – risks of frost to cattle / crops, freezing conditions cause problems for traffic etc.
DROUGHT / HEAT – 1976 – particularly severe drought / heatwave and in 2003 there were 2,000 heat related deaths in the UK.
FLOODING – prolonged rainfall is common in late winter / early springs and recently have seen more severe flooding as a result – e.g. **Winter 2014 – particularly bad in S England.**

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 **Question(s)** AQA GCSE Geography Revision  Astrea Academy Trust
INSPIRING BEYOND MEASURE

Why does extreme weather occur in the UK?

Answer(s)  N
S
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ASTREA
ACADEMY
TRUST
GCSE
GEOGRAPHY


.The UK is at the meeting point between several different types of weather from different directions. Arctic air brings heavy snow and bitter cold and weather from the East is often also severe cold.
Storms from the Atlantic bring heavy rain and strong winds and winds from the South can bring hot / sunny weather and potential heatwaves and droughts.

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Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE


Why does extreme weather occur in the UK?

Weather Hazards www.geobytes.org.uk

Answer(s) 


Linked to a warming world
More energy in the atmosphere could lead to more intense storms
Atmospheric circulation may be affected – bringing floods to normally dry regions and heatwaves to normally cooler areas.

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Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE

What are the predicted changes in the following as the UK's weather changes?
Precipitation - River Flow - Evaporation

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Answer(s) 

Precipitation – likely that it will become even more seasonal but annual total will stay the same
River Flow – predicted that UK rivers will flood more in future winters
Evaporation – predicted to increase due to higher air temperatures causing more drought.

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Name 4 possible types of extreme weather in the UK

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Answer(s) 

Drought
Heavy Rain
Heatwaves
Gales
Extreme Cold Weather
Thunderstorms

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INSPIRING BEYOND MEASURE


Name, locate and date an example of a recent extreme weather event and associated hazard in the UK

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Answer(s) 


Extreme flooding in Somerset due to heavy rain in the winter of 2013-2014.

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What was the cause of the severe flooding in Somerset 2013-2014?

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Answer(s) 

Autumn/winter 2013-2014 – series of low pressure systems from the Atlantic brought weeks of prolonged rainfall
December's rain was twice the monthly average and it was the wettest Jan on record – 350mm of rain fell in Jan/Feb (100mm above average)
Clay / Peat lands quickly saturated and the Rivers Parrett and Tone Flooded
The rivers hadn't been dredged for 20 years and made the flooding worse.

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Question(s) **AQA GCSE Geography Revision** 

Describe the location of the Somerset Levels affected by the 2013-2014 floods


Answer(s) 

Somerset levels are an area of low-lying land boarded by the Bristol Channel and the Quantock Hills to the West and the Mendip Hills to the North.

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Question(s) **AQA GCSE Geography Revision** 

Give 3 social effects of the 2013-2014 Somerset floods.


Answer(s) 

Over 600 houses flooded
 Many people left without power
 Residents evacuated to temporary accommodation for several months
 Villages like Moorland were cut off affecting people's daily lives (e.g. school and shopping)

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Question(s) **AQA GCSE Geography Revision** 

Give 3 economic effects of the 2013-2014 Somerset Floods


Answer(s) 

Bristol to Taunton railway line was closed (as part of track washed away)
 Estimated that costs of flooding were £10 million
 Over 24,000 ha. of agricultural land flooded for 3-4 weeks and livestock from 16 farms were evacuated.

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Question(s) **AQA GCSE Geography Revision** 

How many cells are there in the Global Atmospheric Circulation model and what are they called?


Answer(s) 

There are 3 cells – the Hadley, Ferrel and Polar cell

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Question(s) **AQA GCSE Geography Revision** 

What is meant by a high pressure system and how will this affect the weather?

Answer(s) 


High pressure means the air is sinking and gives rise to more stable conditions. As the air is not rising, condensation is not occurring, clouds are not forming and therefore there is little rain.

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Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE

With reference to air pressure and the atmospheric circulation model explain the typical equatorial climate.


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Answer(s)  ST IVO GEOMETRY

At the equator conditions are hot and wet. The high temperatures are due to the fact that the sun is directly overhead.


The high levels of rainfall are because the air is rising at this point at the start of the Hadley cell creating an area of low pressure. Here as the air rising, condensation occurs and clouds form. This leads to high levels of rainfall.

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Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
INSPIRING BEYOND MEASURE

With reference to air pressure and the atmospheric circulation model explain the typical desert climate

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Answer(s)  ST IVO GEOMETRY


Desert climates are hot and dry.

Most deserts are at 30°N or S of the equator. At this point air is sinking – high pressure.

Air isn't rising and therefore there are few clouds forming and little rain.


The lack of clouds also means that during the day it is very hot as there is nothing to stop the sun's rays and it is very cold at night.

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Question(s) **AQA GCSE Geography Revision**  Astrea Academy Trust
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Using the global atmospheric circulation model, explain the UK climate.

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Answer(s)  ST IVO GEOMETRY

The UK is about 55°N and is close to the boundary of the cold polar air moving down from the N and the warm subtropical air moving up from the south. Here this is rising air, cooling, condensing and forming cloud and rain.

Surface winds from the SW in summer bring warm and wet conditions.


If the air comes from the north, as it often does in the winter it can bring snow and very cold weather.

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Give 3 environmental effects of the Somerset Floods

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Answer(s)  ST IVO GEOMETRY

Floodwater contaminated with sewage and other pollutants

Stagnant water that had collected for months had to be pumped back into reservoirs


Huge amount of debris to clear.

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Give at least 2 strategies used to **manage** the risk of the Somerset Floods.

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Answer(s)  ST IVO GEOMETRY

20 year Flood Action Plan – launched by Somerset Council and Environment Agency – includes strategies to plan / protect against it happening again in the future

Flood defences – including new culverts, water control structure, more pumping stations

River Parrett and Tone were dredged – to remove soil, clay and vegetation from the channel to increase capacity and reduce risks of flooding

Roads raised to prevent disruption to transport in future events.

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