

Natural Hazards Flashcards

How is climate change the result of natural and human factors?

Natural = Orbit cycle, volcanic activity, suns level of activity

Human = Producing greenhouse gases, deforestation

What is the evidence for climate change?

Rising sea temperatures, rising sea levels, rising world air temperatures

What are the likely effects of climate change on people and environment?

More extreme weather patterns ie More storms and rain in the UK, Drier and hotter in North Africa, polar ice melt, warmer seas killing coral reefs etc.

Will effect farming, wildlife, etc

How might people manage the impacts of climate change?

- Mitigation (reducing causes) – Alternative energy, carbon capture, planting trees, international agreements
- Adaptation (Responding to changes) – Changes in agriculture (farming) managing water supply, reducing risk from rising sea levels

Which weather hazards is the UK at risk of?

(Thunderstorms, prolonged rainfall, droughts, snow and strong winds)

A case study of a recent extreme weather event in the UK

Somerset Floods – winter of 2013 and 2014

- **Causes** – Wettest winter on record, Storm surge and high tides pushed up the rivers. four rivers merge in Somerset, rivers had not been dredged for 20 years
- **Social, economic and environmental impacts** – Damage to homes, buildings, roads, crops, animal feed destroyed. Shops, schools, businesses shut down. Electric, water supplies off, animal habitat flooded. Evacuation of home owners, repairing damage
- **How management strategies can reduce risk** – Dredging, new pumping stations, 10 million pounds flood plan, plans for coastal barrage to stop the sea and mud being pushed up stream

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How might people manage the impacts of climate change?

Mitigation (reducing causes) – Alternative energy, carbon capture, planting trees, international agreements (Paris agreement 2017)

Adaptation (Responding to changes) – Changes in agriculture (farming) managing water supply, reducing risk from rising sea levels (Maldives)

What evidence is there that the UK climate is becoming more extreme?

- Wettest recorded winter 2013 / 2014
- 2003 hottest ever recorded temperature in Kent
- Severe floods in 2007, 2008, 2009, 2013/14 and 2015/16

Explain how earthquakes and volcanic eruptions are the result of physical processes.

- Relationship between plate boundaries and the location of earthquakes and volcanoes.
- How plate boundaries move. (Destructive, constructive and conservative)

How does a country's level of wealth influence the effects and responses to tectonic hazards?

- Primary and secondary effects of a tectonic hazard.
- Immediate and long term responses

Use **named examples** to show how the effects and responses to a tectonic hazard vary between two areas of contrasting levels of wealth

Examples = HIC = Chile

LIC = Nepal

How can management reduce the effects of tectonic hazards

- How monitoring, prediction, preparation and planning can reduce the risks from a tectonic hazard.
- Examples = Quake proof buildings, earthquake drills, rescue services, survival kits etc

How does global atmospheric circulation help to determine patterns of weather and climate around the world?

- General atmospheric circulation model:
- **Examples**
- Warm rising air at the equator produces **low pressure** belt and hot, cloudy, wet conditions
- Cool sinking air over the tropics north and south of the equator produce **high pressure** belts, clear skies and hot dry conditions.
- The **Coriolis** effect makes the winds in different directions north and south of the equator

Describe the formation of a tropical storm

- North and South of the equator within the Tropics
- Warm seas (Over 27 degrees centigrade), evaporation, storm formation, Coriolis effect spins storms, the warmer the seas the faster the rising air and the faster the storm spins. Over 75 mph = Tropical Storm

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Describe the structure and features of a tropical storm

- 300+ miles wide, Circular shape, wind speeds 75mph + up to 190 mph, calm eye, strongest winds in the eye wall, torrential rainfall.

Explain how climate change might affect the distribution, frequency and intensity of tropical storms.

Distribution – As oceans warm due to global warming Tropical Storms may begin to form further north and south of the equator outside tropical areas.

Frequency – Warmer oceans will make tropical storm formation more likely.

Intensity – Warmer oceans produce more energy and evaporation so tropical storms are likely to become more powerful.

Using a named example, explain how people and environments are affected by tropical storms.

Example – Hurricane Katrina, USA

PRIMARY EFFECTS

- 1800 people died
- Roads damaged
- Bridges collapsed
- Buildings destroyed
- Flooding
- Destroyed some coastal habitats

SECONDARY EFFECTS

- 1 million people were made homeless
- Landslides, blocked roads
- Power supply out
- Water/food shortage
- Looting, violence
- 30 offshore oil platforms sunk. This increased the price of fuel.
- 300 billion dollars of damage

What were the immediate and long term responses to Hurricane Katrina?

Immediate responses

The UK government sent food aid during the early stages.

The National Guard was mobilised to restore and maintain law and order.

About 25,000 people were given temporary shelter at a sports stadium (the Louisiana Superdome)

Evacuation and search and rescue

Long term responses

\$50 billion in aid was given by the government to rebuild infrastructure bridges public buildings etc

The US government has spent over \$800 million on rebuilding flood defences

How can monitoring, prediction, protection and planning can reduce the effects of tropical storms

- **Monitoring** using satellites. Satellites help **predict** path of tropical storm, **warnings** can be given. People and governments take action to **protect** themselves (evacuation, boarding up homes, sea defences built etc)

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- **Planning** – Emergency services practice how to respond to storms. In the USA there is 'Hurricane preparedness week' to help people prepare their own plans of what to do if a warning is given