KS3 Geography Knowledge: Interconnectedness

Lesson 1: What is Interconnectedness

Interconnectedness

Interconnectedness means places and the people and organisations are interconnected with other places in a variety of ways.

Example of my interconnectedness

- The foods I eat are from different countries around the world. For example, rice is a staple of most peoples diet in the UK, yet it is not grown in the UK.
- The music we listen to is influenced from different countries and people, listening to this means I am interconnected with others
- The clothing that I wear is made in countries outside of the UK, for example in Asian countries such as Pakistan.

Example of interconnectedness that I have studied

- **(Y7)Natural hazards** – when the 2010 Haiti earthquake happened, they received aid and assistance from countries across the globe such as the USA and the UK.
- (Y8) Climate Change – the impacts of climate change affect not just the countries that produce the most greenhouse gas emissions but many other countries around the world. The actions of one country can impact another showing how interconnected they are.

Lesson 2 : Afghanistan Introduction

Afghanistan key facts

- Afghanistan is located in Southern Asia.
- It is a landlocked country, surrounded by 6 other countries.
- Its capital city is Kabul, which is located in the east central part of the country
- It has a population of 38 million people, and the more densely populated areas are in the east of the country
- Afghanistan has a mountainous landscape with some flatter land in the north and south west
- Whist it does have regional variations: Afghanistan's climate sees hot summers and extremely cold winters which are typical in a semiarid climate

Why is Afghanistan under-developed?

Afghanistan's Development

Development Indicator	Afghanistan
GDP per capita	$2,065
Life expectancy	53.25 (52M / 55F)
Infant mortality	106.75 deaths
Literacy Rate	43%
HDI	0.511 Rank: 169

There are a number of factors that have contributed to Afghanistan's poor level of development.

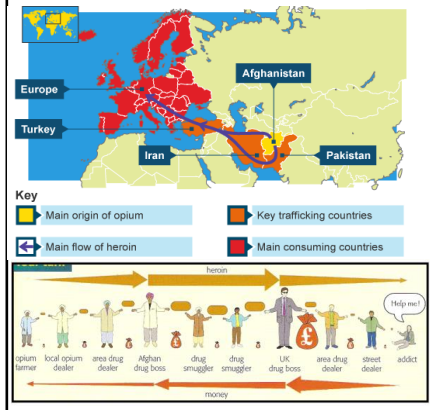
1. Afghanistan is a landlocked country which means it does not have a coastline which makes it harder to trade with other countries and make more money.
2. The land in Afghanistan is very mountainous and therefore hard to develop on. It has poor infrastructure such as roads, railways etc. It also has poor irrigation infrastructure.
3. Afghanistan has also had a long history of conflict which had a huge impact on development.. More specifically, conflicts are costly, so there is less money going towards making improvements in healthcare and education.
4. Conflict has impacted on trade between Afghanistan and its neighbouring countries and has also left Afghanistan to be seen as a country that is not stable, there are less opportunities for foreign investment, therefore less job opportunities and income.
5. Finally, Afghanistan is prone to a number of natural disasters such as earthquakes, floods, droughts, landslides. Money goes towards responding to these instead of developing different aspects of the country.

Lesson 3: Afghanistan Opium Poppy Flow

Opium Poppy

- An opium poppy is a flowering plant where the sap is used to make heroin.
- Heroin is a drug that devastates many people.
- Around 80-90% of the world's heroin comes from Afghanistan.
- Many Afghan farmers have very few options to earn a living so grow opium poppies approx. 3 million farmers
- There is little to no irrigation infrastructure so it is very difficult to grow anything.
- There is a very limited amount of factories in the country as a result there are less well paying jobs
- The climatic conditions mean they can often face drought and but the opium poppy flower can withstand these conditions.

Poppy Flow to the UK



- Due to globalisation trade across the world has increased and become easier. Even the trading of goods such as drugs.
- Europe is an important market for Afghanistan's opium poppy production and especially countries such as the UK, France and Germany. Look at the countries in red on the map opposite.
- But to get there it must travel through many other countries first.
- The 'Balkan route' is the route that is predominantly taken for the trading of heroin.
- Firstly heroin is trafficked through Iran, then it is trafficked through Turkey. Once it is here it is trafficked through the remainder of Europe.
- There are many people involved in the drug trade along this route. This includes farmers, dealers, smugglers, and addicts, all interconnected to each other as a result of Afghanistan.

Lesson 4 and 5: Iceland Introduction and Impacts

Iceland key facts

- Iceland is located in the North Atlantic Ocean, between Europe and North America, specifically Northern Europe.
- Capital city = Reykjavik, located in southwestern Iceland. Iceland is the 2nd largest island in Europe.
- The terrain in Iceland is mainly plateau but has some mountain peaks.
- Population = 350,000 people
- Located on a constructive plate boundary. North American plate and the Eurasian plate are moving away from each other on the Mid-Atlantic Ridge = new land is created
- Eyjafjallajökull is a volcano located in the south of the island – Eyja (island) Fjalla (mountain) Jokull (glacier)

Eyjafjallajökull Eruption 2010

- On the 14th of April 2010, an eruption occurred 250m below a glacier (ice sheet)
- This melted the ice on top of the volcano causing a glacial flood (a Jökulhlaup)
- Ash was ejected high into the atmosphere (ash plume) , almost 10km high
- The volcano continued to erupt and spew ash into the atmosphere.

Local Impacts

1. The local population of 800 people were evacuated due to the threats of the ash
2. Agricultural land was damaged due to falling ash
3. Local flooding due to the glacier melting.
4. Fish exports from Iceland were disrupted - a major local industry.

Global Impacts

1. European air space was closed = air space was at a standstill costing billions of Euro's
2. Sporting events = cancelled or postponed e.g. 2010 Japanese motorcycle grand prix.
3. Many Farmers in Kenya were affected as flowers and vegetables were left to rot losing up to $1.3m per day.
4. Barack Obama and other world leaders could not get to Poland to a state funeral
5. The prime Minister of Norway had to run Norway from NYC as he could not return.
6. More media attention for Iceland = mor tourists

KS3 Geography Knowledge: Interconnectedness

Lesson 6: International Migration

Migration Key Terms

- **Migration** – movement of people
- **Migrant** – someone who moves
- **Internal (domestic) migration** – within a country
- **International migration** – between countries
- **Emigrant** – someone moving out of an area
- **Immigrant** – someone moving into an area
- **Voluntary migrants** choose to move, eg. to start a new career
- **Forced migrants (refugees)** have no choice, move due to war or natural disasters, eg. Syrian war refugees.

The largest migrant population live in the United States (>40 million).

- **The main international migration routes:**
- South America → Mexico → USA
- West Africa → Spain → France → UK
- East Africa → Italy → UK
- Middle East → Europe
- The largest migrant proportion of the total population: in UEA, Saudi Arabia and Australia.

Push factors - reasons that people want to leave a place eg. *political fears, lack of jobs, natural disasters, wars, shortage of food.*

Pull factors - **reasons** that attract people to a new place, eg. *job opportunities, education opportunities, better housing, medical care, family links.*

All push and pull factors can be categorised into: social, economic, environmental and political.

Barriers or obstacles to migration:

- physical distance and cost of journey
- physical barriers (oceans, mountain ranges)
- political obstacles (international borders, immigration restriction)
- cultural barriers (different language and way of life).

Examples of past migration to the UK

- 1800's - Irish people fleeing from famine and poverty and Jews escaping persecution
- 1930's – Jews fleeing from Nazi's
- 1948 – Caribbean immigrants
- 1950-1970's – Indians, Pakistanis and Bangladeshis were looking for work
- 1972 – African-Asians were removed from Uganda by the government
- 2004 – Many migrant from the EU came to live and work in the UK
- 2016 – Since 'Brexit' there are fewer EU citizens travelling to the UK

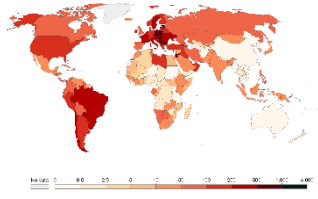
Migrants Impacts on Places

- Diversity in the UK is celebrated with music, food, colourful parades, e.g. annual Notting Hill Carnival in London celebrates Caribbean culture brought to the UK by West Indian immigrants after Second World War. Today it attracts people from all backgrounds who ant to join Europe's biggest street party.
- Migrants may change the places they migrate to. Evidence for this change can be found in our local area. The impacts of migration on our local area may change over time. For example on your high street you may find examples of restaurants from India, China, Turkey or Nigeria, Polish or Romanian delicatessen, Muslim mosques, Hindu temples and Catholic churches. Small businesses are frequently run by immigrants too.

Lesson 8: Covid Spread

Afghanistan key facts

- Coronavirus disease is an infectious disease caused by a newly discovered coronavirus.
- COVID-19 = Coronavirus 2019.
- Globalisation is the interaction and integration among people, companies & governments worldwide. For example, steam ships used to be 36mph and now planes are 500-700mph. COVID-19 has travelled worldwide due to contaminated people using transport.
- COVID-19 can also travel easily when a country is densely populated.
- This means that there are more people in an area for the virus to be passed through the air. The percentage of a country isn't always an accurate indication of the severity of COVID-19. This is because some countries are more populated than others. For example, in May 2019 22 million people in India had tested for positive for COVID-19, however this was only 1.59% of the population, whereas the UK had 6.6% positive with only 4 million cases.



Lesson 8 & 9: Covid-19 Spread and Impacts

Types of employment:

The four different job sectors:

- Primary – People work with raw materials, for example, fishing, mining, farming
- Secondary – Manufacturing, turning raw materials into something else (factories)
- Tertiary – Providing service and skills – for example, teachers, construction, lawyers
- Quaternary – Jobs in research and development, for example, pharmaceuticals and IT

Impacts of Covid-19

1. Pick for Britain (UK government campaign) to encourage people (70,000 workers) to apply to help out in the farming business.
2. Many foreign seasonal workers were unable to travel to the UK during COVID-19 (travel regulations).
3. Globally, maize prices raised by 80% and wheat prices 28% higher in 2021 since January 2020.
4. Shops were closed globally (UK lockdown) and shoppers were encouraged to only leave the house for essential reasons. Lots of unemployment of tertiary workers (hospitality & retail).
5. Amazon gained global record profits in July 2020 and continues to do so through 2021. Amazon's total sales surged 26% to £13.73bilion. They also increased the workforce by 34% during 2020/21, which created many economic opportunities in the manufacturing sectors.
6. Governments around the world have pledged billions of dollars for a Covid-19 vaccine and treatment options.
7. By May2021, the UK had already spent £12 billion on COVID-19 vaccinations.
8. In the UK, car annual sales have slumped by 29% to less than two million, the biggest year-on-year fall since the Second World War. During the first full month of lockdown, car sales fell by 97%.

Lesson 10: Interconnectedness and the Future

The future?

- Throughout this unit we have looked at many examples of how we are interconnected with countries and places around the world.
- But will that change in the future?
- There are different things that are happening around the world that mean we are more connected with some places and less connected with others.

Will we be more or less interconnected?

THE UK NO LONGER PAR TOF THE EU:

- The UK has left the EU (Brexit)
- As part of the EU a group of 27 = freedom to live and work in EU countries
- Free trade with other EU countries
- Brexit = no longer able freely able to do these.
- Links within EU may be harder to maintain.

THE RISE OF TECHNOLOGY AND SOCIAL MEDIA:

- Technology has increased our ability to communicate with other countries and places.
- Covid-19 pandemic saw an increase in how we use technology and extended links.
- Social media (Instagram, twitter, tiktok) = played a role in making us more interconnected. with people all over the world that otherwise we would not be able to do.

UK FOOD IMPORTS:

- The UK imports over 40% of its food = EU, Africa, North America. (fruit, vegetables, meat)
- UK relies on may other countries to ensure that we can feed our population.
- The ONS (office for national statistics) estimated = additional 7.5 million people in the UK by 2050 = a larger demand on food.

FIGHT AGAINST CLIMATE CHANGE:

- Climate change is a global problem = most of the counties around the world are contributing to.
- impacts will not be distributed fairly. The lowest contributors to CC (LICs) will feel the largest impacts.
- Climate change needs countries of the world to work together with the aim of reducing the GHG emissions
- International agreements E.G. Kyoto Protocol in 1997 and 2015 Paris Agreement.

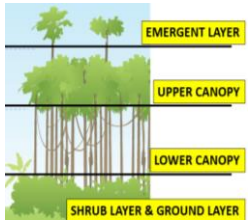
KS3 Geography Knowledge: Ecosystems

An ecosystem is an area, within which plants and animals interact with each other and their non-living environment (rock, soil, climate). They can be as small as a hedgerow or pond. Larger ecosystems are known as biomes (tropical rainforest, the desert).

Rainforest

- **Location**
  - Along the equator in central Africa (Nigeria, Congo), south-east Asia (Malaysia, Indonesia), north Australia and South America (Brazil, Peru).
- **Climate**
  - Humid (hot & wet). The average daily temperature is 28°C. It t never goes below 20°C. and rarely above 35°C. It receives at least 2000mm of rain each year. There are no real seasons.
- **Vegetation**
  - Very dense vegetation. There are over 1,000 different types of trees including hardwoods such as mahogany and greenheart. There are four layers of vegetation in the tropical rainforest. The vegetation has had to adapt, in order to survive with the constant high temperatures and the heavy rainfall.

  - ➢ *The trees grow over 40 metres tall to get sunlight. Large buttress roots anchor the tall trees and prevent them falling over.*
  - ➢ *The leaves have drip tips to shed the heavy rainfall.*
  - ➢ *Lianas are vine like plants. They use large trees as support to climb up to the canopy.*
  - ➢ *The forest floor is dark as the leaves block out the sunlight. As a result, the leaves in this lower level are very large as they try to catch as much sunlight as possible.*



- **Animals**
  - Millions of species (e.g. jaguar, alligator, monkeys, apes). It is believed that in the Amazon Rainforest there are over 2,000 species of birds and 1,500 species of fish. There is also thought to be 50,000 kinds of insects in a single square mile. Animals have to adapt to survive in the rainforest (see adaptations section).

Savannah

- **Location**
  - The savannah ecosystems is located between the rainforests found at the equator and deserts found along the tropic lines. More precisely, they are located between 23.5° north and 23.5° south of the equator. The largest expanses of savannah are in Africa, for example **Kenya** and **Tanzania**, consists of tropical grassland. They are also located in South America, Africa, Asia and Australia.
- **Climate**
  - The savannah has two seasons: a wet season and dry season. Its annual precipitation is between 100-150cm of rain, however most of this falls in the wet season. The temperature is warm throughout the year, with a temperature range between 25°C to 30°C across the year.
- **Vegetation**
  - The main type of vegetation is grass, which grows very tall. There are also occasional scattered trees such as the Baobab tree and Acacia tree. These have adapted to survive in the savannah.
    - ➢ ***The Baobab Tree:*** *it only produces leaves in the wet season and their leaves are very small. These both reduce the rate of transpiration = less water lost. They are also able to store water in their tree trunk to help it survive in the dry season.*
    - ➢ ***The Acacia Tree*** *it has long roots that travel deep underground to search for groundwater. To avoid water loss they have small waxy leaves which prevents transpiration. To protect against predators, it has sharp thorns and a chemical defence system where it secretes a poisonous fluid into its leaves. This prevents it being eaten by giraffes.*
- **Animals**
  - Lots. Most are fast with strong legs (zebra, giraffe). There are many herbivores due to the high amount of grass, however carnivores (lions, cheetahs) are also found in the savannah due to the high number of herbivores.

Desert

- **Location**
  - Near the Tropic of Cancer and Tropic of Capricorn at 23. 5°C north and 23. 5° south of the equator
- **Climate**
  - Arid (hot with very little rain). The average temperature is 40°C in the day and average annual rainfall is 250mm.
- **Vegetation**
  - Sparse (e.g. cactus, Joshua tree)
- **Animals**
  - Very few. Scorpians have adapted

Tundra

- **Location**
  - North (arctic circle) and south poles
- **Climate**
  - Very cold, very dry, soil is permanently frozen (permafrost). Winters are cold, dark and long, with an average temperature is -30°C. In mid-December it is dark all day. In the summer temperatures vary between 0-10°C.
- **Vegetation**
  - Sparse – usually small bushes and flowers. The top layer of soil only thaws during 2-3 months in the summer.
- **Animals**
  - Few (e.g. penguin, polar bear).

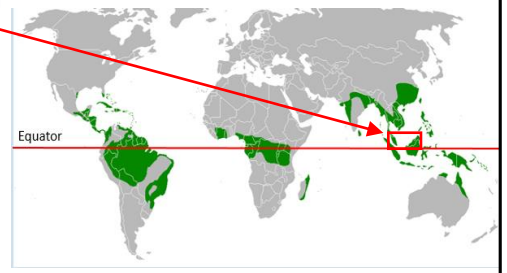
Producer	Organisms that get their food from the natural environment (*photosynthesis*) e.g. vegetation
Consumer	Organisms that feed on other organisms (producers and consumers). • herbivores (only eats plants) • carnivores (eat only animals) • omnivores (eats animals and plants)
Decomposer	Decomposers (fungi, bacteria) feed on dead producers & consumers. This dead material is known as litter. They break down the litter and recycle the nutrients back to the soil.
Food Chain	A food chain is a single line of linkages between producers and consumers. **It shows what eats what.**
Nutrient Cycle	The movement of nutrients around an ecosystem. *e.g. when dead material is decomposed, nutrients are released into the soil. The nutrients are then taken up from the soil by plants. The nutrients are then passed to consumers when they eat the plants. When the consumers die, decomposers return the nutrients to the soil.*

Animals adapt to survive in the ecosystem they live in. *Adaptation = changing to suit the surrounding environment.*

Camel (desert)	• Long eyelashes which keep sand out of their eyes. • Camouflage - their colour helps them blend in. • They store fat in their hump which can be used for energy. Therefore they can go months with no food.
Giraffe (savannah)	• Long necks help them to reach tall trees for food. • Long legs help them run very fast. • Camouflage: their colour helps them blend in.
Cheetah (savannah)	• Spots help them stay camouflaged. • Paws help them to run quietly so they are able to sneak up on their prey. • Large nostrils and enlarged hearts and lungs help them to circulate oxygen efficiently = they can run fast.
Spider monkey (rainforest)	• Their long limbs (arms and legs) allow spider monkeys to swing through the trees with ease. • Their strong tails allow them to hang suspended up in the trees and aids their swinging. • 90% of their diet comes from nuts, seeds, fruit and insects.
Poison Dart Frog (rainforest)	• Is very small to prevent being eaten • Has skin that releases poison when touched
Polar Bear (tundra)	• Thick white fur to help camouflage help them keep warm. • Layer of fat under their skin helping them stay warm. • Large feet help to spread their weight over a larger surface area. This prevents the ice breaking beneath them.

KS3 Geography Knowledge: Ecosystems

Malaysia is a country in South East Asia. It is made up of Peninsular Malaysia and East Malaysia. 67% of Malaysia is covered in tropical rainforest.
Humans use the tropical rainforest in Malaysia for a number of economic industries = more jobs, income and taxes which the government can spend on improving the country (*education, healthcare, transportation*). Unfortunately it also causes deforestation. The rate of deforestation in Malaysia is increasing faster than in any tropical country in the world. Between 1990 and 2010, Malaysia lost over 1.9 million hectares of rainforest, which has a number of further impacts (see below).



ECONOMIC DEVELOPMENT IN THE RAINFOREST & ITS IMPACT

Cattle Farming	Large areas of the rainforest are cleared for cattle ranches. In 2017, 744,000 cows were sold for their meat. ***Good**: jobs, better income, government gets more taxes = money for development (improve healthcare, education…etc.)* ***Bad**: deforestation, habitat loss, less photosynthesis = more global warming*
Palm Oil Production	In the 1970s large areas of the rainforest were cleared and made into massive palm oil plantations (farms). Their fruit gives palm oil which we use in cooking oil, bread, cake, chocolate & candles. ***Good**: jobs, better income, government gets more taxes = money for development (improve healthcare, education…etc.)* ***Bad**: deforestation, habitat loss, less photosynthesis = more global warming*
Logging	In 1980, Malaysia became the world's largest exporter of tropical wood (ebony and mahogany). ***Good**: jobs, better income, government gets more taxes = money for development (improve healthcare, education…etc.)* ***Bad**: deforestation, habitat loss, less photosynthesis = more global warming, trees can take 100s of years to regrow.*
Mining	There are huge deposits of minerals (copper, tin) in the Malaysian rainforest. Land is cleared and mined to access these minerals which are then sold to other countries. Roads are created to improve access to the mines. ***Good**: jobs, better income, government gets more taxes = money for development, better transport routes.* ***Bad**: deforestation, habitat loss, less photosynthesis = more global warming, pollution from machinery, chemicals used in mining poison ecosystem.*
Hydro-electric power	The high quantity of water in the rainforest can be used to create cheap energy in hydro-electric power stations. The Bakun Dam is a dam in Malaysia that generates electricity for its people. It is the highest dam outside of China (205m). ***Good**: jobs, income, money for development, provide sustainable clean energy to locals and industries.* ***Bad**: when you build a dam, a massive reservoir (lake) is created behind it, which floods large areas of land = loss of habitats/settlements. Tribes lose their homes, land and culture. The Bakun Dam flooded over 700km2 of forest.*

SUSTAINABILITY IN THE RAINFOREST. *Sustainability: meeting the needs of today without harming the environment in the future.*

Selective logging	Only some trees that have been selected are cut down rather than cutting down all the trees in an area. Malaysia implemented a Selective Management System in 1977 which identifies which trees are to be cut down and implements strict fines for illegal logging.
Afforestation	Afforestation is when new trees are planted as others are cut down. Trees stabilize the soil, replenish lost nutrients and provide habitats for wildlife.
National parks	Areas are protected from development and deforestation. There are more than 30 national parks in Malaysia, including Taman Negara National Park, which protects 4344km2 from development and deforestation.
Coppicing	Coppicing is when you only cut trees down halfway. This means you get the wood you need to make furniture, fuel or paper, however the trees can regrow quickly. This means there is a constant supply of wood.
Raising awareness & education	Educate people and companies on how they are harming the rainforest and provide ideas of how they can make money in the rainforest, however in a more sustainable way. The World Wildlife Fund (WWF) works with governments to better create and protect National Parks. It also helps to identify the most suitable areas to build dams or roads to have minimal impact on the rainforest and its people.

The savannah ecosystem is located between the Tropic of Cancer and Tropic of Capricorn, in South America, Africa, Asia and Australia. Almost 65% of Africa is covered by savannah grasslands, in countries such as Tanzania, Nigeria, Uganda and Kenya. Humans use the rainforest for a number of economic activities, including safaris (tourism), cattle farming and growing crops. These activities bring a lot of economic advantages with jobs and money for development, however they are also causing desertification. **This is happening today in the Sahel – the area covering Africa's northern savannah, just south of the Sahara Desert.**

Desertification: the process where land gradually turns into a desert. It becomes drier, less fertile and vulnerable to erosion.

CAUSES OF DESERTIFICATION IN THE SAHEL

Climate change	Climate change results in extreme weather, such as droughts. Lack of rainfall = not enough rain for the soils to have moisture and stay healthy. Also plants die due to lack of water = roots no longer hold the soil together = vulnerable to erosion. High temperatures = any water is immediately evaporated leaving the soil very dry. Also salts in the water are left on the soil after the water is evaporated = salty, dry soil that is vulnerable to erosion.
Over-grazing	Animals remove vegetation cover, when they eat. This leaves the ground bare and unprotected. Wind and rain can then easily carry off the loose soil. It also reduces the soil's ability to carry moisture, making it dry and vulnerable to desertification.
Over-cultivation	Population growth in the Sahel = more demand for food. As a result land is being over-farmed. This uses up all the nutrients in the soil, leaving it dry and exposed to erosion. Often people in the Sahel cannot afford fertilisers to replace the removed nutrients.
Deforestation	Population growth = increased demand for fuel wood = increased deforestation. The roots of trees previously would bind the soil together, preventing soil erosion. Therefore, without any trees the soil is more vulnerable to erosion. Furthermore, if the trees are removed their nutrients are not returned to the soil by decomposers = soil becomes less fertile.

RESPONDING TO DESERTIFICAITON: how can we reduce the risk of desertification in the Sahel?

Afforestation (planting trees)	• The roots also help to hold the soil together and prevent erosion. • When the plants/leaves die, their nutrients are giving back to their soil. • They act as windbreakers and therefore reduce wind erosion.
Crop Rotation	When farmers allow a field to rest between farming. This allows the soil time to repair and get their nutrients back. This prevents over-cultivation.
Grazing Rotation	Move the animals from place to place to reduce the amount of vegetation eaten or reduce the number of farm animals. This prevents over-grazing.
Coppicing	Coppicing is when you only cut trees down halfway. This means you get the wood you need to make furniture, fuel or paper, however the trees can regrow quickly. This means there is a constant supply of wood.
Plant hedges	Hedges trap dry soil from being blown away by the wind. This stops the land turning into a desert.
Store water for irrigation	Earth Dams: collect and store water in the wet season. The stored water is then used to irrigate crops in the dry season.

Knowledge Organiser: Year 9 Natural Hazards

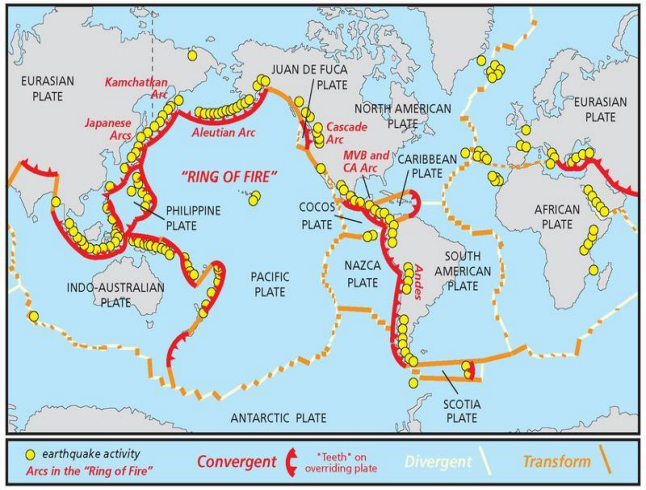
Effects of Tectonic Hazards

Primary effects happen immediately. Secondary effects happen as a result of the primary effects and are therefore often later.

Primary - Earthquakes	Secondary - Earthquakes
- Property and buildings destroyed. - People injured or killed. - Ports, roads, railways damaged. - Pipes (water and gas) and electricity cables broken.	- Business reduced as money spent repairing property. - Blocked transport hinders emergency services. - Broken gas pipes cause fire. - Broken water pipes lead to a lack of fresh water.
Primary - Volcanoes	**Secondary - Volcanoes**
- Property and farm land destroyed. - People and animals killed or injured. - Air travel halted due to volcanic ash. - Water supplies contaminated.	- Economy slows down. Emergency services struggle to arrive. - Possible flooding if ice melts Tourism can increase as people come to watch. - Ash breaks down leading to fertile farm land.

Distribution of tectonic activity	Along plate boundaries. On the edge of continents. Around the edge of the Pacific.

Usually LICs suffer more than HICs from natural disasters because they are not as prepared and struggle to react effectively. However, a secondary effect of a tsunami is very difficult to prepare for and so the HIC was severely effected. Very few deaths from the earthquale directly



Comparing Earthquakes – Nepal (LIC) and Japan (HIC)

	Nepal. April 2015. Magnitude 7.8.	Sendai, Japan March 2011. Magnitude 7.3.
Primary Effects	9000 deaths 23000 injured Over 500,000 homes destroyed Historic buildings including Dharahara Tower fell 26 hospitals and 50% of schools destroyed	Few deaths from EQ Minor damage to buildings, roads and infrastructure
Secondary Effects	Avalanche on Mount Everest killing 19 people. Loss of income from tourism (which was 8.9% of Nepal's GDP). Rice seed stored in homes was ruined as homes collapsed. This caused food shortages.	Triggered a 10 metre high tsunami. Sea wall dropped, allowing the tsunami wave to flow 10 miles inland. 15,000+ people killed by tsnuami 300,000 buildings destroyed
Immediate Responses	Nepal requested international help. UK's DEC raised $126 million. Red Cross- tents for 225,000 people. UN and WHO distributed medical supplies to the worst districts. Facebook launched a safety feature so people could indicate they were safe.	Emergency aid such as food, medicine and water flown into most effected regions. Nuclear powerplant shut down amid fears of radioactive leak from sea water contmaination
Long term responses	Rebuilding. World Heritage Sites reopen June 2015. Longer climbing season.	Continue to monitor. Continue to prepare. Continue to have building regulations.

Reducing the impact of tectonic hazards

Monitoring	Prediction
Seismometers measure earth movement. Volcanoes give off gases.	By observing monitoring data, this can allow evacuation before event.
Protection	**Planning**
Reinforced buildings and making building foundations that absorb movement. Automatic shut offs for gas and electricity.	Avoid building in at risk areas. Training for emergency services and planned evacuation routes and drills.

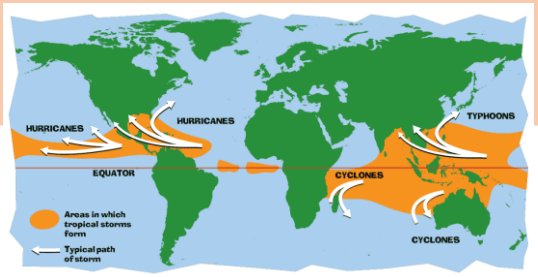
Responses to Tectonic Hazards

Immediate (short term)	Long-term
- Issue warnings if possible. - Rescue teams search for survivors. - Treat injured. - Provide food and shelter, food and drink. - Recover bodies. - Extinguish fires.	- Repair and re-build properties and infrastructure. - Improve building regulations - Restore utilities. - Resettle locals elsewhere. - Develop opportunities for recovery of economy. - Install monitoring technology.

Knowledge Organiser: Y9 Climatic Hazards

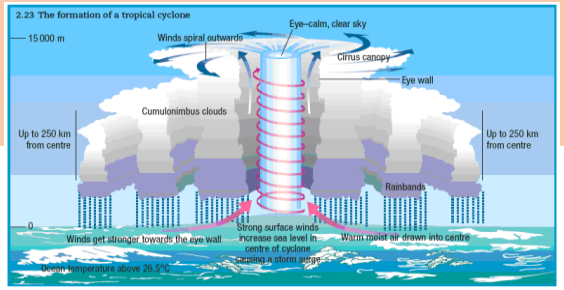
Tropical Storms

Occur in low latitudes between 5° and 30° north and south of the equator (in the tropics).
Ocean temperature needs to be above 27° C.
Happen between summer and autumn.



Sequence of a Tropical Storm

1. **Air is heated above warm tropical oceans.**
2. **Air rises under low pressure conditions.**
3. **Strong winds form as rising air draws in more air and moisture causing torrential rain.**
4. **Air spins due to Coriolis effect around a calm eye of the storm.**
5. **Cold air sinks in the eye so it is clear and dry.**
6. **Heat is given off as it cools powering the storm.**
7. **On meeting land, it loses source of heat and moisture so loses power.**



Climate change will affect tropical storms too. Warmer oceans will lead to more intense storms – but not necessarily more frequent ones.

Typhoon Haiyan, Philippines, November 2013

Primary Effects	Secondary Effects
At least 6340 killed 314 km/hr wind speeds. 5m Storm Surge 90% buildings in Tacloban destroyed Habitats & Crops destroyed	$1.5 Billion of damage Water supply polluted 1.9 million homeless, 6 million displaced Public Order – Looting Airports unusable for supplies

Immediate Responses	Long-term Responses
70-80% of New Orleans evacuated before hurricane reached land. State of emergency declared in Louisiana and Mississippi. Emergency shelters set up in public buildings. UK and US send navy ships. Charities provided shelter, food and medical supplies.	UN appeal raised $788 million. Another $500 million from other governments. Some houses rebuilt on stilts. Some areas zoned as no build areas. Improved warning systems pu place.

Prediction	Planning	Protection
Monitoring wind patterns allows path to be predicted. Use of satellites to monitor path to allow evacuation	Avoid building in high risk areas Emergency drills Evacuation routes	Reinforced buildings and stilts to make safe Flood defences eg levees and sea walls Replanting Mangroves

Extreme Weather UK 4th-5th December 2015 – Storm Desmond

The 4th named storm of the winter of 2015-16. Particularly effected Cumbria.
341.4 mm of rainfall recorded in 24 hrs

Social Effects

3 deaths.
19000 homes flooded across Northern England.
100,000 homes affected by power cuts.
More than 40 schools in Cumbria were closed. Appointments in many hospitals in Cumbria were cancelled as hospitals had no mains electricity.

Economic Effects

Caused £500 million damage in Cumbria.
Landslides and flooding closed some main roads and many bridges were damaged causing extra transport costs for businesses.
The rail route between England and Scotland was closed due to flooding.

Environmental impacts

Large amounts of soil were washed into the rivers, with millions of tonnes of silt transported by rivers and deposited on floodplains

Management strategies

Met Office issued weather warning
Environment agency issued flood warning
Soldiers took supplies to remote areas in the Lake District.
The government gave £50 million to repair damage in Cumbria and Lancashire.
The Cumbria Flood Recovery Fund 2015 helped families who had little insurance .

Extreme weather in the UK

Rain – can cause flooding damaging homes and business.
Snow & Ice – causes injuries and disruption to schools and business. Destroys farm crops.
Hail – causes damage to property and crops.
Drought – limited water supply can damage crops.
Wind – damage to property and damage to trees potentially leading to injury.
Thunderstorms – lightening can cause fires or even death.
Heat waves – causes breathing difficulties and can disrupt travel.

UK weather is getting more extreme due to climate change. Temperatures are more extreme and rain is more frequent and intense leading to more flooding events. Since 1980 average temperature has increased 1 degree and winter rainfall has increased.