

Key Points to Learn

1. Natural Hazards	A natural event that threatens people or had the potential to cause damage, destruction or death. E.g. Earthquake/Floods		
2. Factors affecting hazard risk	Wealth – impacts building quality and ability to predict and plan Location - e.g. UK cannot get Tropical Storms, height above sea level effects flooding risk		
3. Layers of the Earth	Crust (continental, oceanic), Mantle (molten rock/magma), Outer Core and Inner Core		
4. Plate tectonics theory	Overtime the plates have moved. This due to convection currents. Magma in the mantle gets warm and rises. It then cools and falls. This continual movement causes the plates to move.		
5. Destructive (subduction) plate boundary	1)Plates move towards each other. 2)The denser oceanic plates goes beneath the continental plate. 3) It melts and this in turn creates a volcano.		
6. Destructive (collision) plate boundary	1) Plates move towards each other. 2) The plates are the same density and so force each other upwards. 3) Forms Fold Mountains.		
7. Constructive plate boundary	1) Plates move apart from each other. 2) Magma rises up in between the two plates. 3) This forms a volcano and new land.		
8. Conservative plate boundary	1) Plates move past each other. 2) They get stuck. 3) This builds up tension. 4) Plates eventually slip past and tension released. 5) This release sends seismic waves – earthquake.		
9. Nepal Earthquake - LIC	Poor building quality, no preparation and no helicopters		
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10. Chile Earthquake - HIC	Good building quality, well prepared and helicopters		
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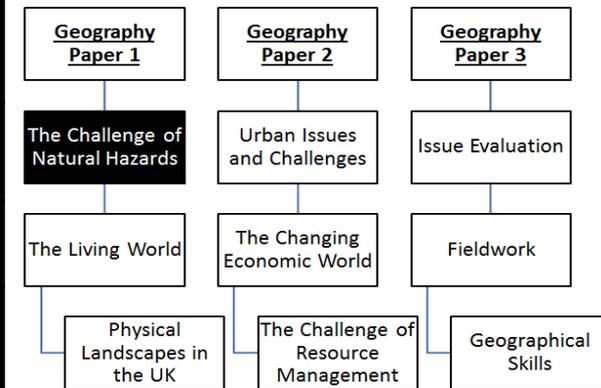
11. Primary Effects	The initial impact of an event – worse than secondary as often people not prepared and don't have as much time to react.		
12. Secondary Effects	The after effects that occur as indirect impacts		
13. Immediate response	The reaction of people during and straight after an event		
14.. Long-term responses	Later reactions that occur in the weeks, months and years after the event		
15. Why live near tectonic hazards?	Complacency – people feel they are safe Fertile soils near Volcanoes Tourism – means people can get jobs		
16. Monitoring – reducing risk	Volcanoes – checking gas readings. Seismographs to record earthquakes and satellites detect changes to the volcano's shape. Earthquakes – hard to monitor – some changes to water pressure and some minor tremors before a big earthquake,		
17. Prediction – reducing risk	Volcanoes – a rise in the number of earthquakes suggests an eruption will happen. Earthquakes – Impossible to predict.		
18. Planning – reducing risk	Volcanoes – hazard maps show where areas will be effected by eruptions. People do not build there Earthquakes – High value areas are kept away from areas that are prone to earthquakes or would be badly affected.		
19. Protection – reducing risk	Volcanoes – explosives divert lava flows. Earthquakes – buildings have shock absorbers in the ground, stronger concrete columns and weights at the top of the building to counteract shock waves.		
20. Pressure Bands	1) Equator, 60° N and S – low pressure – air can rise cool and condense. 2) 30° and 90° N and S- High pressure – air cannot rise, cool and condense		
21. Surface Winds	Winds travel from High to low pressure. Deflected to the right in the N Hemisphere and to the left in the S Hemisphere		
22. Topical Storms	Winds of 120kph and over. Known as Hurricanes and Cyclones		
23. Conditions needed for Tropical Storms	Warm Water – 27°C and over 5°-15° N and S of the equator – gains the spinning effect (Coriolis force) Low pressure – so air can rise		
24. Structure of a Tropical Storm	<table border="1"> <tr> <td> <ul style="list-style-type: none"> Eye Eye Wall Wispy clouds </td> <td>  </td> </tr> </table>	<ul style="list-style-type: none"> Eye Eye Wall Wispy clouds 	
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Year 11 Knowledge Organiser

Topic: The Challenge of Natural Hazards

Name.....

Big Picture



Background

The Natural Hazard unit is all about the events that can cause significant risk to both people, the economy and the environment. The unit will focus on cause, effect and management. Your main case studies are: Chile and Nepal Earthquakes, Typhoon Haiyan and the Gloucestershire Floods.

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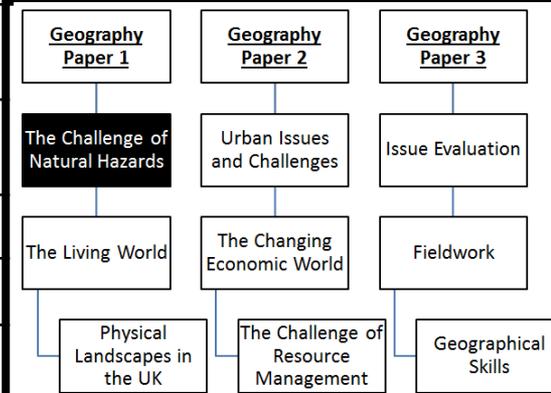
Chile Earthquake and Somerset floods missing

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25. Formation of a Tropical Storm	1) Air rises with a large amount of water. 2)Cools and condenses. 3) Spinning of the Earth sets up its characteristic shape. 4) Eye formed in the middle by sinking cold air.
26. Effect of climate change on Tropical Storms	Becoming more frequent, more intense and will occur in more areas as the water warms up.

33. Human Causes	Fossil Fuels As more countries develop more electricity needed – burn fossil fuels creates CO ₂	Agriculture More food needed, ore cattle ranching they give off methane	Deforestation Trees are cut down. This releases CO ₂ Into the atmosphere
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27. Typhoon Haiyan – Phillipines	Primary Effects 1) 6300 people died 2) 30000 fishing boats destroyed	Secondary Effects 1) Flooding caused landslides 2) Looting in Tacloban
	Immediate responses 1) US helicopters helped search for survivors 2) 1200 evacuation centres	Long term responses 1) Rebuilding infrastructure 2) Building away from flood zones

38. Natural Causes	Orbital Changes Milankovitch cycles – eccentricity. There are times our orbits takes us closer to the sun.	Fossil Fuels Volcanic activity releases ash into the atmosphere that causes the world to cool down.	Solar Output Sunspots have been linked to a change in the amount of heat produced
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28. Monitoring – reducing risk	US National Hurricane Centre monitors and tracks Hurricanes
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39. Effects of climate change - people	P – fewer cold deaths P – new crops can be grown in UK – e.g. peaches	N – more cases of malaria N – Water shortage N – Scottish ski resorts close
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29. Prediction – reducing risk	US National Hurricane Centre can predict where hurricanes will hit and how strong they will be.
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40. Effects of climate change - environment	P – Longer growing seasons P – More plant growth in frozen areas.	N- 20-50% of species in Africa face extinction.
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30. Planning – reducing risk	USA has National Hurricane Preparedness Week. Website explains evacuation plans.
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41. Mitigation	Action taken to reduce risk
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21. Protection – reducing risk	Hurricane shelters have been built
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42. Adaptation	Action taken to adjust and live with a risk
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33. UK Weather hazards	The UK is mostly likely to be hit by strong storms, flooding and some drought (hosepipe bans)
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43. Alternative Energy Production	Using solar energy does not burn fossil fuels.
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34. Evidence UK weather becoming more extreme	2015 Flooding throughout the UK, 2015 windiest year on record, hottest ever November
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44. Carbon Capture	Carbon can be captured when it is produced from burning fossil fuels. This is then stored in the ground.
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35. Somerset Floods 2014	Cause: Wettest January since records began. River had not been dredged for 20 years		
	Social Effects 6000 homes flooded 16 farms evacuated Residents evacuate for months	Economic £10million of damage 14000ha of farmland under water	Environmental Floodwater became polluted. Stagnant had to be reoxygenated
	Immediate Responses Helicopters and search and rescue teams. Clean water brought into the area.	Long-term responses Dredging of river, building levees, widening the river	

45. Reforestation	Planting trees – trees take in CO ₂ from the atmosphere.
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46. International agreements	Paris Agreement 2015 – 195 countries signed to reduce their greenhouse gasses and to keep temperature increase below 2°C
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47. Change in agriculture	Farmers being educated in rain harvesting, irrigation canals used and planting of more drought resistant crops.
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48. Managing water supplies	In some areas people have created artificial glaciers. This is where they get vertical blocks ice from cold regions and bring it to their villages.
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36. Climate Change	A long term change in the Earth's climate.
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49. Reducing Flood risk	Maldives have built a sea wall around their capital.
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37. Evidence of climate change since the Quaternary period	Temperature – steadily increasing Ice Cores – show temperature increase Sea Levels are rising and Glaciers are retreating.
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50. Greenhouse effect	Greenhouse gases let the sun's rays heat the earth. As this is reflected it traps the heat and sends it back to earth.
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