

YEAR 10 GEOGRAPHY – CYCLE 1 – EARTHQUAKES (TECTONIC HAZARDS CASE STUDY)

BOX 1: KEYWORDS		BOX 3: WHY DO PEOPLE LIVE IN AREAS AT RISK FROM TECTONIC HAZARDS?	
tectonic hazard	volcano or earthquake	family and friends	people do not want to move away from friends and family → may have cultural attachment to the area → may also be a cheaper area to live
primary effects	what happens straight away e.g. during an earthquake → buildings collapse	tourism	more than 100 million people visit areas affected by volcanoes and earthquakes on holiday → tourism provides an income to local people e.g. tour guides, hotel workers → locals stay in area for employment
secondary effects	what happens later on e.g. after an earthquake → broken gas pipes may cause fires	farming	areas with tectonic hazards are often very fertile → volcanoes release nutrients into soil → very good for farming → provides income → only 1% of Earth has volcanic soils but this provides food for 10% of population!
immediate responses	how people help straight away e.g. straight after an earthquake → first aid and people rescued	mining	people employed to mine sulphur from volcanoes → sulphur used in matches , to bleach sugar and for fertilisers → paid on average \$6 per day
long-term responses	how people help later on e.g. weeks, months and years after an earthquake → e.g. schools rebuilt	geothermal energy	water heated by hot magma → turns into steam → used to turn turbines → generates electricity → renewable energy → 30% of electricity in Iceland is from geothermal energy
contrasting wealth	e.g. places with different amounts of money and development		
magnitude	number to show the strength of an earthquake <ul style="list-style-type: none"> magnitude 1 → not felt by people magnitude 8 → total destruction 		

BOX 2: EARTHQUAKE CASE STUDIES → IN CONTRASTING AREAS OF WEALTH			BOX 4: HOW CAN MANAGEMENT REDUCE THE RISKS FROM TECTONIC HAZARDS?		
	earthquake → Italy	earthquake → Nepal		earthquakes	volcanoes
location	Amatrice, Italy (Europe)	Gorkha, Nepal (Asia)	monitoring and prediction	<ul style="list-style-type: none"> difficult for earthquakes seismometers record foreshocks in ground radon gas detectors measure gas released from cracks earthquakes are mapped to spot patterns and trends 	<ul style="list-style-type: none"> easier for volcanoes tiltmeters record changes in shape of volcano heat sensors detect temperature changes spiderbots measure gases escaping from volcano
development	High Income Country	Low Income Country	protection	<ul style="list-style-type: none"> earthquake proof buildings e.g. rubber shock absorbers, pendulum in roof, X shaped frame nuclear power stations shut down during earthquake people can hide under tables for some protection 	<ul style="list-style-type: none"> impossible to build homes to survive eruption → so people must evacuate can build lava diversion channels to move lava away from towns closing windows to stop ash entering homes
GNI per capita	In 2015 → \$32,910	In 2015 → \$780	planning	<ul style="list-style-type: none"> earthquake drills to rehearse 'drop cover hold' emergency survival kits smart phones detect shaking → send alert message attach furniture and objects securely to wall and floor 	<ul style="list-style-type: none"> warning system to alert people to evacuate area preparation of an emergency survival kit using a checklist education on how to survive volcano drills to rehearse evacuate route
date and time	24 th August 2016 (3:36 am)	25 th April 2015 (11:56 am)			
magnitude	6.2	7.8			
primary effects	<ul style="list-style-type: none"> deaths → 299 injured → 400 cost of damage → \$19.7 billion hospitals damaged → 1 important place damaged → 'Basilica of St. Benedict' 	<ul style="list-style-type: none"> deaths → 8841 injured → 16,800 cost of damage → \$5.15 billion hospitals damaged → 26 important place damaged → 'Dharahara Tower' 			
secondary effects	<ul style="list-style-type: none"> homeless → 4454 tourism decreased farmers struggled → 90% of farm buildings destroyed. people arrested for looting. 	<ul style="list-style-type: none"> homeless → 1 million education → 50% schools lost avalanche on Mount Everest → 19 died rice seed lost → less food 			
immediate responses	<ul style="list-style-type: none"> 10,000 people given tents rescue team → The Red Cross, 5000 soldiers, 12 helicopters appeal for blood donations 	<ul style="list-style-type: none"> The Red Cross provided tents → for 225,000 people World Health Organisation → distributed medical supplies 			
long-term responses	<ul style="list-style-type: none"> aid from European Union → \$1.3 billion 12 temporary classrooms built earthquake proof homes built 	<ul style="list-style-type: none"> aid from European Union → \$274 million 23 areas to be rebuilt Mount Everest trail re-routed 			

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