

Tectonics

Background:	
1.	The Earth's structure is made up of layers. (A)
2.	The characteristics of these layers fuels tectonic plate theory and the resulting hazards which occur along plate boundaries. (B)
3.	There are four different plate boundaries, each with their own characterises and resulting hazards. (C)
4.	Volcanoes can be found along divergent and convergent boundaries, although the volcanoes found at these boundaries are different. (D)
5.	Earthquakes take place along all of the boundaries, but are often most significant at conservative boundaries. Earthquakes have key features and are measured using the Richter scale. (E)
6.	People continue to live in tectonic areas for a number of reasons. (F)
7.	Some of these reasons relate to how we monitor, protect and plan for such hazards. (G)
8.	However, the impacts of these hazards can still be significant; although they can vary based upon a countries level of development. (H, F)

A.	The layers of the Earth (3)	
Lithosphere (Crust)	The thin outer layer of the earth	
Asthenosphere (Mantle)	Middle layer of the earth, between the crust and the core, approx. 2900km thick.	
Core	The centre and hottest layer of the earth, broken into the inner (solid) and outer core (liquid)	

B.	Theory (4)	
Plate boundaries	The place where plates meet.	
Convection currents	Currents in the Earth's mantle which rise from the Earth's core and are strong enough to move tectonic plates.	
Oceanic crust	The part of the Earth's crust under the oceans, usually 6-8km thick	
Continental crust	The part of the Earth's crust which contains land and is 30-50km thick.	

C.	Different plate boundaries (4)	
Divergent	Where tectonic plates move apart and new land is created.	
Convergent	Where two plates come together, and the oceanic plate is subducted, leading to violent volcanic eruptions.	
Conservative	Where tectonic plates move alongside, or past each other.	
Collision	Where continental plates move towards each other, forming mountains.	

D.	Volcanoes (3)	
Shield volcano	A gently sloping volcano formed by runny lava, usually at a divergent boundary.	
Composite volcano	A steep volcano formed by alternating layers of lava and ash, on convergent boundaries.	
Pyroclastic flow	Torrent of hot ash, rock, gas and steam from a volcano.	

G.	Volcanoes	Earthquakes
Monitoring (2)	1. The shape may change. 2. Increase in gases given off e.g. sulphur dioxide.	1. Irregular tremors measured. 2. Radon gas levels increase as rocks crack.
Protect	Lava diversion channels.	Earthquake proof buildings.
Planning (2)	1. Evacuation. 2. Emergency services trained.	1. Earthquake drills. 2. Emergency services on-call.

H.	Effects of tectonic hazards (2)	
Primary effects	Direct impacts of an event e.g. people killed, injured, or buildings collapse.	
Secondary effects	The indirect impacts of an event, usually occurring in the weeks, hours, months after the event e.g. the outbreak of disease from contaminated water.	

E.	Earthquakes (4)	
Epicentre	The point on the Earth's surface directly above the focus of an earthquake.	
Focus	The source of an earthquake beneath the Earth's surface.	
Seismic waves	Fast waves of energy generated from the focus of an earthquake.	
Richter scale	A scale used to measure the strength of an earthquake.	

F.	Living in the tectonic danger zone	
Volcanoes (4)	1. Jobs in tourism. 2. Geothermal energy created. 3. Ash makes the ground fertile, which is good for farming. 4. Diamonds and gold from previous eruptions can be mined.	
Earthquakes (3)	1. Friends and family live in the area. 2. It has not happened in such a long time, so people take the risk. 3. Employment in the area.	

I.	Examples	
Developing Haiti Port Au Prince (Jan 2010)	1. 318,000 dead. 2. 1.5 million homeless. 3. Cholera outbreak killed 8,000.	
Developed New Zealand Christchurch (Feb 2011)	1. 181 dead. 2. 80% of the city without electricity. 3. The Rugby World Cup was cancelled. 4. Schools closed for 2 weeks.	