

Lesson ideas for geography teachers to share: BBC Bitesize plate tectonics

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AQA GCSE The challenge of natural hazards <https://www.bbc.co.uk/bitesize/examspecs/zy3ptyc>

OCR GCSE Global hazards <https://www.bbc.co.uk/bitesize/examspecs/zpsx2p3>

Eduqas GCSE Hazardous landscapes <https://www.bbc.co.uk/bitesize/examspecs/ztp2qtv>

Natural hazards

1. What is a natural hazard?
Natural hazards are extreme natural events that can cause loss of life, extreme damage to property and disrupt human activities.
2. Hazards are split into Tectonic and Climatic hazards. Which one of the following is the odd one out and why?

Flooding

Tornadoes

Tsunamis

Droughts

Tsunamis. Tsunamis are a tectonic hazard whereas the other three are all climatic hazards. Tropical storms would be an appropriate word instead.

3. How can human behaviour increase the risk of a hazard?
If a hazard strikes an area which has experienced high population growth, rapid urbanisation, marginal land pressure or changes to the natural environment then the human population is more vulnerable.

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Plate margins and plate tectonics

4. The earth's crust is broken into plates. What moves them and how is this energy generated?
The tectonic plates make up the outer shell of planet Earth, called the lithosphere. Under this layer, in the uppermost part of the mantle, churning convection currents of heat act as giant internal conveyor belts of energy. Heat rises and falls in the mantle due to radioactive decay. Almost all geological activity occurs from the interaction between convection currents and the tectonic plates. For example, the rate of spreading along the mid-Atlantic ridge is on average 2.5 centimetres per year.
5. Using the global distribution map for earthquakes and volcanoes, where do you see the most activity around the world? Try to be as precise as possible.
The western edge of the Pacific Ring of Fire has an exceptionally high level of tectonic activity where the Pacific plate meets the Eurasian plate and Philippine plate.
6. What are the associated plate margins for a composite volcano and a shield volcano? Which plate boundary has no volcanoes whatsoever?
Composite volcanoes are found at destructive plate margins, shield volcanoes develop at constructive plate margins and there are no volcanoes at a conservative plate margin.

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Suggested further work

Research why it says flooding can happen ‘anywhere’ but tornadoes ‘can only happen in specific areas’ – where *do* you find tornadoes and why?

Tornadoes are vertical funnels of rapidly spinning air which only form on land. They are created from supercells – large thunderstorms and form when warm, humid air collides with cold, dry air. They are most common in North America, forming around the Gulf of Mexico during the spring from March through to June. This area of the US has the nickname ‘tornado alley’.

Write out a list of differences between continental and oceanic crust.

Oceanic crust is made of basalt rock (silicon, oxygen and magnesium) and is very dense – making it prone to subduction. Older continent rock is made of granite rock (silicon, aluminium and oxygen) and is much less dense but is deeper.

For **OCR students** investigate why Hawaii is classified as a hotspot and how this tectonic occurrence links to an island chain.

For **OCR students** also research what a collision zone is.

For **Eduqas students** you may be more familiar with the terms convergent (destructive) plate boundary and divergent (constructive) plate boundary.