Question(s)

AQA GCSE Geography Revision

Give an example of a Tectonic Hazard

Tectonic Hazards **www.geobytes.org.uk**

Answer(s)

Volcano, earthquake, tsunami

Fold along here

Question(s)

AQA GCSE Geography Revision

What is a natural hazard?

Tectonic Hazards **www.geobytes.org.uk**

Answer(s)

A natural hazard is something that poses potential risk of damage to property and loss of life

Fold along here

Question(s)

AQA GCSE Geography Revision

Define the following terms:

Epicentre

Focus

Magnitude

Tectonic Hazards **www.geobytes.org.uk**

Answer(s)

EPICENTRE – the point on the surface directly above the focus of an earthquake – the most damage often occur here

FOCUS – this is the point underground where the earthquake starts – it is here where the greatest release of energy occurs.

MAGNITUDE – strength of an earthquake, reflecting the amount of energy released.

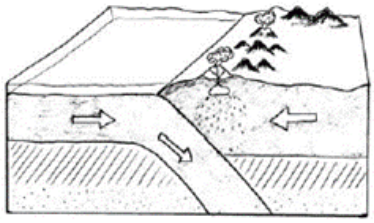
Fold along here

Question(s)

AQA GCSE Geography Revision

What type of boundary is shown in the diagram below?

Describe what happens here.



Tectonic Hazards **www.geobytes.org.uk**

Answer(s)

Oceanic and continental plate move towards each other due to convection currents.

Denser oceanic crust is subducted forming an oceanic trench

Heat from the mantle & friction between plates causes the ocean plate to be destroyed

As the plate melts, magma forms and due to the pressure and the heat is forced to rise to the surface

Magma erupts at the surface as lava, form a volcano

Fold mountains (e.g. Andes) are created due to the impact of collision (earthquakes may occur)

Fold along here

Question(s)

AQA GCSE Geography Revision

Give some reasons why people remain in hazard vulnerable areas

Tectonic Hazards **www.geobytes.org.uk**

Answer(s)

1. **Can't move** (lack of knowledge, language barrier, expense)
2. **Don't want to go** (e.g. optimistic it wont happen)
3. **Worth staying** – jobs, resources
4. **Can't accurately predict hazards** – location, magnitude, timing

Fold along here

Question(s)

AQA GCSE Geography Revision

Astrea Academy Trust

Give three differences between oceanic and continental crust

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

- Oceanic crust is thinner
- Oceanic crust is denser than continental crust
- Oceanic crust is constantly renewed and destroyed (continental is permanent and cannot be destroyed)
- Oceanic crust is mainly basalt whereas continental is granite

Fold along here

Question(s)

AQA GCSE Geography Revision

Astrea Academy Trust

Give a named example of:

- Constructive Boundary
- Destructive Boundary
- Collision Boundary
- Conservative Plate Boundary

Tectonic Hazards

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Answer(s)

- **Constructive Plate Boundary** e.g. Mid-Atlantic Ridge (Eurasian and North American plate)
- **Destructive Plate** – South American and Nazca plate
- **Collision Boundary –** Indian and Eurasian Plate (The Himalayas)
- **Conservative Plate Boundary** – San Andreas Fault – North American and Pacific Plate

Fold along here

Question(s)

AQA GCSE Geography Revision

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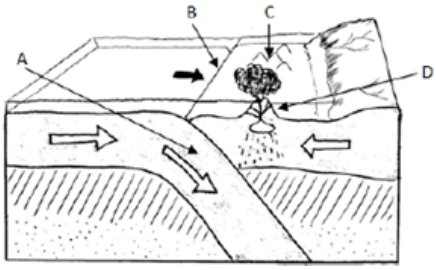
Name the features at A, B, C and D



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Answer(s)

A – subduction zone
B – oceanic trench
C – island arc
D - volcano

Fold along here

Question(s)

AQA GCSE Geography Revision

Astrea Academy Trust

Describe the global distribution of earthquakes and volcanoes

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

Both earthquakes & volcanoes **occur in long narrow bands** – often following the edge of continents (e.g. W Coast of S America)

Largest bands of **volcanoes** are found along the **Pacific Ring of Fire** (around the Pacific Ocean)

Earthquakes and Volcanoes are also found together in **bands in the middle of oceans** (e.g. Mid-Atlantic Ridge)

NOT all follow the same pattern – some volcanoes are found in isolated clusters e.g. **Hawaiian Islands** – middle of Pacific Plate.

Fold along here

Question(s)

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At which plate boundary will oceanic trenches, volcanoes and fold mountains be found?

Tectonic Hazards

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Answer(s)

Destructive Boundary (Oceanic-Continental)

i.e. where subduction of oceanic crust creates oceanic trench, and forms volcanoes and the collision between the plates creates fold mountains.

Fold along here

Question(s)

AQA GCSE Geography Revision

Describe the formation of Fold Mountains

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

Fold mountains form at **oceanic –continental plate boundaries or continental-continental plate boundaries**

At these boundaries as the two plates meet, the force of the collision causes **folding** and **faulting** to occur

This results in uplift of rock and sediment squeezed during the collision

The result is **fold mountains** such as the **Himalayas.**

Fold along here

Question(s)

AQA GCSE Geography Revision

What is a hotspot?

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

A hotspot is a plume of hot molten material rising from the mantle. This magma is lighter than the surroundings and rises – erupting at the surface where the crust is thin, creating a volcano (and eventually a volcanic island). They are fixed within the mantle and as the crust moves over the top a chain of volcanic islands is left behind (e.g. Hawaii).

Fold along here

Question(s)

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What are the causes of plate movements?

Tectonic Hazards

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Answer(s)

Convection currents and slab pull and ridge push.

(The dominant cause is believed to be slab pull)

Fold along here

Question(s)

AQA GCSE Geography Revision

Name the features found at an oceanic-oceanic convergence zones

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

Oceanic Trench
Subduction Zone
Volcanic Islands
Island Arcs

Fold along here

Question(s)

AQA GCSE Geography Revision

Describe an oceanic trench

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

Long, deep and narrow features form the deepest part of an ocean floor, marking the point where one plate is subducted under another.

Fold along here

Question(s)

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Name an example of:

- Fold Mountains
- Oceanic Ridge
- Islands formed by hotspots
- Conservative Boundary

Tectonic Hazards www.geobytes.org.uk

Answer(s)

Fold Mountains – e.g. Himalayas / Andes
Oceanic Ridge – Mid-Atlantic Ridge
Islands formed by hotspots – Hawaii
Conservative Boundary – San Andreas Fault

Fold along here

Question(s)

AQA GCSE Geography Revision

For the Japan 2011 earthquake, what was the..

- Date of the earthquake
- Magnitude
- Depth of Focus
- Boundary Type

Tectonic Hazards www.geobytes.org.uk

Answer(s)

Date of the earthquake – 11th March 2011
Magnitude – 9.0
Depth of Focus – 30km
Boundary Type – **Destructive Boundary (Pacific and North American)**

Fold along here

Question(s)

AQA GCSE Geography Revision

For the Nepal 2015 earthquake, what was the..

- Date of the earthquake
- Magnitude
- Depth of Focus
- Boundary Type

Tectonic Hazards www.geobytes.org.uk

Answer(s)

Date of the earthquake – 25th April
Magnitude – 7.9
Depth of Focus – 15km
Boundary Type – **Collision Boundary (Eurasian and Indian plates)**

Fold along here

Question(s)

AQA GCSE Geography Revision

How can educating people help to save lives in a natural disaster such as an earthquake?

Tectonic Hazards www.geobytes.org.uk

Answer(s)

- Increase awareness of what to do in the event of an earthquake (e.g. through disaster drill days) helping to save lives
- Educate people about the importance of being prepared – e.g. survival kit – can help save lives in the event of a quake – e.g. food/water if trapped for several days and basic first aid supplies

Fold along here

Question(s)

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Describe examples of what can be done to help limit the damage caused by earthquakes to buildings.

Tectonic Hazards www.geobytes.org.uk

Answer(s)

- Foundations sunk into bedrock
- Rubber shock absorbers between foundations and building (to absorb energy waves)
- Computer controlled counter-weights on roof
- Automatic shut off switches for electricity and gas
- Interlocking steel frames (sway during earth movements)
- Transamerica Building (San Francisco) – triangular building wide stable base and steel frame.

Fold along here

Question(s)

AQA GCSE Geography Revision

Give examples of how we can monitor and predict volcanoes

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

- **Satellites** (GPS) and tilt meters monitor ground deformation as magma rises (changes in the volcano's surface)
- **Seismometers** – measure small earthquakes / tremors (can occur as rising magma can fracture rock)
- **Thermal heat sensors** – detect changes in the temperature of the volcanoes surface
- **Gas-trapping bottles and spectrometers** – measuring sulphur gases
- **Measuring water temperature** of stream/rivers to see if it has increased.

Fold along here

Question(s)

AQA GCSE Geography Revision

Describe efforts made to reduce the impacts of volcanic eruptions on people.

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

- **explosives** to divert lava flow from villages (e.g. Mt Etna – 1996)
- **spraying large volumes of water on lava flow** (cool and solidify advancing lava flows – successful in Heimaey (Iceland) – 1973 to save the port from the lava flow
- **earth walls / concrete barriers** to deflect lava flows (e.g. Mauna Loa – Hawaii – used to protect observatory)
- **digging ditches to divert lava flow paths** (e.g. Mount Etna 1991-1993)

Fold along here

Question(s)

AQA GCSE Geography Revision

Give 4 examples of primary effects of the Japan 2011 earthquake

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

- 15,845 killed
- 400km stretch of coastline dropped by 0.6m
- 4.4 million households in NE Japan left without electricity
- Buildings collapsed due to liquefaction
- Nearly 4,000 roads damaged

Fold along here

Question(s)

AQA GCSE Geography Revision

Give four examples of secondary effects of the Japan 2011 earthquake.

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

- Estimated overall impact of US$300 billion
- A tsunami hit with waves up to 30m high – travelled 10km inland
- Massive coastal flooding destroyed crops / seawater contimanted soils
- Fukishima nuclear reactor went into meltdown when supplies of cold water blocked by tsunamis debris
- Shipping disrupted due to closure of ports.

Fold along here

Question(s)

AQA GCSE Geography Revision

Give four examples of secondary effects of the Nepal 2015 earthquake.

Tectonic Hazards

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Answer(s)

- Avalanches on Mount Everest killed 19 people – the greatest loss of life on a mountain in a single incident
- Tourist industry saw a decrease in employment and income (usually it makes up about 9% of Nepal's GDP)
- Food shortages due to rice seed being lost in homes ruined by the rubble
- Relief efforts made difficult by landslides and avalanches blocking the roads.

Fold along here

Question(s)

AQA GCSE Geography Revision

Give 4 examples of primary effects of the Nepal 2015 earthquake

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

- 9,100 dead and over 16,800 injured
- 1 million made homeless
- 50% of schools destroyed and 25 hospitals
- Reduced supply of water, food and electricity
- Historic buildings, including temples in Kathmandu destroyed – including the UNESCO world heritage Dharahara Tower.

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Question(s)

AQA GCSE Geography Revision

Give 2 examples of long term responses to the Japan 2011 earthquake.

Tectonic Hazards

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Answer(s)

- Japan's food exports limited due to radiation fears
- Japan government approved budget of £190 billion to attract investment to reconstruct the economy
- Long term challenge – to remove radioactive contamination
- Priority given to repair and re-opening of transport links and by Nov 2011 expressway, railway and airport was restored.

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Question(s)

AQA GCSE Geography Revision

Give two examples of short term responses to the 2015 Nepal earthquake

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

- Requested international help – search and rescue teams came from places like UK / China / India (including medical and water supplies)
- Helicopters rescued many on Mount Evert
- Half a million tents required for the homeless (many provided by the Red Cross)
- UN / WHO distributed medical supplies to reduce the spread of waterborne disease

Fold along here

Question(s)

AQA GCSE Geography Revision

Give two examples of long term responses to the Nepal 2015 earthquake

Tectonic Hazards

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Answer(s)

- Stricter controls on building codes
- June 2015 – Nepal hosted international conference to discuss reconstruction / seek financial / technical support
- Recovery needs of US $6.8 billion – a third of the economy
- Need to boost tourism – some sites reopened by August and new routes established on Everest
- UN FAO (Food and Agriculture organisation) started a recovery phase 6 months later teaching farmers how to maintain / re-

Fold along here

Question(s)

AQA GCSE Geography Revision

Give two examples of short term responses to the Japan 2011 earthquake

Tectonic Hazards

www.geobytes.org.uk

Answer(s)

- Aircraft deployed immediately to survey devastation / identify priority areas
- JSDF (Japan Self Defence Force) moved in and within 2-days had cleared debris enabling emergency goods to be delivered twice a day
- Over 116 countries / 28 international organisations responded
- A&T maintained wireless / telephone networks for free
- 140,000 evacuated 20km radius around Fukishima

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Question(s)

AQA GCSE Geography Revision

Why to people continue to live in areas prone to earthquakes?

Tectonic Hazards www.geobytes.org.uk

Answer(s)

- As they don't happen often some don't see them as a great threat (particularly if they have never experienced one)
- Better building design means people feel less at risk from earthquakes
- Better monitoring of earthquakes and volcanoes make people feel safe
- Many live in poverty / can't afford to move
- Some might not be aware of the risk they are under.

Fold along here

Question(s)

AQA GCSE Geography Revision

Why to people continue to live in areas prone to earthquakes?

Tectonic Hazards www.geobytes.org.uk

Answer(s)

Fertile soils (due to weathering of ash) means good farming areas (e.g. citrus fruits / olives – Mt Etna and Rice – Indonesia)

Geothermal Energy – cheap / renewable energy – heat from earth used to create steam to turn turbines (e.g. Iceland – GE creates 25% of the electricity and provides heat / hot water for 90% of homes and buildings)

Tourism – these areas have dramatic landscape attracting tourists (provides jobs / multiplier effect – e.g. Iceland (5% of GDP from tourism)

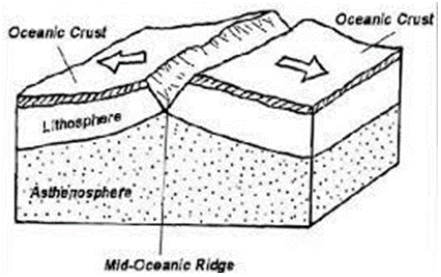
Mining – precious minerals are found / can be mined – e.g. copper / gold and sulpur (Kwah Ijen mine – Indonesia)

Fold along here

Question(s)

AQA GCSE Geography Revision

What type of boundary is shown here?



Tectonic Hazards www.geobytes.org.uk

Answer(s)

Constructive Boundary

Fold along here

Question(s)

AQA GCSE Geography Revision

At what type of plate boundary do the plates move past each other (with land neither being created nor destroyed).

Tectonic Hazards www.geobytes.org.uk

Answer(s)

Conservative plate boundary (also known as passive margin / transform fault)

Fold along here

Question(s)

AQA GCSE Geography Revision

Give 3 possible hazards associated with a volcanic eruption.

Tectonic Hazards www.geobytes.org.uk

Answer(s)

Lava flows
Pyroclastic Flows
Volcanic Bombs
Ash
Poisonous Gases
Lahar (volcanic mudflow)

Fold along here