

Hazards: Volcanic eruption impacts and human response 3.1.5.3

ANSWERS

Q1	<i>Which of these hazards is the 'Odd one out' and why?</i>	
A	Lahars	Odd one out – it is a secondary hazard, the rest are primary hazards
B	Volcanic bombs	
C	Pyroclastic flows	
D	Ash falls	
E	Volcanic gases	

Q2	<i>Of these pairs, which is 'primary effects' and which are 'secondary effects' in relation to volcanic eruptions</i>		
		PRIMARY	SECONDARY
A	Lava flowing through villages	✓	
B	Ash killing crops over 1000 km away	✓	
C	Lahars knocking down bridges		✓
D	Tourism affected as planes could not fly		✓
E	Volcanic bombs burning holes in roofs	✓	
F	Eruption landslides down the flanks		✓

Q3	<i>How can each of these forms of management reduce the impact of volcanic hazards?</i>	
Spraying seawater on lava flows: Slows the speed of lava by cooling it and this can prevent it destroying property		Using explosives on the flanks of a volcano: Explosives can create a diversion channel to small lava flows
Build houses with steep roofs: Steep roofs will allow ash to slide off rather than collapse		Build shelters near the crater: People on the slopes can seek shelter from ash or pyroclastic flows, although they can be destroyed in large blasts.
Evacuation: The most hazardous place to be when a volcano erupts is near to it. Evacuation moves people away from the hazard.		Hazard mapping: Mapping can allow people to plan the less hazardous place to build property close to a volcano

Q4	<i>Describe as many impacts of the Eyjafjallajökull eruption</i>
Eruption: <ul style="list-style-type: none"> Explosive lava eruptions mixed with water mixed with the silica to form fine glassy ash, this began to rise much higher and travel south over the rest of Europe Just under a thousand local people were evacuated out of the danger zone. 	

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<p>Ash (local):</p> <ul style="list-style-type: none"> • The growing season in Iceland is short, so a whole year's worth of crops were damaged resulting in food shortages, particularly of fodder crops to see animals through winter. • Homes directly to the south of the volcano were destroyed.
<p>Meltwater:</p> <ul style="list-style-type: none"> • Communication and transport infrastructure was disrupted by huge meltwater floods or glacial burst (jökulhlaup), this limited access for local people travelling to the capital Reykjavik and cost the country £12 million to reconstruct.
<p>Travel:</p> <ul style="list-style-type: none"> • Tourism was affected as planes could not fly. • 48 per cent of all air traffic was grounded for eight days across Europe as the ash cloud was thought to be unsafe for the aircraft. Total losses were in the region of £80 million.
<p>Economy:</p> <ul style="list-style-type: none"> • Following 'just-in-time' inventory strategy, many industries were affected by a lack of imported parts and raw materials, this included Nissan in the UK and Apple in Japan. Nissan halted production of 2,000 vehicles in the UK. • Fresh produce could not be imported to northern Europe, this affected supermarkets and producers worldwide. Cut flower, fruit and vegetable producers from Kenya and other African nations were particularly affected as their economy relies on international trade. Kenya is reported to have destroyed 3,000 tonnes of flowers that could not be transported to the UK. • Residents living under the Heathrow Airport flight path enjoyed the peace.

Q5	<p><i>Which of these terms would you match with which description of volcanic hazard management? Use one of them twice.</i></p>		
	<i>Prediction</i>	<i>Protection</i>	<i>Prevention</i>
<p>Term: Prediction</p> <p>When the seismometer picked up ground tremors, the automated system sent alerts out to the public on every television and radio channel, giving people time to evacuate.</p>		<p>Term: Prediction</p> <p>Hazard mapping of earlier lava flows allowed the local government to decide where the best location for a new village should be built.</p>	
<p>Term: Prevention</p> <p>Desperate to stop the lava flowing, the local fire department started spraying seawater onto the lava flow to slow it down.</p>		<p>Term: Protection</p> <p>When the family renewed their house insurance, they checked the small print to ensure they were covered in the case of a volcanic eruption.</p>	