

## YEAR 8 GEOGRAPHY – CYCLE 1 – VOLCANOES

### BOX 1: NATURAL HAZARDS

natural hazard	<b>natural event which has potential to cause damage, destruction, death</b>
natural disaster	<b>natural event which has caused damage, destruction and death</b>
hazard risk	the <b>probability</b> (chance) that a <b>natural hazard</b> may <b>take place</b> → <b>risk increases if</b> → <b>high population density, low development, climate change</b>
tectonic hazards	e.g. <b>earthquakes</b> and <b>volcanoes</b>
weather hazards	e.g. <b>tropical storms</b> (hurricane, cyclone, typhoon), <b>drought, flood</b>

### BOX 2: PLATE TECTONICS

inner core	<b>solid</b> → <b>iron and nickel</b> → <b>5000° C</b> → under high pressure
outer core	<b>liquid</b> → <b>iron and nickel</b>
mantle	<b>semi-molten</b> (melted) <b>rock</b> → <b>3800° C</b>
crust	<b>surface layer</b> of Earth → two types → <b>oceanic</b> (thin), <b>continental</b> (thick)
tectonic plate	<b>section/segment</b> of crust
plate margin	where <b>plates meet</b> (plate boundary)
convection	<b>convection currents</b> → <b>magma heated</b> by core → <b>rises</b> → <b>moves plates</b>
conservative	<b>conservative margin</b> → plates move <b>side by side</b>
constructive	<b>constructive margin</b> → plates move <b>away</b> from each other
destructive	<b>destructive margin</b> → plates move <b>towards</b> each other
Alfred Wegner	<b>1912</b> → he proposed the <b>theory of plate tectonics</b> → <b>Continental Drift</b>

### BOX 3: VOLCANOES

molten	<b>hot, liquid</b> and <b>melted</b> e.g. <b>lava</b>
lava	<b>molten rock</b> → flowing <b>over</b> the <b>ground</b>
magma	<b>molten rock</b> → flowing <b>under</b> the <b>ground</b>
crater	<b>volcanic crater</b> → <b>hole</b> left in <b>top of volcano</b> after <b>eruption</b>
vent	<b>volcano vent</b> → where the <b>lava flows out from</b>
magma chamber	<b>pool of molten rock under volcano</b> → under <b>huge pressure</b>
VEI	<b>Volcanic Explosivity Index</b> → shows <b>magnitude</b> (strength), <b>1=low, 8=high</b>
composite	<b>composite volcanoes</b> → <b>cone shaped</b> → occur at <b>destructive margins</b>
shield	<b>shield volcanoes</b> → <b>flat like shield</b> → occur at <b>constructive margins</b>
high viscosity	<b>very thick lava</b> → <b>violent</b> eruptions → e.g. <b>composite</b> volcanoes
low viscosity	<b>very thin, runny lava</b> → <b>less violent</b> eruptions → e.g. <b>shield</b> volcanoes
active	<b>active</b> volcanoes → <b>erupt frequently</b> (very often)
dormant	<b>dormant</b> volcanoes → have <b>not erupted</b> for a <b>long time</b>
extinct	<b>extinct</b> volcanoes → will <b>not erupt ever again</b>
pyroclastic flow	<b>hot gas</b> from volcano ( <b>1000° C</b> ) → <b>fast moving along ground</b> ( <b>400mph</b> )
ash	volcanic <b>ash</b> → <b>powdered rock</b> → <b>very heavy</b> in <b>large amounts</b>
tephra	<b>lumps of rock</b> → <b>blasted out of volcano</b> like missiles

### BOX 4: IMPACTS AND RESPONSES KEYWORDS

effects	<b>primary effects</b> → <b>immediate impacts</b> of event e.g. <b>deaths</b> <b>secondary effects</b> → <b>impacts of event into future</b> e.g. <b>loss of education</b>
responses	<b>immediate responses</b> → how people <b>help</b> → <b>straight away</b> (same day) <b>long term responses</b> → how people <b>help</b> → in <b>months afterwards</b>

### BOX 5: CASE STUDY → MOUNT VESUVIUS (POMPEII, ITALY)

date	<b>79 AD</b> → nearly <b>2000 years ago</b>
location	<b>Pompeii</b> → <b>Italy, Europe</b>
population	about <b>12,000 people</b> lived in Pompeii at this time
plate tectonics	<b>African plate</b> → <b>subducted under</b> (pushed under) <b>Eurasian plate</b>
volcano type	<b>Mount Vesuvius</b> → <b>composite volcano</b> → <b>destructive plate margin</b>
volcanic hazards	<ul style="list-style-type: none"> <li><b>ash cloud</b> → <b>32 km high</b> into atmosphere</li> <li><b>1.5 million tonnes</b> of ash and <b>tephra</b> were <b>ejected every second</b></li> <li>at least <b>three pyroclastic flows</b> (<b>400 mph, 1000° C</b>)</li> </ul>
primary effects	<ul style="list-style-type: none"> <li><b>death and injury</b> → about <b>2000 people</b> died in Pompeii</li> <li><b>destruction</b> → <b>heavy ash collected on roof tops</b> → <b>roofs collapsed</b></li> <li><b>cities Pompeii and Herculaneum</b> hidden under ash → <b>2000 years</b></li> <li><b>many animals killed</b> e.g. <b>bodies of dogs and horses</b> discovered</li> </ul>
secondary effects	<ul style="list-style-type: none"> <li><b>10,000 local people displaced</b> → made <b>homeless</b></li> <li><b>livelihoods and businesses destroyed</b> → local people <b>lost jobs</b></li> <li><b>looting</b> → people returned to steal from <b>abandoned houses</b></li> <li><b>fewer tourists</b> visited area afterwards → <b>fearful of another eruption</b></li> <li><b>some enslaved people escaped to freedom</b> → <b>positive effect</b></li> </ul>
immediate responses	<ul style="list-style-type: none"> <li><b>10,000 people</b> managed to <b>escape</b> → <b>lives saved</b></li> <li><b>Roman Navy</b> sent <b>warships</b> to <b>evacuate people</b></li> </ul>
long term responses	<ul style="list-style-type: none"> <li>people who escaped <b>rebuilt houses</b> in <b>other areas</b> of country</li> <li><b>Romans</b> → <b>studied volcanoes more</b> → wanted to <b>save lives in future</b></li> </ul>

### BOX 6: SUPER VOLCANOES

super volcano	<b>very explosive</b> → <b>100 km wide</b> → <b>VEI 8</b> → <b>1000 times more ash</b>
caldera	<b>super volcanoes</b> create a <b>caldera</b> → a <b>sunken depression</b> in <b>ground</b>
case study	<b>Yellowstone Caldera, Wyoming, USA</b> → <b>super volcano</b>

### BOX 7: REDUCING IMPACTS OF VOLCANIC ERUPTIONS IN THE FUTURE

monitoring volcanoes to predict eruptions	<ul style="list-style-type: none"> <li>using <b>tiltmeters</b> → to <b>monitor changes</b> in <b>volcano shape</b> → to <b>predict</b> when <b>eruption</b> will happen → so people can <b>evacuate</b></li> <li>using <b>spider robots</b> → to <b>monitor gases</b> escaping from volcano → to <b>predict</b> when <b>eruption</b> will happen → so people can <b>evacuate</b></li> </ul>
planning for eruptions	<ul style="list-style-type: none"> <li>towns can practise <b>evacuation drills</b></li> <li><b>loud warning sirens</b> (alarms) → to alert people about an eruption</li> <li>people can make a <b>survival kit</b> e.g. <b>medicines, water, food</b></li> </ul>