YEAR 9 GEOGRAPHY – CYCLE 2 – NATURAL HAZARDS AND TECTONIC THEORY

BOX 1: KEYWORDS PART 1	
natural hazard	**natural event** (e.g. earthquake, volcanic eruption, tropical storm) which **has potential** to **cause damage**, **destruction**, **death**
earthquake	a **sudden violent movement** within the Earth's crust
tectonic hazards	caused by **movement** of **tectonic plates** (e.g. volcanoes and earthquakes)
weather hazards	e.g. **tropical storms** (hurricanes, cyclones, typhoons), **drought**, **flood**
hazard risk	the **probability** or **chance** that a **natural hazard** may **occur**
molten	**hot**, **liquid** and **melted** e.g. lava
magma	**molten rock** → flowing **under** the **ground**
lava	**molten rock** → flowing **over** the **ground**

BOX 2: FACTORS AFFECTING HAZARD RISK	
population density	**high population density** → **more people** in area → **more people affected**
development level	**low development**→ **weak buildings**, less medical care→ **more deaths**
climate change	**higher temperatures** → **more tropical storms** → **more people affected**

BOX 3: LAYERS OF THE EARTH	
inner core	**solid** → **iron** and **nickel** → **5000° C** → under high pressure
outer core	**liquid** → **iron** and **nickel**
mantle	**molten rock** → **3800° C**
crust	**surface layer** of **Earth** → two types → **oceanic** (thin), **continental** (thick)

BOX 4: TYPES OF CRUST	
continental crust	**thick** (20-200 km) → **less dense** → **e.g. granite** → **old** (3.8 billion years)
oceanic crust	**thin** (5-10 km) → **more dense** → **e.g. basalt** → **young** (200 million years)

BOX 5: TECTONIC PLATE MARGINS	
tectonic plate	**section/segment** of **crust**
plate margins	where **plates meet** (plate boundary)
constructive margin	two plates move **away** from each other → **rising magma** fills the gap
destructive margin	two plates move **towards** each other → **oceanic crust** is **subducted** (sinks underneath) under the **continental crust**
conservative margin	two tectonic plates **slide past** each other

BOX 6: WHY DO TECTONIC PLATES MOVE?	
convection	**convection currents** → **magma heated** by core → **rises** → **moves plates**
ridge push	**molten magma rises** in the **gap** between the **plates** at **constructive plate margins**→ **cools** to **form new land**→ land **pushes** the **plates** further **apart**
slab pull	**oceanic crust subducted** at **destructive plate margins**→ **gravity** causes plate to **sink**→ **pulls** the rest of **plate along**→ causes entire **plate** to **move**

BOX 7: KEYWORDS PART 2	
VEI	**Volcanic Explosivity Index**→ shows **magnitude** (strength) **1=low, 8=high**
composite	**composite volcanoes** → **cone** shaped → occur at **destructive margins**
shield	**shield volcanoes** → **flat** like a shield → occur at **constructive margins**
high viscosity	**very thick lava** → **violent** eruptions → e.g. **composite** volcanoes
low viscosity	**very thin, runny lava** → **less violent** eruptions → e.g. **shield** volcanoes
earthquake focus	**point under** the **ground** → where an **earthquake starts**
epicenter	**point on** the **Earth's surface** → **directly above** the **earthquake focus**
Richter Scale	**used** to **decide** the **magnitude** (power/strength) of **earthquakes**
seismic wave	**waves** of **energy that travel through the Earth's layers** → **earthquakes**
seismometer	**equipment used** to **measure** and **record earthquakes**

BOX 8: TECTONIC ACTIVITY → AT CONSTRUCTIVE PLATE MARGINS	
plate movement	two plates move **away** from each other
earthquakes	earthquakes **sometimes** occur at **constructive margins** → as two **plates pushed apart** → **pressure builds** up within the **rocks** → **pressure released** as **vibrations** → which can cause **small earthquakes**
volcano formation	as the two plates **move away** from each other → **magma rises** to **fill** the **gap** → forms **volcano**
volcano type	**shield** volcanoes → **wide**, **flat**, **shield shaped** (formed from layers of lava)
Volcanic Explosivity Index	**low VEI** → **not very violent** eruptions → **thin runny lava** (**low viscosity**) → **lava spreads** over **large distances**
volcano example	**Mount Nyiragongo** → Democratic Republic of the Congo (Africa)

BOX 9: TECTONIC ACTIVITY → AT DESTRUCTIVE PLATE MARGINS	
plate movement	two plates move **towards** each other → **oceanic crust** is **subducted** (sinks underneath) under the **continental crust**
earthquakes	**pressure** and **friction builds** between the plates (as the oceanic plate is subducted) → eventually **plates slip suddenly** to new position → **sudden movement** causes **vibrations** (**seismic waves**) → felt as **earthquake**
volcano formation	**oceanic plate subducted** underneath **continental plate** → immense **heat** and **pressure** → **oceanic plate melts** as it sinks and turns into **magma** → **magma rises** to surface **through cracks** in **continental plate** → forms **volcano** on the surface
volcano type	**composite** volcanoes → **high, steep**, **cone shaped** (formed from layers of ash)
Volcanic Explosivity Index	**high VEI** → **extremely violent** eruptions → **thick lava** (**high viscosity**) → **lava explodes** into clouds of **thick ash**
volcano example	**Mount Sakurajima** → Japan (Asia)

BOX 10: TECTONIC ACTIVITY → AT CONSERVATIVE PLATE MARGINS	
plate movement	two tectonic plates **slide past** each other
earthquakes	**pressure** and **friction builds** between the plates as they **slide past each other** → eventually the **plates slip suddenly** to a new position → sudden movement causes **vibrations** (**seismic waves**) → felt as an **earthquake**
volcanoes	**no volcanic activity** at conservative plate margins (no rising magma)

Exam Paper 1 (Living with the Physical Environment) Section A (The Challenge of Natural Hazards) Topic (Natural Hazards and Tectonic Theory)