St Andrew's Secondary School
Geography Unit

Topic: Living with Tectonic Hazards Part 1

Name: _____ **( )** **Class:**_____ **Date:** _____

1a) Compare the differences between tectonic hazards and climate-related hazards. Give an example of the different hazards. [3]

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1b) Study Fig 1 and identify the different layers of the earth. [3]

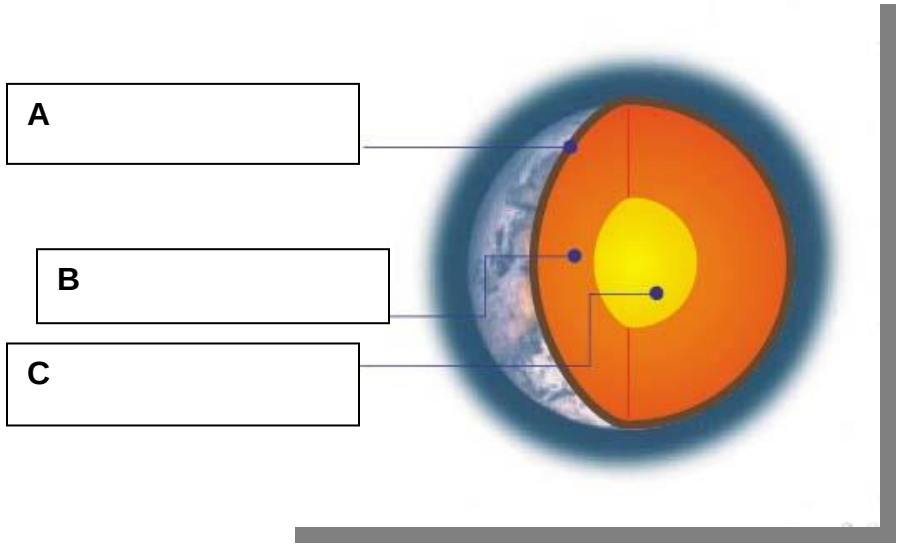

Fig. 1 - Earth

2) Fill in the blanks with the correct answers.

Core:

- Composed mostly of _____ and _____
- Divided into inner core + outer core
  1. Inner core is _____ km thick and is a _____ layer
  2. Outer core is 2,100 km thick and is a _____ layer
- Temperature between _____^{0}C and _____^{0}C

Mantle:

- Mostly solid rock (flows under high temperature and pressure) and is about _____ km thick
- Divided into upper mantle + lower mantle

  Upper mantle consist of aa layer of solid rock and the asthenosphere
- Temperature between _____ ^{0}C and _____ ^{0}C

Crust:

- Thin _____ layer consists of both _____ and continental crusts
- Oceanic crust is found beneath _____
  - About _____ g/cm^3, _____ basaltic rocks, thinner _____ to _____ km
- Continental crust is found beneath the continents
  - About _____ g/cm^3, _____ granite rocks, thicker
  - Thicker at
    - 35 – 40 km under _____ interior
    - _____ to _____ km under mountain ranges
    - Up to _____ km under parts of Himalayan Mountains

Tectonic plates

- A tectonic plate is made up of the _____ (i.e. crust + uppermost mantle).
- The earth's crust is broken into several pieces of tectonic plates.
- These plates move in relation to one another.
- Tectonic plates can be made up of:
  - _____ crust
  - _____ crust or
  - a combination of both

Oceanic Crust	**Continental Crust**
• Located beneath _____ ocean • Very thin — between ___ and ___ km • Denser e.g. _____	• Located beneath _____ and under _____ seas • Very thick - between ____ and _____ km • Less dense e.g. _____

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3. Study Fig. 2 which shows the convection currents found in the interior of the earth. Annotate the processes in Fig. 2. [3]

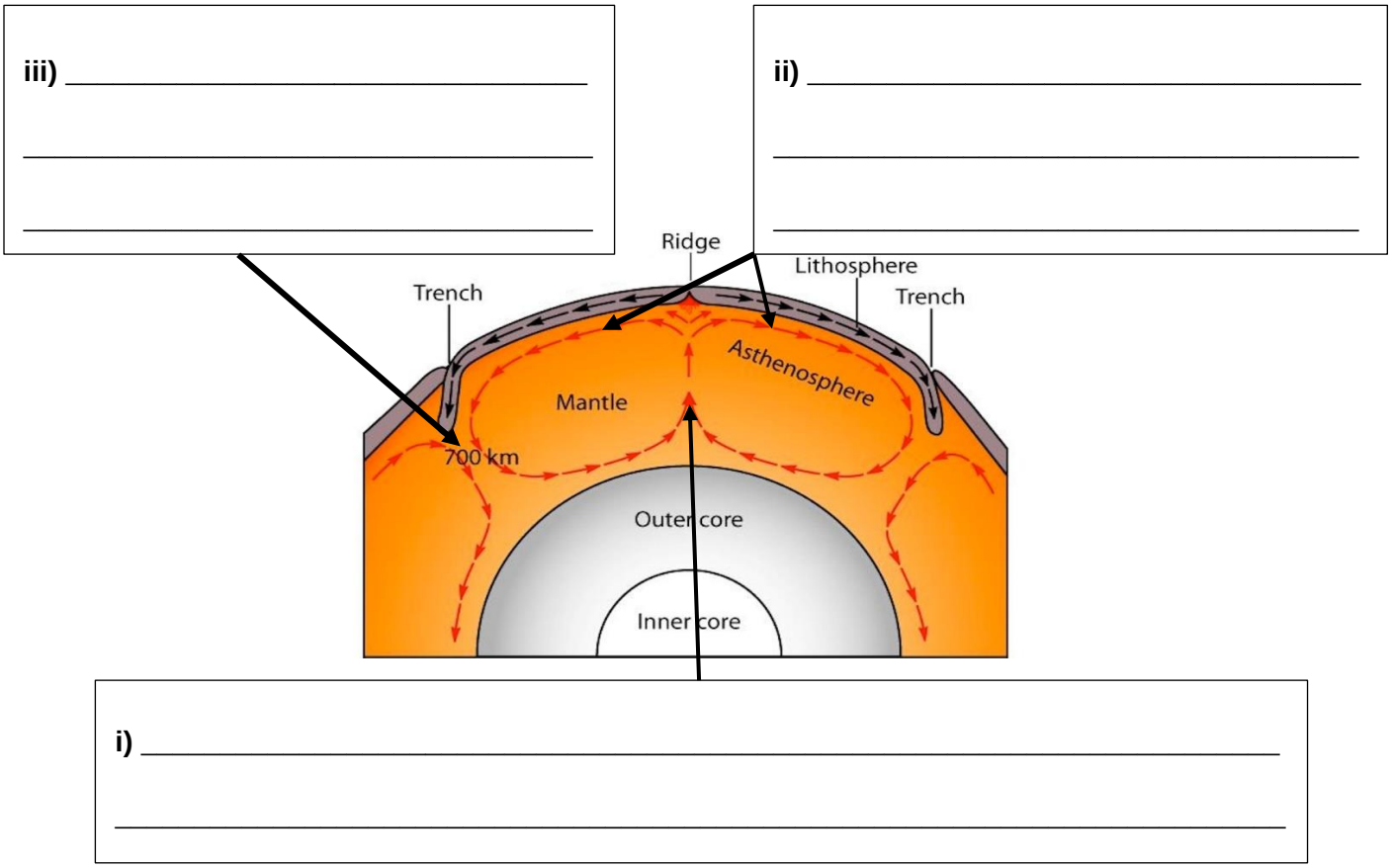

Fig. 2

4. Study Fig. 3 which shows the Earth's crust.

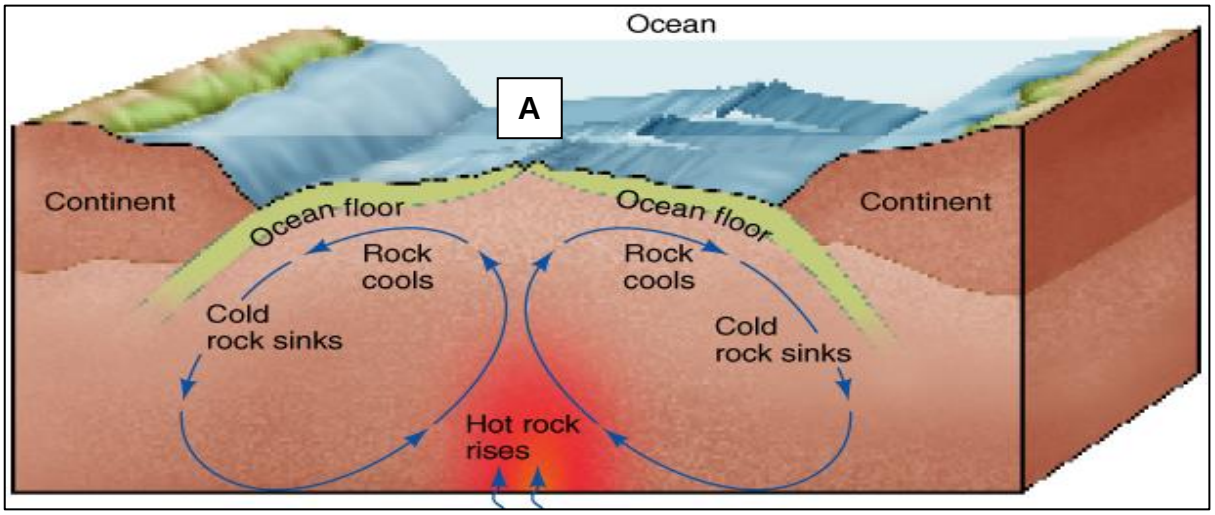

Fig. 3

(i) With reference to Fig. 3, explain how and why plates move. [5]

(ii) Refer to Fig. 3, explain with example, how the landforms are formed at the plate boundary marked **A**. [4]

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5. Study Fig. 4, which shows a dagram of a rift valley. Explain how it is formed. [4]

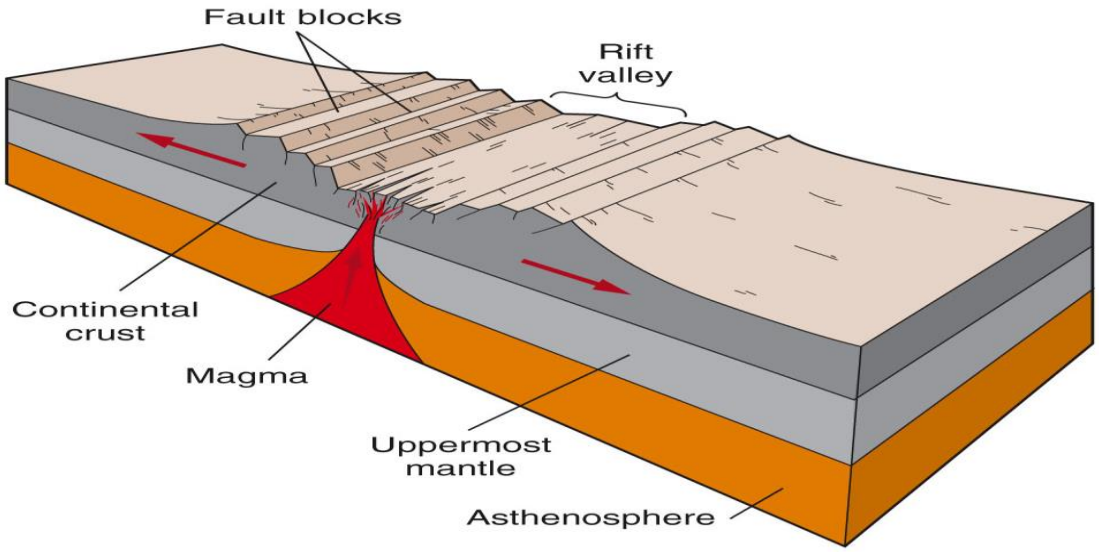

Fig. 4

6. Study Fig. 5, which shows oceanic-oceanic plate convergence below.

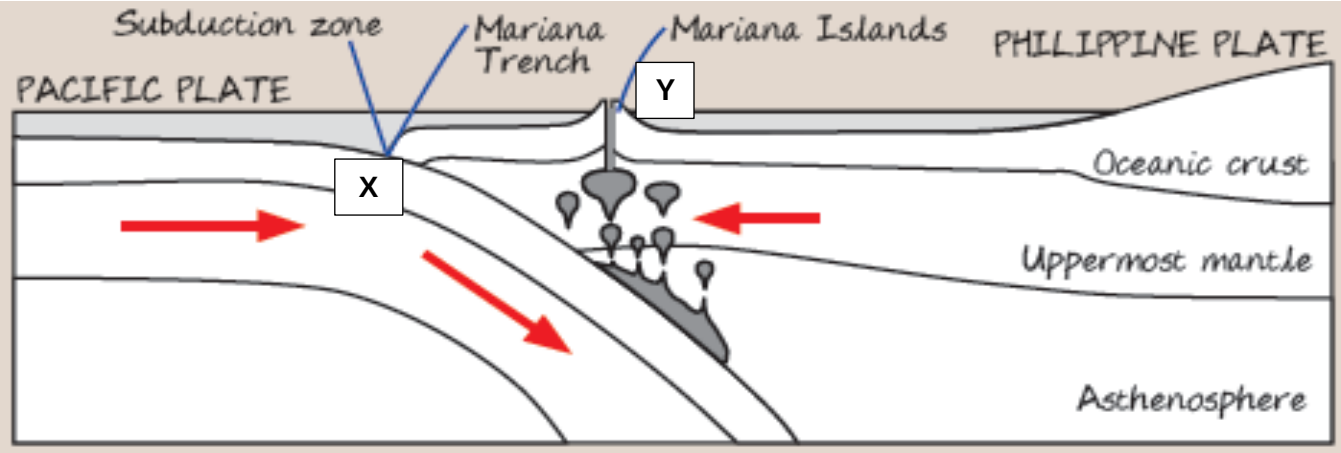

Fig. 5

Identify the features X and Y and explain the processes leading to their formation. [6]

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7. Study Figs. 6 and 7, which shows mountain range formed at a convergent plate boundary.

Fig. 6

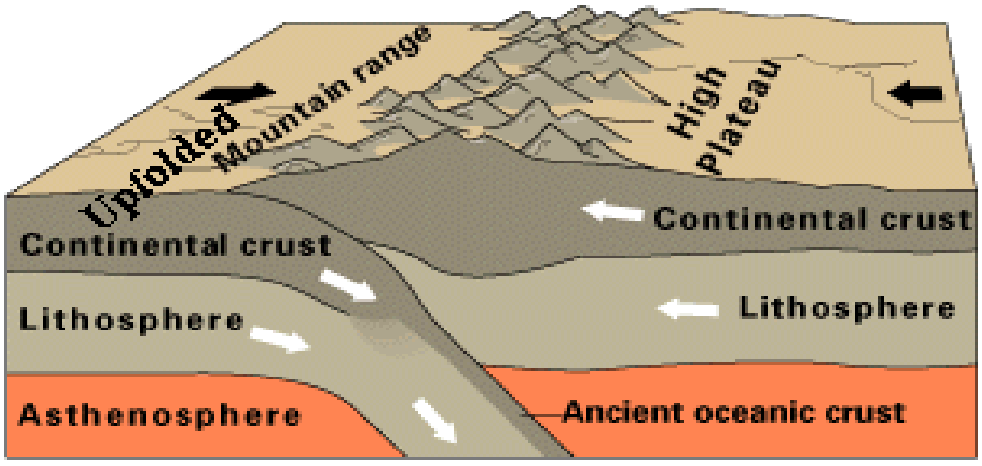

Fig. 7

i) Describe the landform seen in Fig. 6. [3]

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ii) Refer to Figs. 6 and 7, explain how the landform may have formed. [5]

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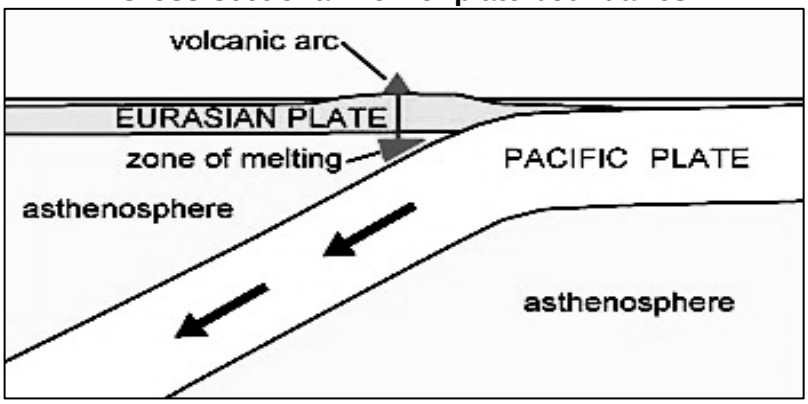
8. Study Figs. 8 and 9, which show information about various plate tectonic features in Japan.

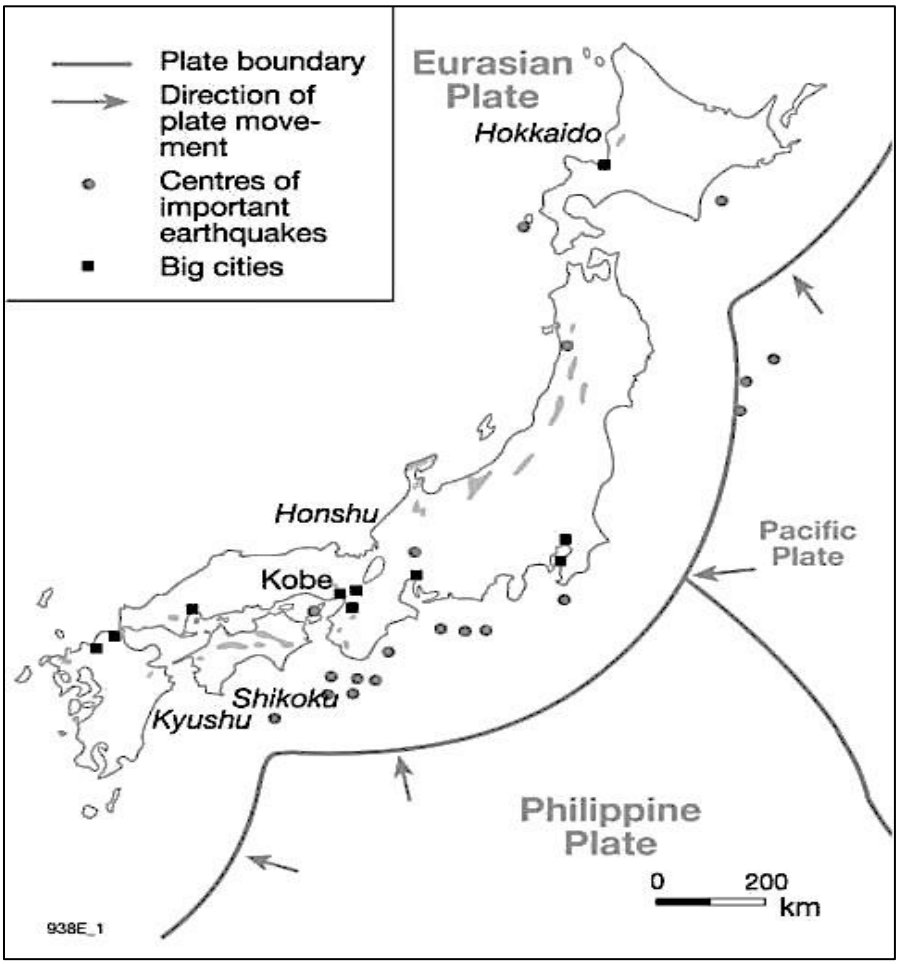
Cross-sectional view of plate boundaries



(Source: http://volcano.oregonstate.edu/vwdocs/volc_images/north_asia/Japsect.jpg)

Fig. 8

Location of plate boundaries near Japan



(Source: http://media.diercke.net/omeda/800/10938E_1_Japan_Erdbeben_SW.jpg)

Fig. 9

(i) With reference to Fig. 8, describe the distribution of the earthquakes found. [3]

(ii) Use Figs 8, 9 and studies made, to help you explain types of tectonic hazards and features that are associated with plate movement near mainland Japan. [5]

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9. Study Fig. 10 which shows plate and the locations of significant earthquakes indicated by triangles.

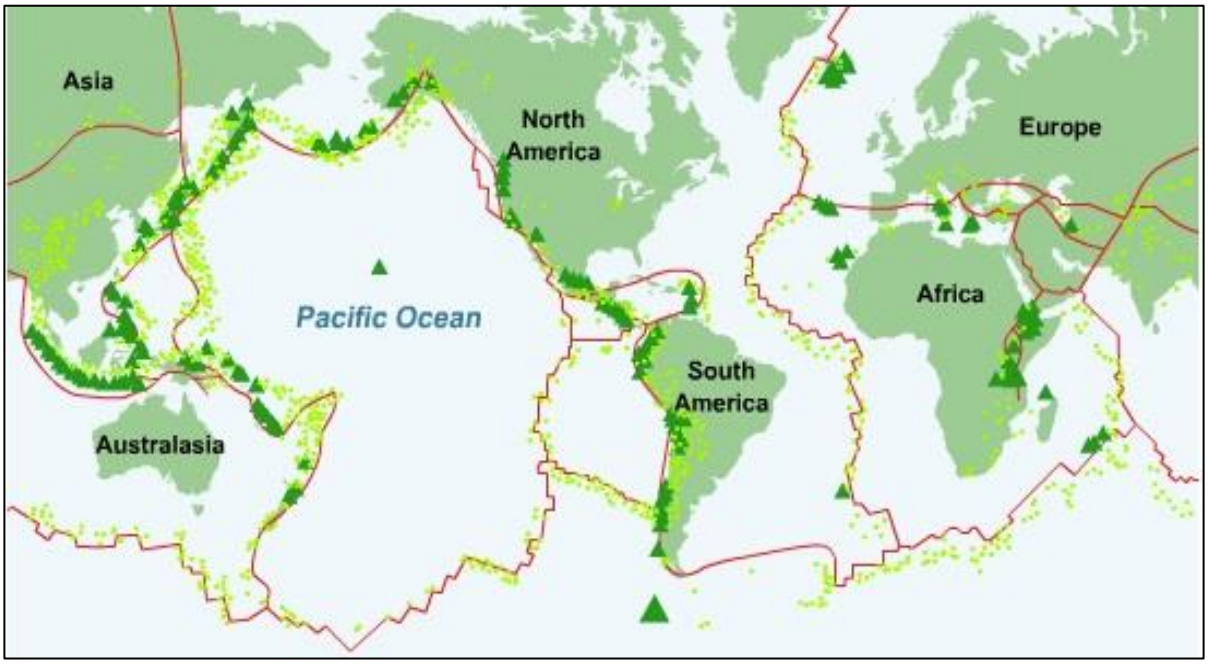

Fig. 10

(i) With reference to Fig. 10, describe the distribution of earthquakes [4]

(ii) Account for the distribution shown in Fig. 10. [4]