

UNIT 1

Natural hazards and risk

Resources and answers
to activities

Figure 1

Wildfire in southern California, 2017



Activity 1

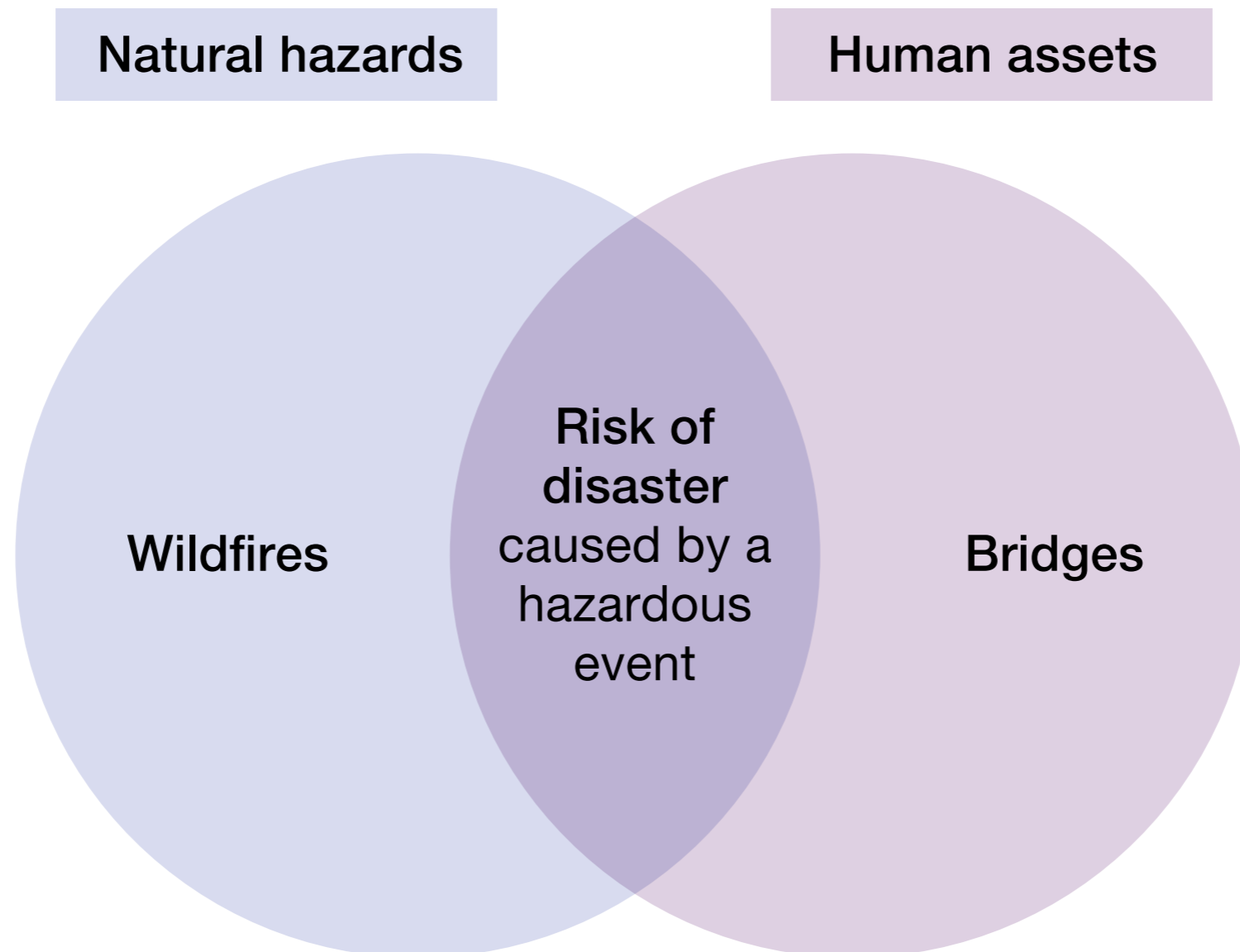
Natural hazards and risk

- a** Wildfire
- b** The buildings are at risk as they are very close to vegetation (trees) that could easily catch fire and then spread to the houses.
- c** The use of fire-retardant materials on the roofs; cutting down or burning back the vegetation to remove the fuel for the fire; abandon the houses and prohibit future developments so close to the vegetated area.

Figure 2

Natural hazards and risk

A Venn diagram showing the risks associated with natural hazards



Activity 2

Natural hazards and risk

Natural hazards might include earthquakes, volcanic eruptions, floods, drought and tropical storms.

Human assets might include houses, roads, airports, electricity lines, public parks and farms.

Figure 3

Natural hazards and risk

Graphics illustrating the risks associated with natural hazards



Activity 3

You should devise a graphic (freehand or electronically) that shows clearly the link between a natural hazardous event and its potential impact on people or human activity.

UNIT 2

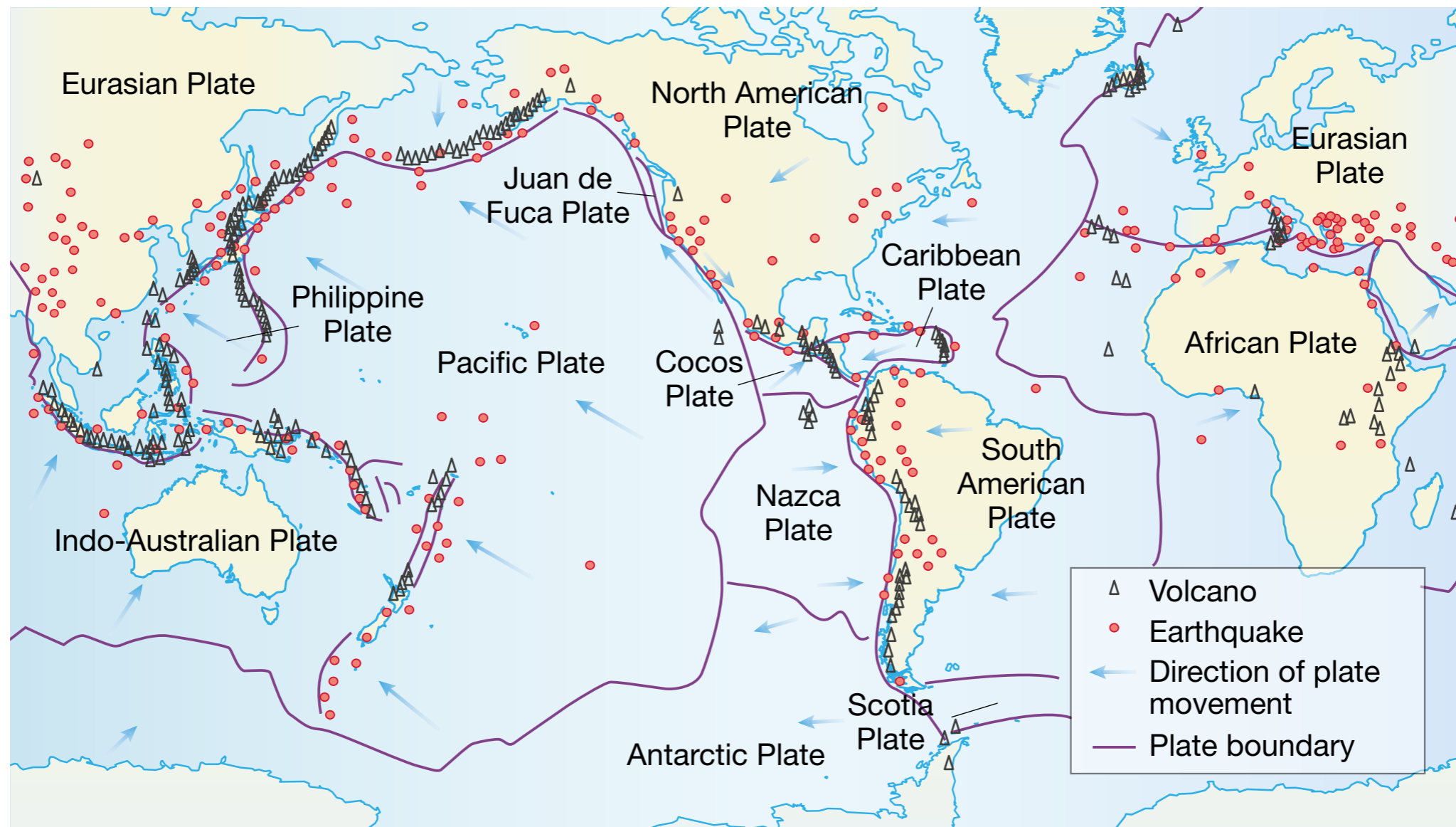
The distribution of earthquakes and volcanoes

Resources and answers
to activities

Figure 1

The distribution of earthquakes and volcanoes

The global distribution of volcanoes, earthquakes and plate margins



Activity 1

The distribution of earthquakes and volcanoes

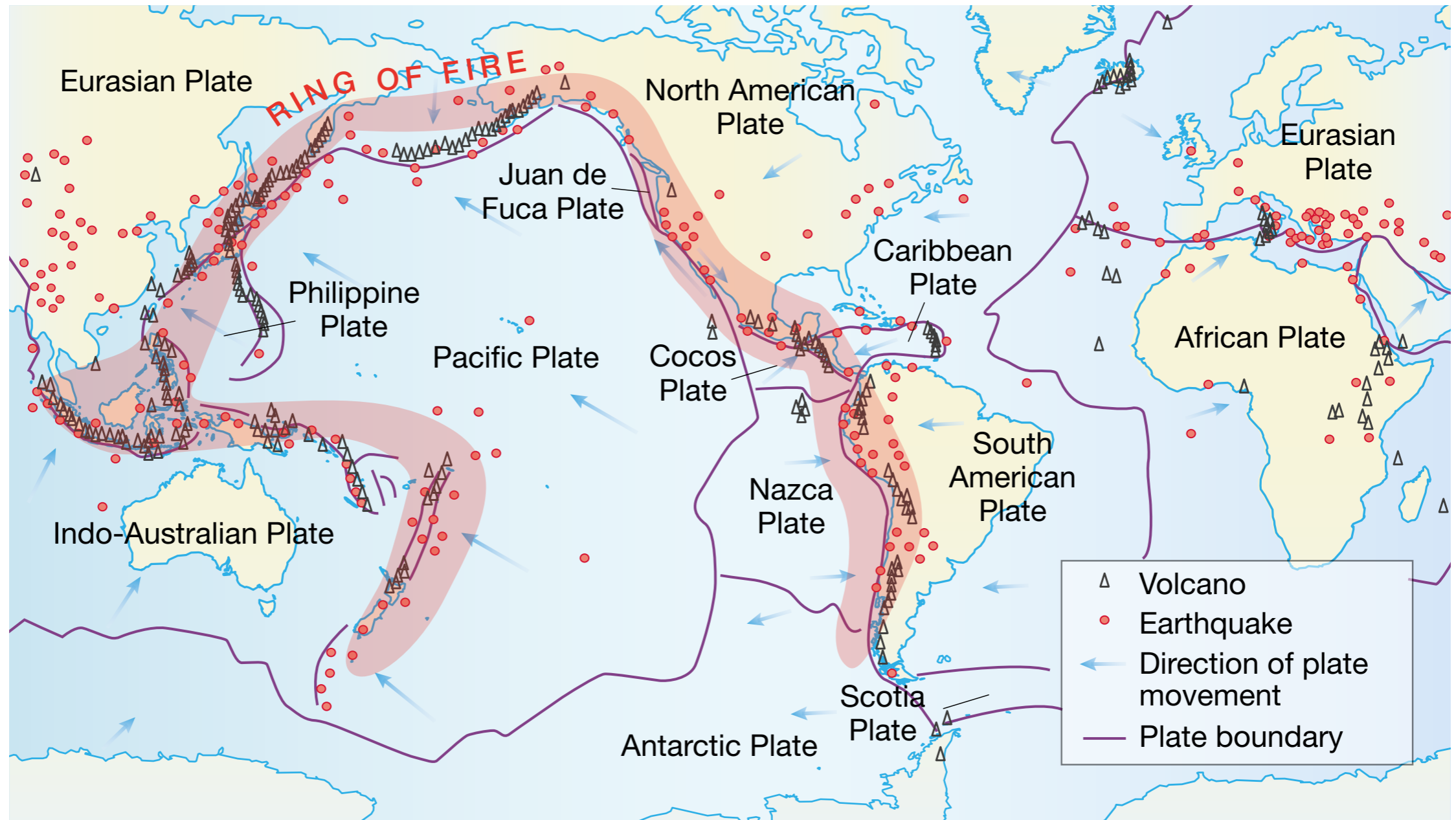
- a** Volcanoes are concentrated in several linear or gently curved belts, mostly coinciding with the tectonic plate margins. There is a particular concentration around the edges of the Pacific Ocean ('Ring of Fire'), especially through Indonesia, the Philippines and Japan. There is also a clear line of volcanoes along the west coast of South America. Elsewhere there are isolated concentrations through the mid-Atlantic, the Mediterranean and East Africa.
- b** Nazca and South American

Activity 1

CONTINUED

The distribution of earthquakes and volcanoes

C



Activity 1

CONTINUED

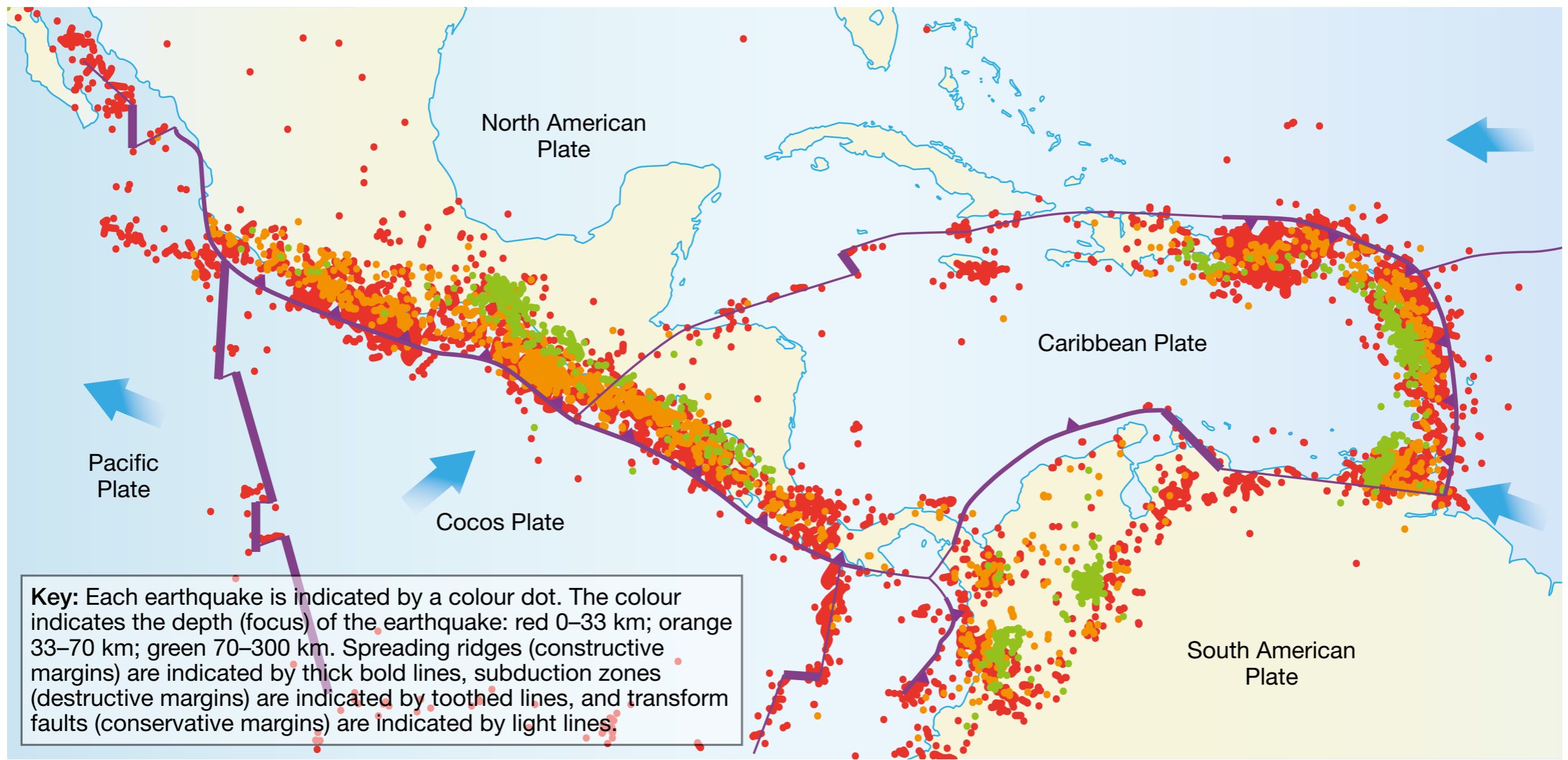
The distribution of earthquakes and volcanoes

- d** There is a line of earthquakes along the western coast of the USA coinciding roughly with the plate margin (Pacific Plate and North American Plate). There is also a scattering of earthquakes in central and eastern USA and a few in central Alaska.
- e** Australia is in the centre of a tectonic plate (Indo-Australian Plate) and therefore does not experience the seismic or volcanic activity associated with plate margins.

Figure 2

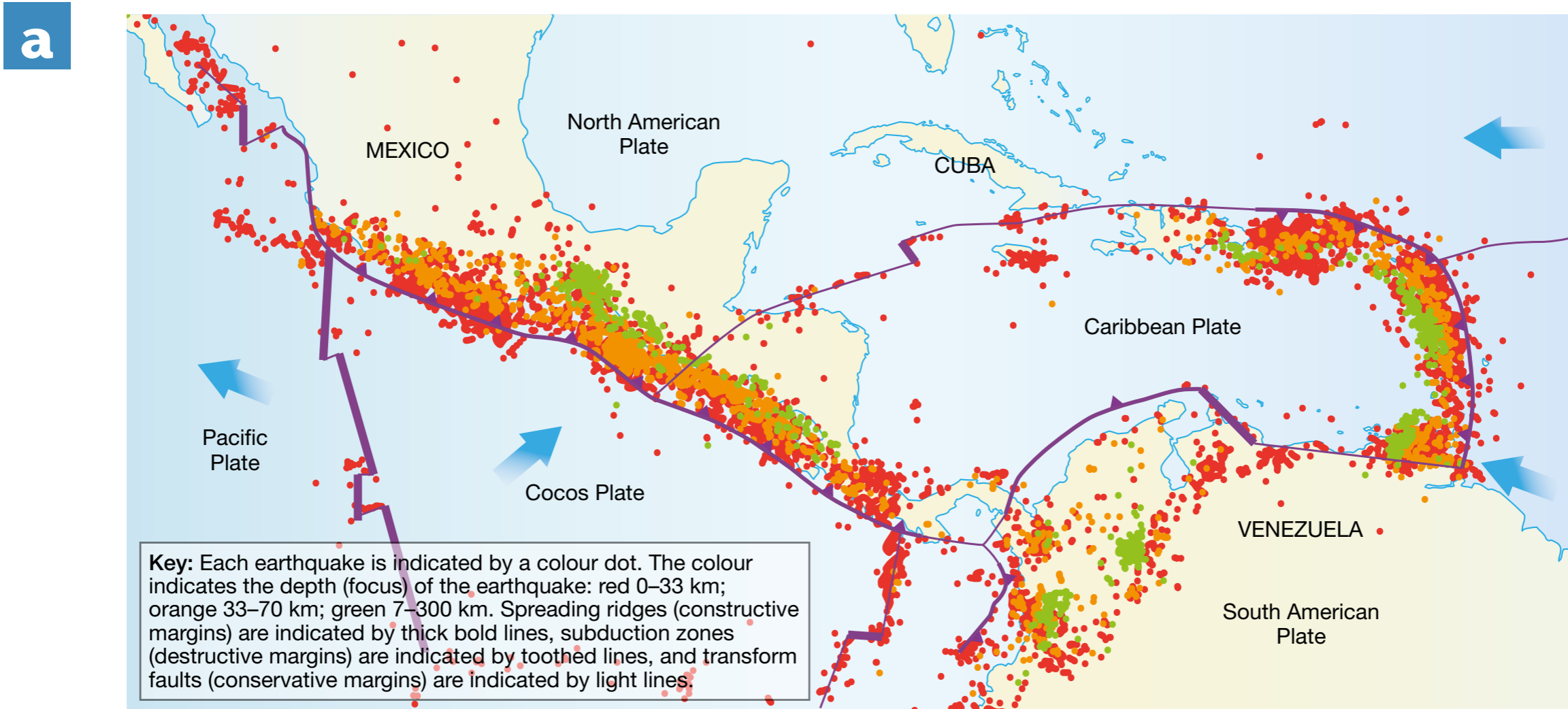
The distribution of earthquakes and volcanoes

The distribution of earthquakes in Central America



Activity 2

The distribution of earthquakes and volcanoes

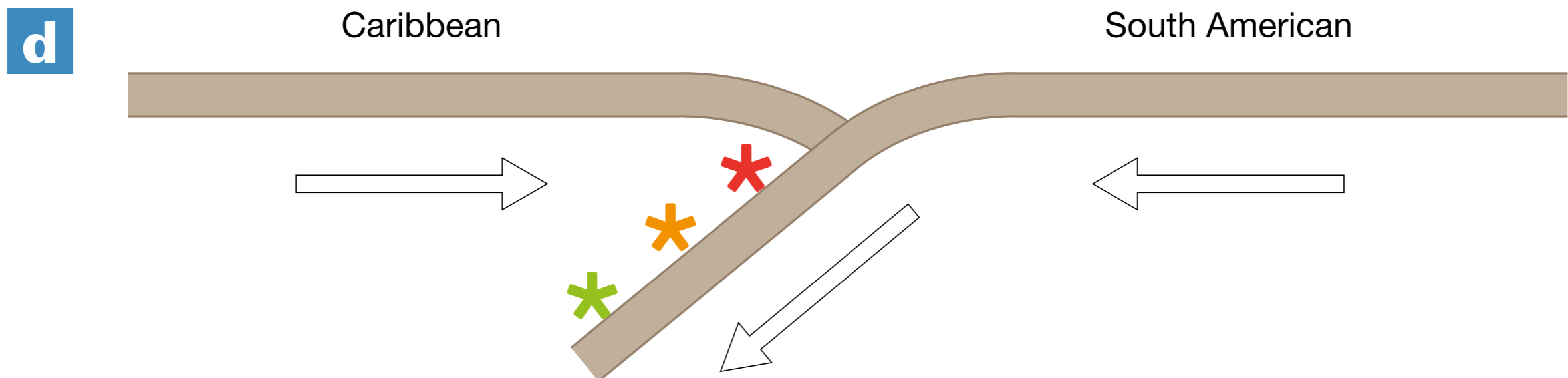


b The plates are moving away from one another, with the Pacific Plate moving northwestwards and the Cocos Plate moving northeastwards.

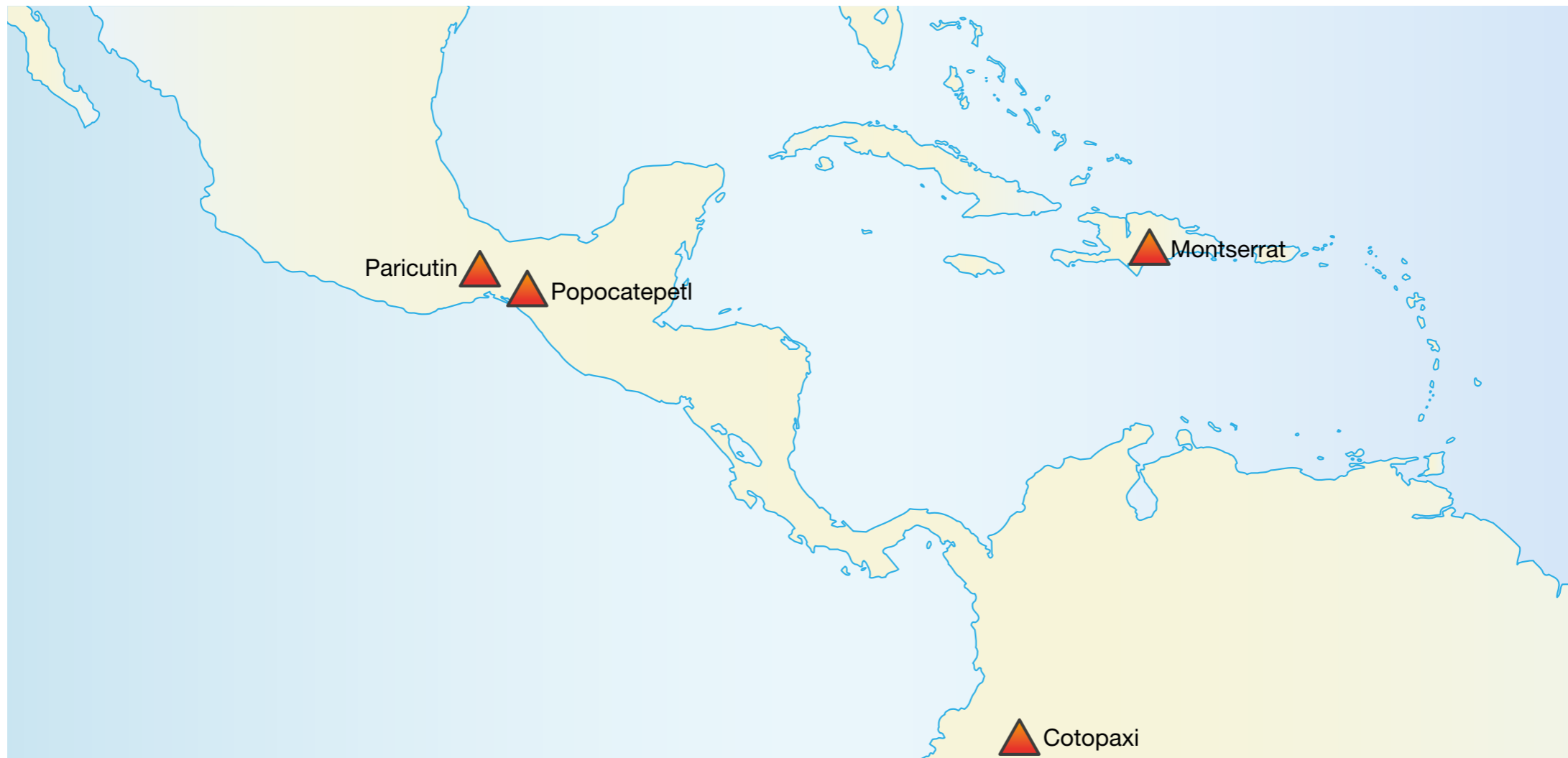
Activity 3

The distribution of earthquakes and volcanoes

- a** Destructive plate margin
- b** The South American Plate is moving towards (and subducting beneath) the Caribbean Plate.
- c** There is a high concentration of earthquakes at this plate margin. Earthquakes form a broad belt, with shallow earthquakes in the east and progressively deeper earthquakes to the west.



The volcanoes are shown on the map below. Cotopaxi will be at the very bottom edge of Figure 2. The volcanoes are on destructive plate margins.



UNIT 3

Processes at plate margins

Resources and answers
to activities

Figure 1

Cross-section through the Earth to show tectonic activity and landforms

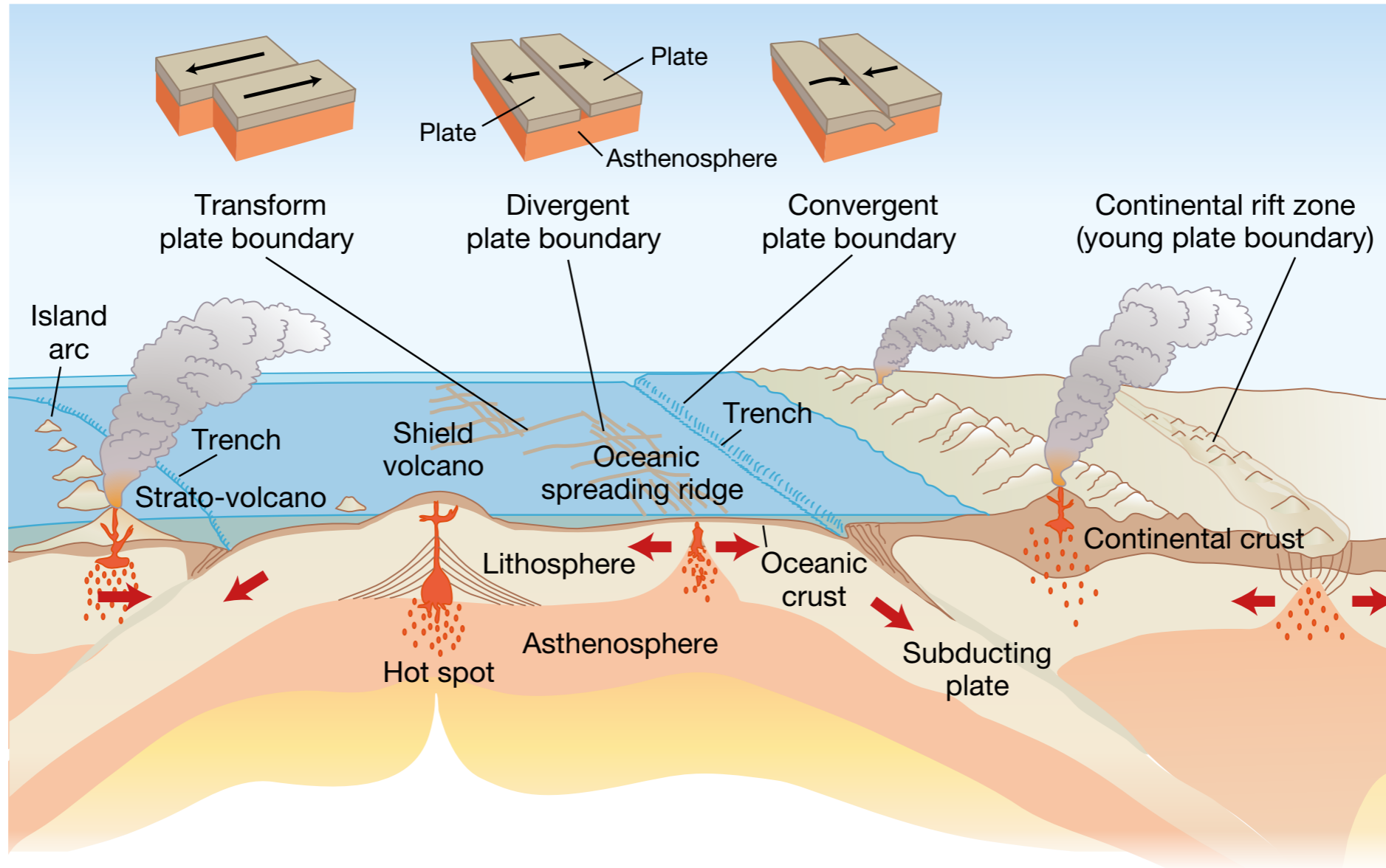
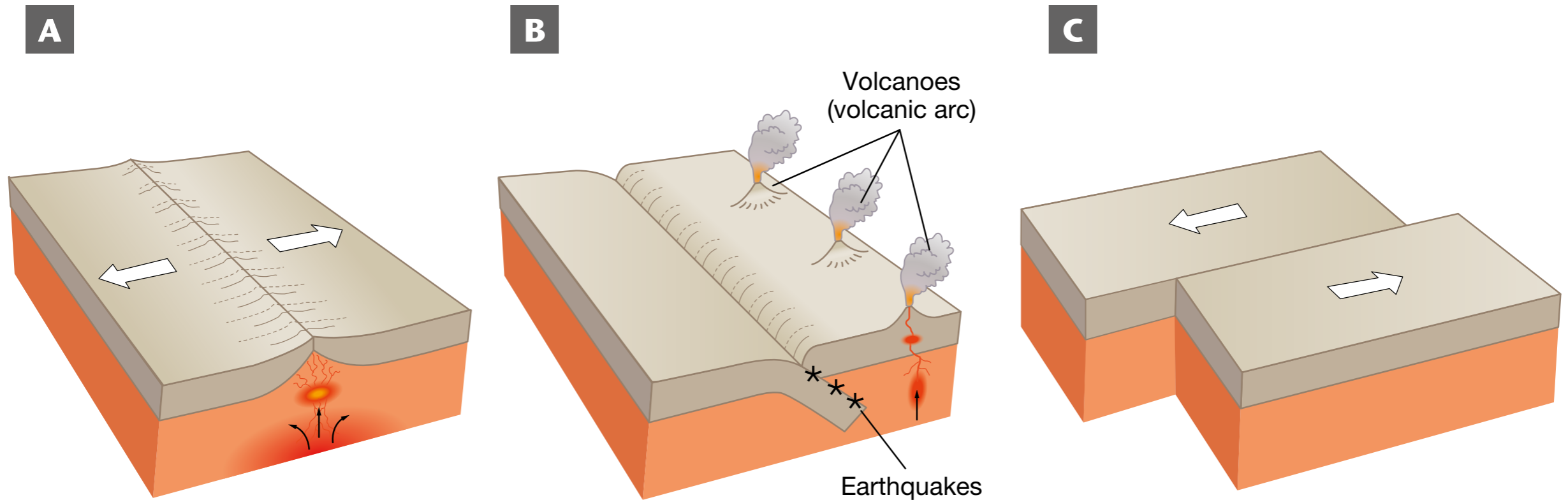


Figure 2

Processes at plate margins

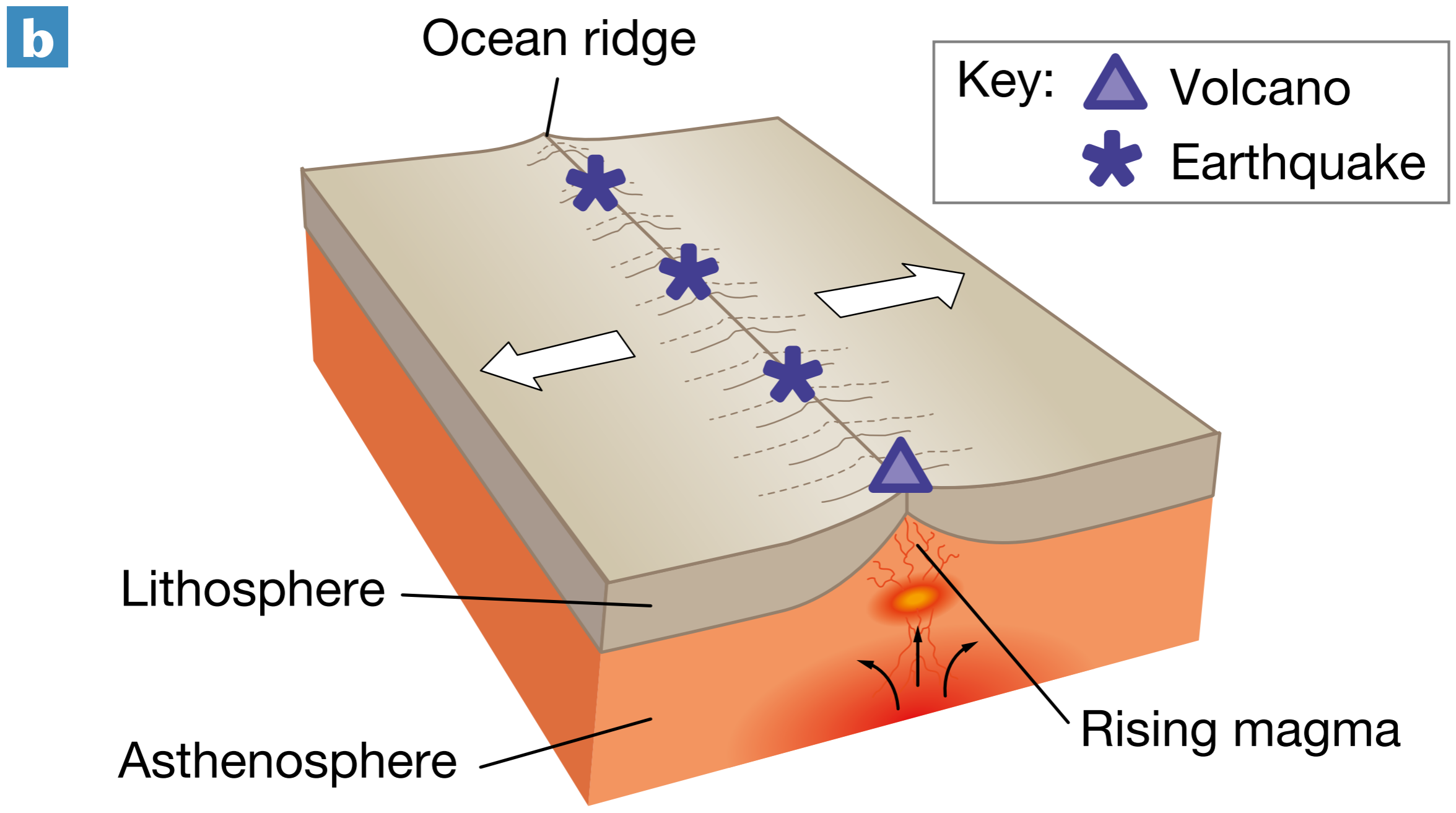
Processes and landforms at plate margins



Activity 1

Processes at plate margins

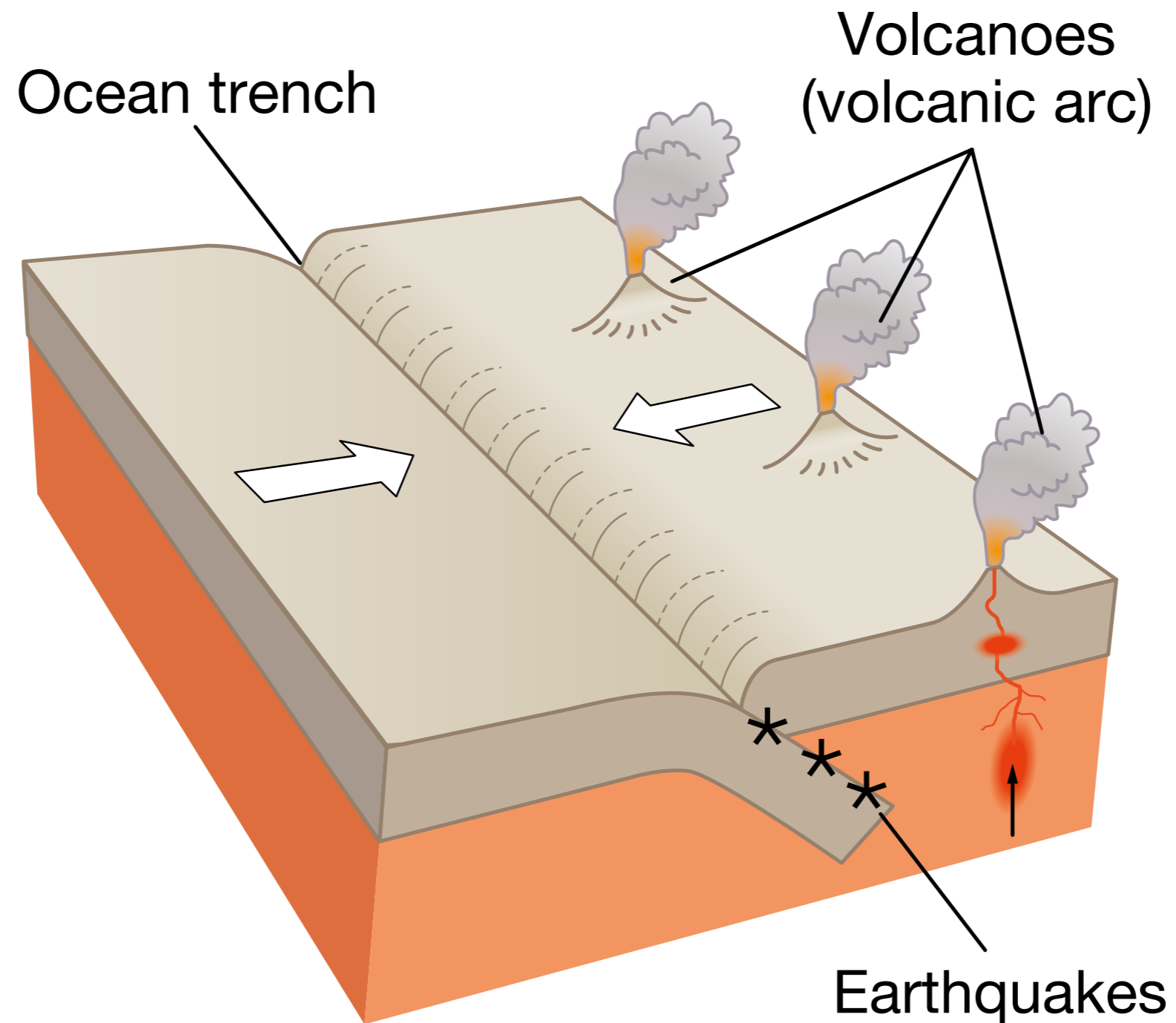
a A – constructive; B – destructive; C – conservative



Activity 1

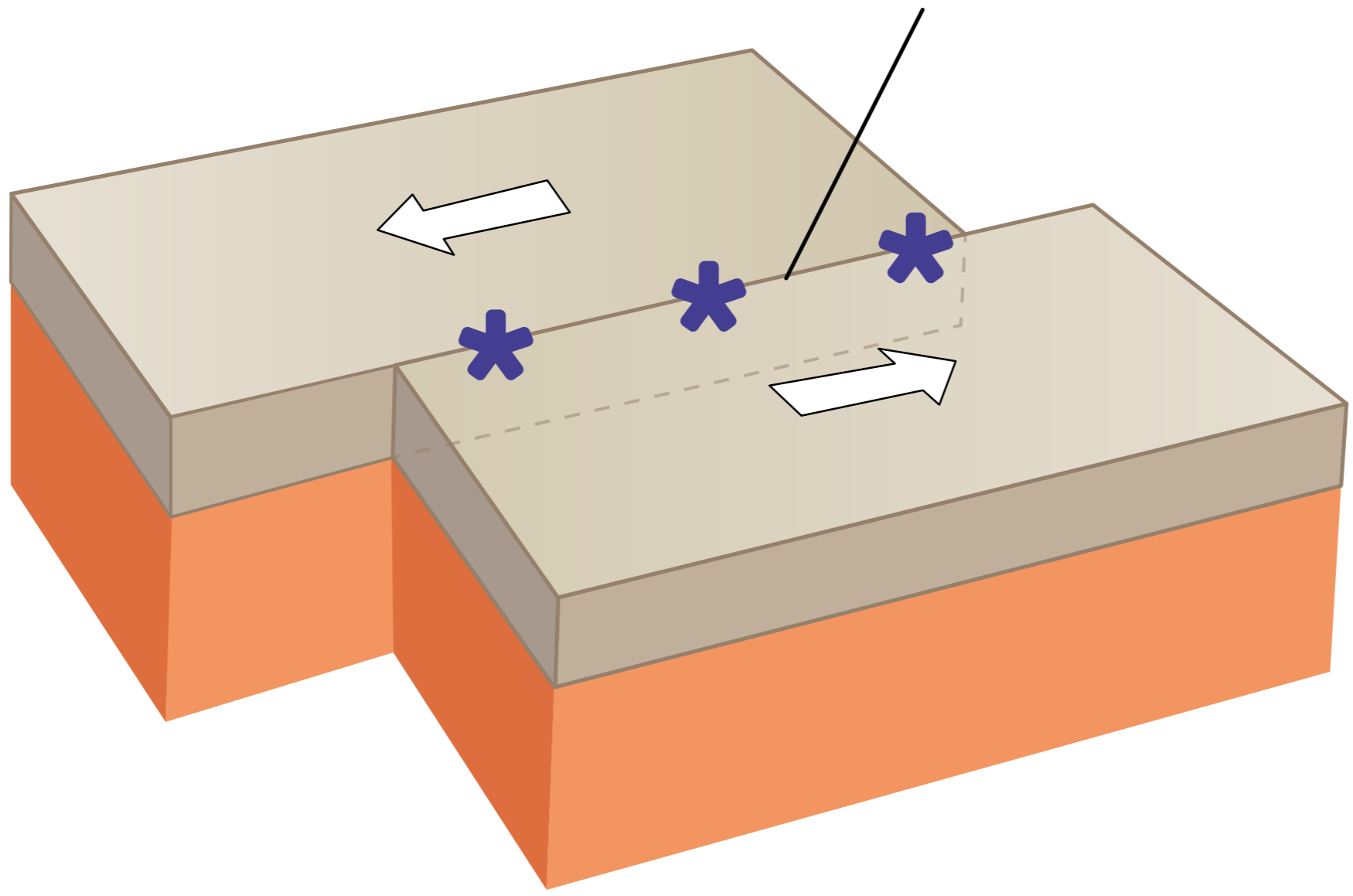
CONTINUED

Processes at plate margins

C

d

Earthquakes within crust



Activity 1

CONTINUED

Processes at plate margins

- e** There are no volcanoes at conservative margins because there is no supply or generation of magma, unlike at constructive and destructive margins – no magma, no volcanoes.
- f** At a destructive margin, one plate subducts beneath the other. The intense pressure generated in the subduction zone triggers earthquakes that occur along the upper edge of the subducting plate. Melting, due to the pressure and heat, in the subduction zone forms magma that rises towards the surface to form volcanoes.

EXAM TIP Answers must be sequential and show clear links between processes and earthquakes/volcanoes to achieve a Level 2 response.