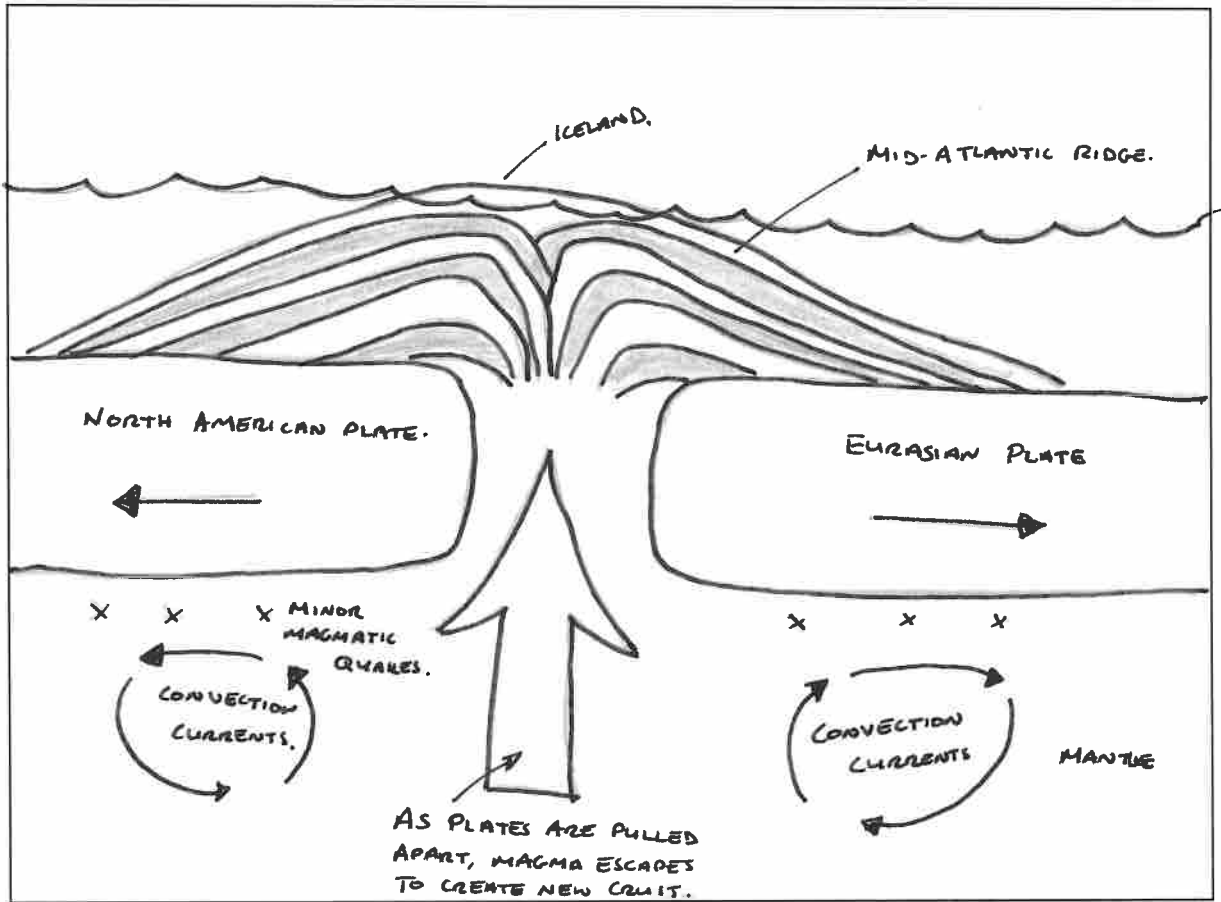


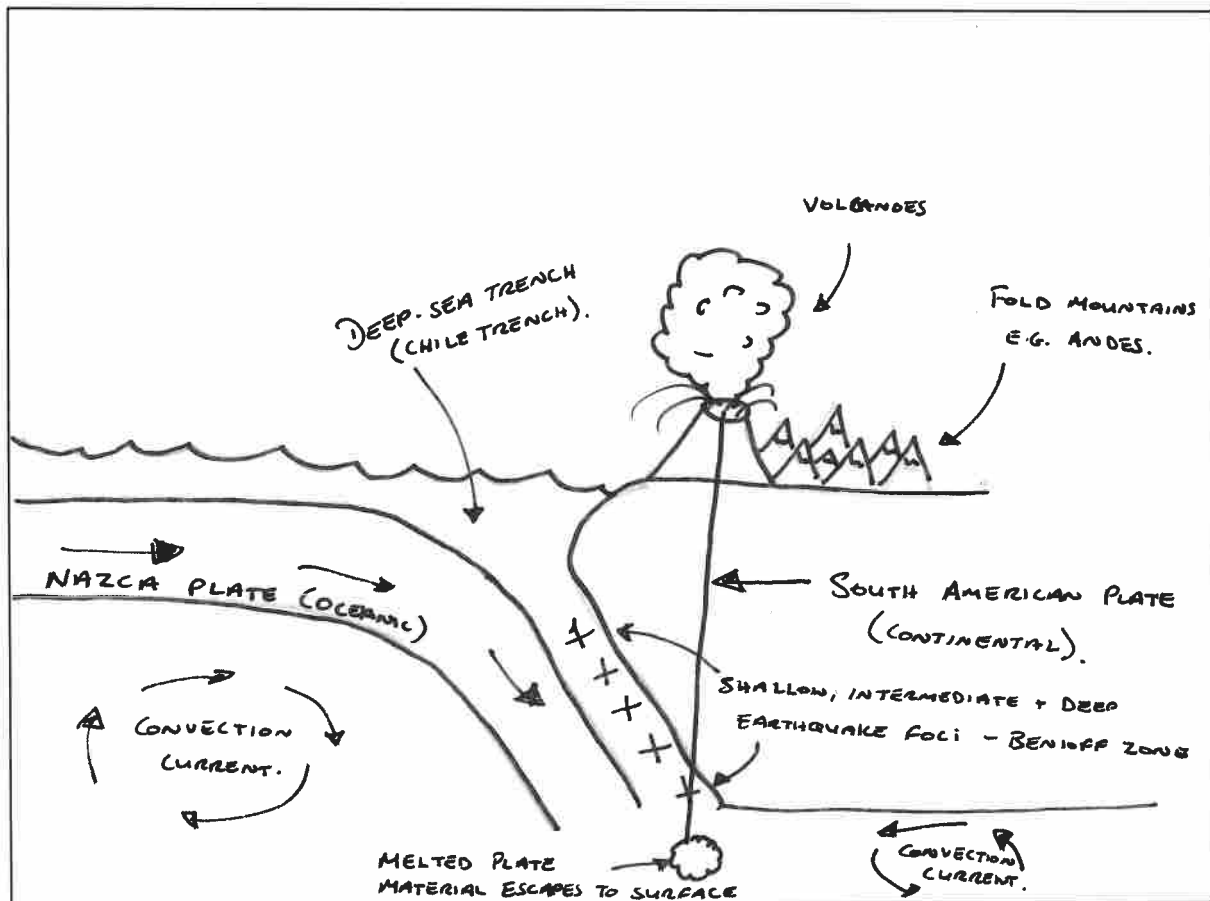
Plate Boundaries:

Constructive Plate Boundaries:



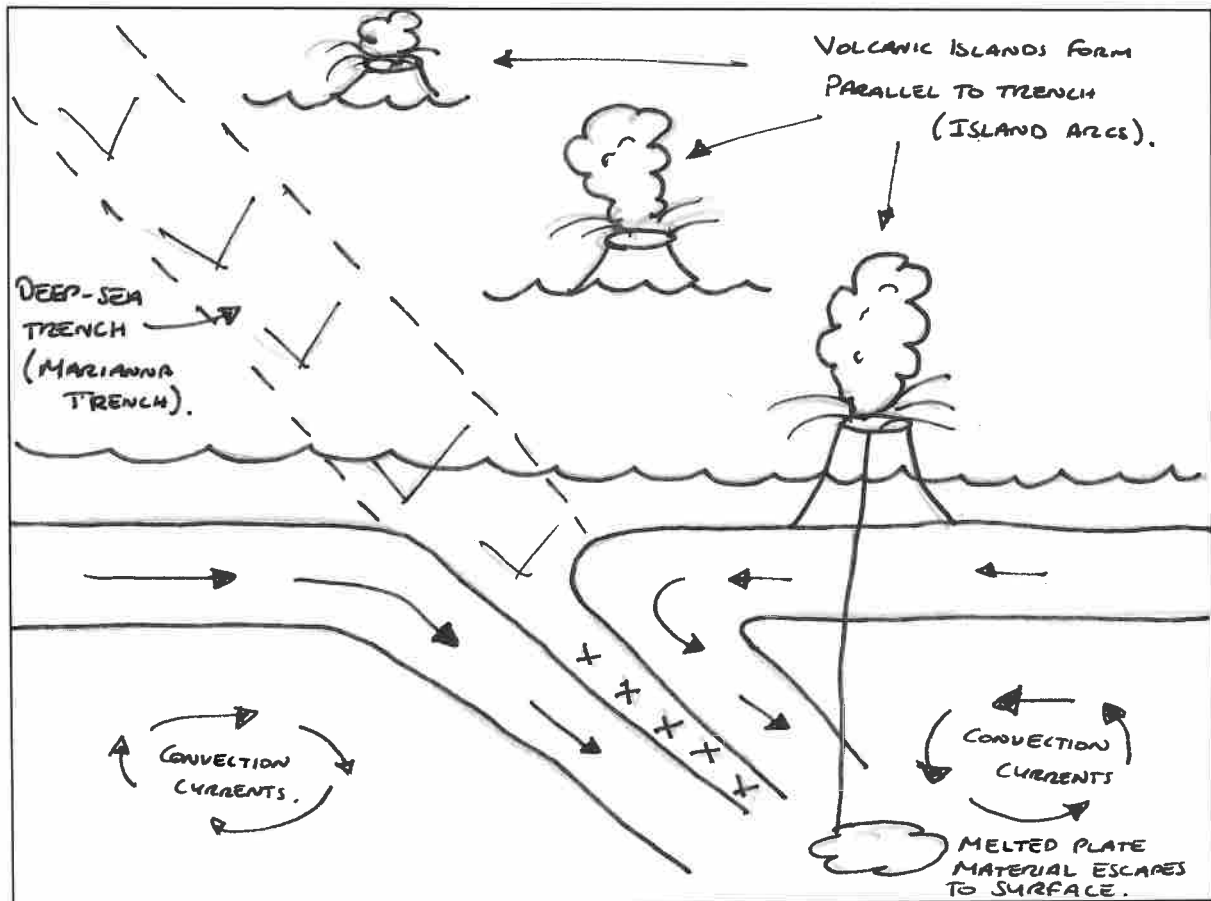
- **Convection currents** in the mantle rip plates apart, creating a gap between the plates for magma to escape up through. The pressure of the magma can cause minor magmatic earthquakes.
- When the magma reaches the surface as **lava**, it pours through fissures and cools and hardens to form new crust. With repeated plate movement and volcanic activity, the hardened lava grows to form an **ocean ridge**. An example of this is found in the **Mid-Atlantic** where the **North American Plate** is moving away from the **Eurasian plate**. The ridge has formed a spectacular mountain range down the middle of the Atlantic Ocean and into the Southern Ocean. In some parts it has broken through the surface of the water, for example – **Iceland**.
- This is an example of a **constructive plate boundary**.

Oceanic-Continental Plate Boundary:



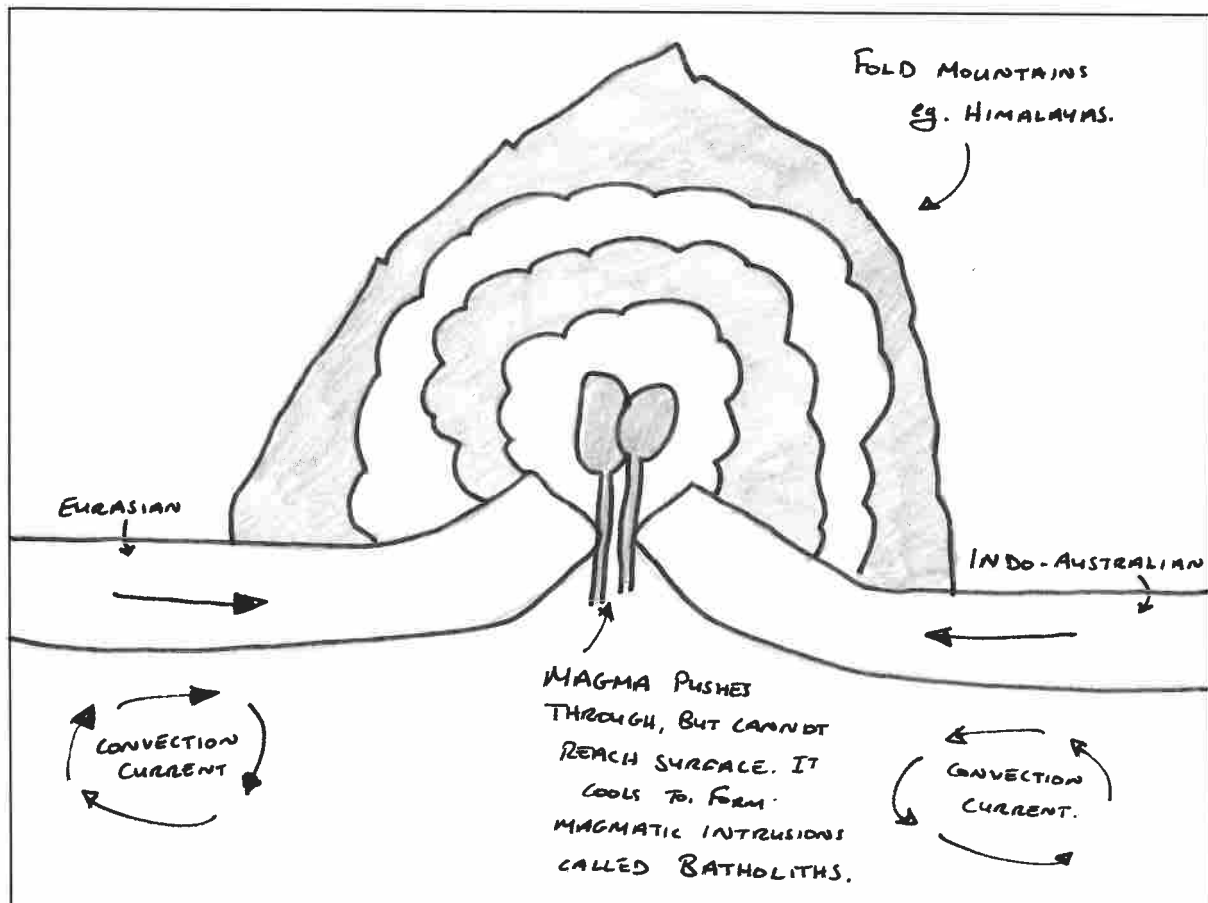
- This is a **destructive plate boundary** where an **oceanic plate (Nazca)** collides with a continental plate (South American Plate).
- The more dense oceanic plate is subducted below the much thicker continental plate to form a **subduction zone**. At this point various features are formed.
- With subduction occurring we get a **deep-sea trench** forming e.g. **Chile Trench**.
- When the continental plate collides it buckles, and the land on top folds up to create **fold mountains e.g. The Andes**.
- Where the 2 plates rub together at the point of subduction, friction occurs. This builds up heat that can start to melt the plate, but pressure also builds up as the plates stick. Earthquake foci are located at shallow, intermediate and deep intervals and this is known as the **Benioff Zone**.
- As the oceanic plate moves into the mantle, it melts and creates a magma that is of a different, more volatile consistency than the mantle material. It forces its way upwards and escapes through weaknesses in the continental plate and creates **volcanoes**.

Oceanic- Oceanic Plate Boundary:



- When two **oceanic plates** collide (**Pacific Plate** and smaller **Marianna Plate**), they both get subducted into the mantle. There is friction between the plates as subduction occurs and there is violent earthquake activity.
- As there is subduction we can also find a **deep-sea trench (Marianna Trench**, one of the deepest points on the earth's surface, around 11km deep in places).
- As the plates melt, the magma created is of a more volatile and gaseous consistency and it rises through weaknesses in the oceanic plate and escapes through fissure on the surface. With repeated eruptions, material builds up to form volcanic islands that pop out of the water parallel to the trench. These are known as **island arcs**, for example, the Phillipines.

Continental-Continental (Collision) Boundary:



- When two **continental plates** collide (Eurasian & Indo-Australian), neither is forced down into the mantle. The collision causes both plates to buckle upwards.
- The **buckling** of the plates causes the land on top of the plates to fold upwards and **Fold Mountains** are formed. This happened when India collided with Asia and the sea bed was folded upwards to create the **Himalayas**. There will be some earthquake activity, but no volcanic activity. There is a weakness for lava to break through from the asthenosphere, but the sheer weight of the land on top prevents it from reaching the surface. The magmatic intrusions cool in the mountains and form **batholiths**.