Discuss the geographical distribution and the impacts of constructive plate boundaries

The crust of the earth is broken up into huge slabs of rock called plates. These plates float on semi-molten rock of the upper mantle and are moved by slow but powerful convection currents of magma beneath them. Constructive plate boundaries occur where plates diverge and where new earth crust is constructed, resulting in new land forming due to this plate movement.

Convection currents occur as hotter, less dense magma rises to meet with the lithosphere. As it does, it spreads out horizontally, creating enough tension to pull the lithosphere apart. The Earth’s crust eventually breaks up into plates and diverges. There are 7 major plates and several minor plates. The cycle continues as the once hot magma cools, becomes more dense and sinks down to the core forcing hotter magma up towards the asthenosphere. Cracks and fissures start to occur on the earth's surface over the diverging plates and magma from the mantle starts to emerge up through them helping to push the plates apart.

As the American plates moves away from the Eurasian and African plates, the magma builds up a mid ocean ridge called the Mid-Atlantic ridge. They separate at a slow rate of 10-15 mm a year. It is constructed by fissure eruptions, where large amounts of lava flow out from a long crack in the surface of the ground. The cracks are only a few metres wide but in regards to the Mid atlantic ridge, its length stretches for kilometres. Basic lava emerges through the cracks, this lava has a low silica content allowing volcanic gases to escape and also has a low viscosity. This causes gentle, regular volcanic eruptions with lava that spreads out quickly over a wide area and cools to form basalt rock. A lot of this rock is still under water but some of it has risen so much to form new land seen as islands along the ridge. Iceland is one such island said to be 19-20 million years old. Iceland has many active shield volcanoes formed from the basic, such as Skjaldbreiðuras which lies on a constructive boundary .

Over 65 million years ago, the American and Eurasian plates began to separate and runny, basic magma began to emerge and spread quickly over a chalk surface to form a plateau, an area of highground of basalt rock. Over fifteen years, lava flows occurred, with some having a thickness

of 40 metres. This formed the Antrim plateau in County Antrim. As the plates began to separate more, the Atlantic ocean began to expand with the formation of new land. This eventually pushed Antrium away from the plate boundary causing volcanic activity to cease there.

When convection currents start to go in opposing directions, a constructive boundary starts to occur beneath a continental plate. However, the pull in opposite direction is not strong enough to create a clean, single break. The tension causes parallel faults to occur on both sides of a rift valley and eventually the floor of the valley slips downward as the plates are pulled apart. This is how the African Rift Valley formed in East Africa, it stretches for 4800 kilometres. Long lakes such as Lake Malawi occupy parts of the valley and as the valley widens as the plates are stretched, the Red sea begins to flow into it.