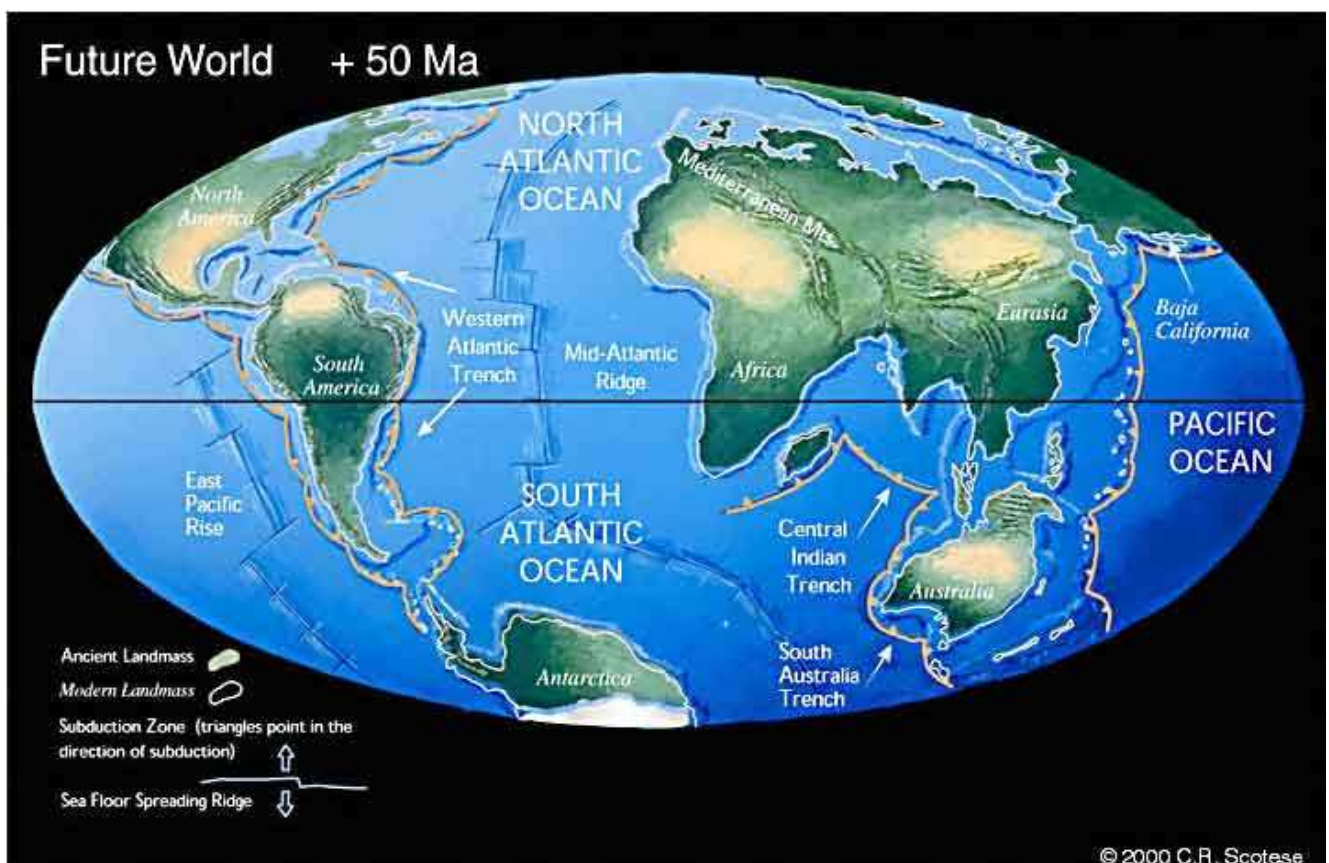


PLATE TECTONICS

Plate Tectonics is the theory that all of the earth's crust is divided into 'plates' of rock floating on the earth's mantle. The heavier, denser plates beneath the oceans are 'oceanic' crust, whereas the lighter, thicker plates of the continents are 'continental' crust. The plate boundaries are where almost all volcanoes and earthquakes happen, and are shown on this map. The plates rub together or form gaps, so it is along these plates that we find volcanoes and earthquakes happening.



In the future, the plates could move to make a world quite different to today's;



There are four types of plate boundary, shown below;

Name	Constructive Boundary
Description	Two plates are moving apart here, creating new land as magma rises and solidifies to create a ridge.
Features	Shield volcanoes occur here, with runny, basic lava. New plate is made here.

Name	Destructive Boundary
Description	Two plates are crushing together here, and one is being subducted beneath the other and melted, destroying plate.
Features	Composite volcanoes occur here, with explosive eruptions of acidic lava. Plate is destroyed here. Between an oceanic plate which sinks under a continental plate.

Name	Collision Boundary
Description	Two continental plates are pushing against each other, forcing the plate up into folds and building huge mountain ranges such as the Himalayas.
Features	No volcanoes, but earthquakes still occur. Mountains formed here, but plate is neither created nor destroyed.

Name	Conservative Boundary
Description	Two plates rub against one another as they travel in opposite directions (or the same direction at differing speeds).
Features	No volcanoes, but earthquakes are quite common.

Earthquakes

Earthquakes can happen at any boundary, and are caused by a build up of friction between two tectonic plates as they move. When this friction is released, the plates shake and an earthquake happens. The point below ground where the actual movement happens is called the focus; the point which is the centre of the quake above ground, directly above the focus, is known as the epicentre. As the plate settles into its new position, smaller shocks are often felt. These are known as 'aftershocks'

Earthquakes are very destructive, and in earthquake-prone areas such as California much time, effort and of course money is spent on creating buildings that can withstand earthquakes. In less wealthy or less well-prepared areas, death tolls are much higher.

Volcanoes

Volcanoes happen when magma forces its way to the earth's surface. Some simply pour small amounts of lava out, while others erupt in huge columns of dust and rock with giant 'pyroclastic flows' of hot dust and ash which, moving at hundreds of miles an hour, obliterate anything and everything in their path. Volcanoes can occur for a number of reasons; either because there is a gap through which runny lava rises and pours out in a shield volcano (this is common on constructive boundaries or hotspots), or because the pressure of magma beneath the surface grows too great and the volcano explodes.

Volcanoes are probably more dangerous than earthquakes, and are often accompanied by many other problems. The lava kills comparatively few people compared to the pyroclastic flows, rains of hot rock and ash, and mudslides/landslides the eruption causes. Volcanoes are harder to prepare for than earthquakes, although easier to detect beforehand; besides evacuation, though, there are few defences against these great threats of nature.