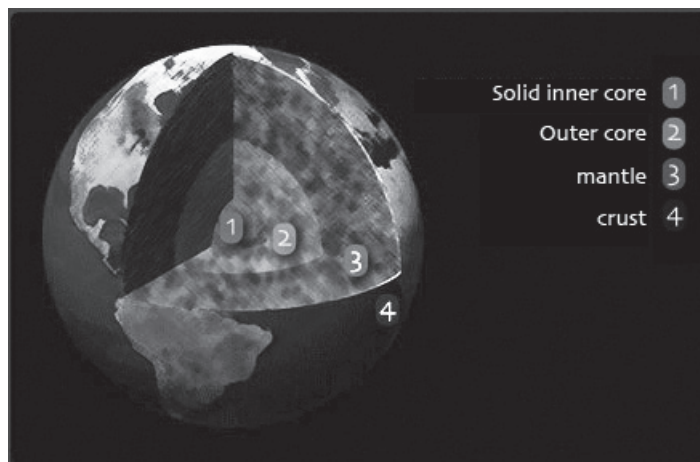


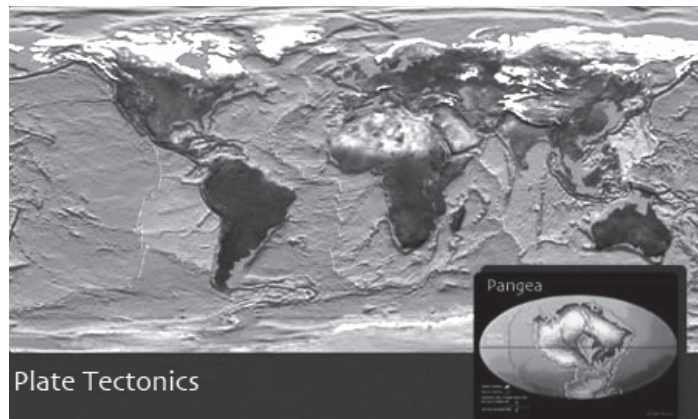
Continental drift



Planet Earth is made up of four layers. The solid outer layer or **crust** (0 to 70 km) lies over the mantle which is a highly viscous layer (70-2890 km) and is composed of silicate rocks rich in iron and magnesium. The **mantle** surrounds the **outer core** (2890 - 5150 km) which is less viscous and finally the **internal solid core** (5150 - 6360 km) of iron and some nickel.

The Earth has not lost its dynamism and processes of crust formation still continue. The lithosphere, a layer composed of the crust and upper mantle, is divided into 12 tectonic plates that slowly move. These movements are the cause of earthquakes and volcanic activity.

The German geologist and meteorologist Alfred L. Wegener (1880-1930) proposed the **theory of continental drift** in 1915. Unlike other researchers who explained the distribution of plants and animals and their fossils in the world by claiming the existence of old bridges across continents and the disappearance of the famous Atlantis (the lost continent), Wegener brought together a series of observations like a jigsaw puzzle, proposing that the continents had once been joined together in a supercontinent, which he called "**Pangea**" (from Latin, *pan* = all, *gea* = land, all land).



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His observations included the shape of the continents, particularly the complementarity between Eastern South America and Western South Africa, the distribution of coal deposits in eastern North America and Europe and the distribution of related reptile fossils separated by oceans. His theory was greeted with scepticism by most scientists of his time. However, developments in the sciences of geology and paeleo-magnetology in the 1950s and 1960s confirmed his ideas. Wegener's hypothesis was accepted 20 years after his death.

The dynamics of the continents, travelling above their plates, has helped explain many aspects of the distribution of plants and animals in the world. For example, the movement of the Caribbean Plate, from west to east across the North American and South American plates, allowed some animals, such as small todies (*Todus spp.*) and coquí frogs (*Eleutherodactylus*), to enter and now form part of the fauna of the Antilles (front of the plate). At the same time, the back of the plate formed a bridge (Central America) between North and South America allowing a faunal exchange of marsupial and placental mammals.