

Examine the influence of volcanic activity on the development of the Irish landscape with reference to each of the following:

• Intrusive features • Extrusive features.

An example of an extrusive landform in Ireland is the Antrim plateau in County Antrim. It is an area of highground of basalt rock. It began to form 65 million years ago when the Eurasian and African plate began to separate. Fissures and cracks began to appear and runny basic magma containing less than 55% silica content began to emerge through them. As basic magma has a low viscosity and little volcanic gases trapped within it, it flowed over the chalk surface quickly. Over 15 million years, lava flows occurred like this. Some flows had a thickness of 40 metres. The total area of these flows are 3800 kilometres squared, it is said to be Europe's most extensive lava field. As the lava of each flow cooled, it became basalt rock. The basalt rock was weathered between the time of each lava flow to form laterite soil. As the American and Eurasian plate began to separate more, the Atlantic ocean began to open up and push Antrim eastwards, further from the volcanic activity, until all volcanic activity in Antrim ceased. The Antrim plateau is famous for the Giant's causeway, the 60,000 hexagonal columns that were formed by cooling slowly as they came into contact with the sea water as they rose from the seafloor.

The Leinster batholith is an example of a plutonic or intrusive landform in Ireland. It forms the base of the Dublin and Wicklow mountains. It was formed during the caledonian folding when the American and Eurasian plates collided which also formed the fold mountains of Leinster. As a plate began to be pushed down into the mantle through the process of subduction, it began to melt into magma. Due to the pressure of the constantly colliding plates, it was pushed up into the Earth's crust, forming a dome-shaped magma chamber called a batholith. The magma cooled slowly to form a large crystalline rock called granite. Over time, denudation wore away the overlying limestone rock to expose the granite rock at the surface. It now forms the kippare mountains in Co.Wicklow. Batholiths are normally surrounded by an aureole of metamorphic

rocks that were formed when the super hot magma under pressure was forced into the earth's crust, which then caused neighbouring rock to become melted and metamorphosed. Such rocks on the edges of the Leinster batholith include schist and quartzite. The Leinster batholith is the largest batholith in Western Europe. It is approximately 1500 km squared, while its length is 120 kilometres from Co.Dublin to Co. Wicklow.