

The photograph below (figure 2) shows the nature of the area of Thingvellir:-

View Looking NE across Thingvellir from the Viewpoint at Hakið

TASK:

(a) **Add** four arrows to this photograph (figure 2) and **label** the following four features:-

- (1) the **Öxará River**;
- (2) the **graben** (low lying area);
- (3) a **horst** (upstanding blocks);
- (4) a **fissure**.



Figure 2

The Geological Background

READ: Plate tectonics explain the landscapes of Thingvellir. Here is a location where the **North American Plate** and the **European Plate** are spreading apart from each other (**diverging**). The crust is thin in this area and slowly, but surely, the country is being **pulled apart** in this area.

The North American Plate is slowly pulling **westwards** whilst the European Plate is pulling **eastwards**; no wonder there are tensions! As a result of these tensions, **stretching** and **rifting** occurs and land subsides – to form the **G** _____ (the low lying land between the faults).

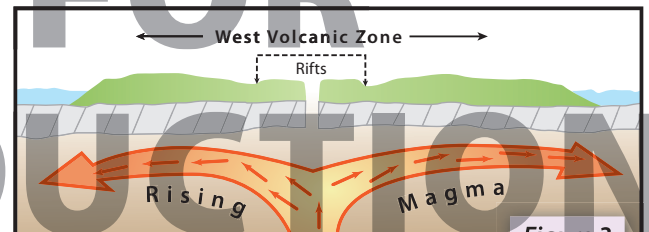
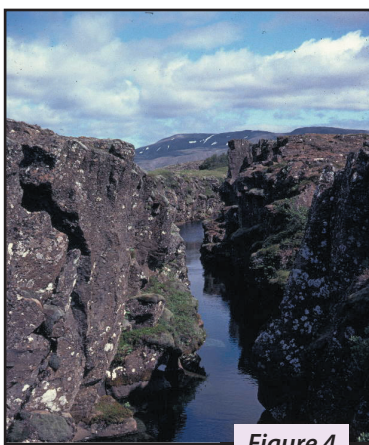


Figure 3

At Thingvellir itself (*and in the particular area where you'll later be walking and exploring*), the large graben structure (a low lying **depression**) is about **6-7km long** and about **80m deep**.



Further, between the **low lying graben** and the **upstanding horsts**, many examples of **normal faults** (where sections of rock slip **downwards/upwards** against each other) and **open fissures** (gaping "gashes" in the rock) can be seen.

This photograph (figure 4) shows the water filled fissure of **Peningagjá**, evidence of the stretching and rifting that **has** taken place ... and **is** taking place!