

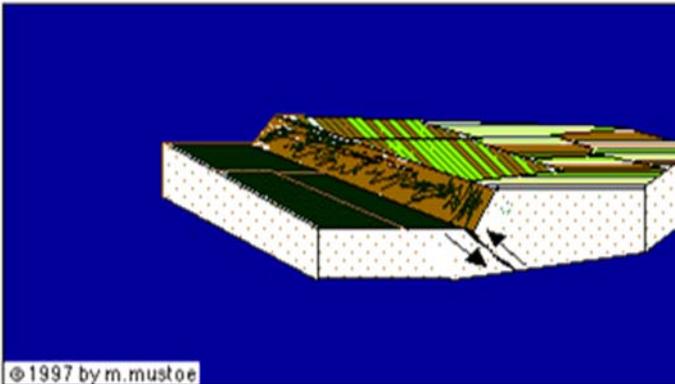
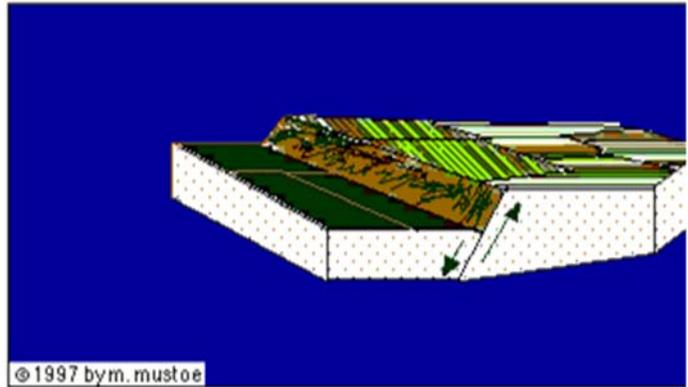
Basic Fault Types

As discussed in class, a fault is a break in the rock layers along which the rock moves. There are 4 basic types of faults found on the Earth.

The Normal Fault

Are faults in which the hanging wall moves down relative to the footwall. This is caused by movement of the fault blocks away from each other. (tension type of stress)

The normal fault is not necessarily normal in the sense that it is common....because.... it is not the most common of faults. However what is normal about them is that their movement tends to follow the gravitational pull on the fault blocks involved.

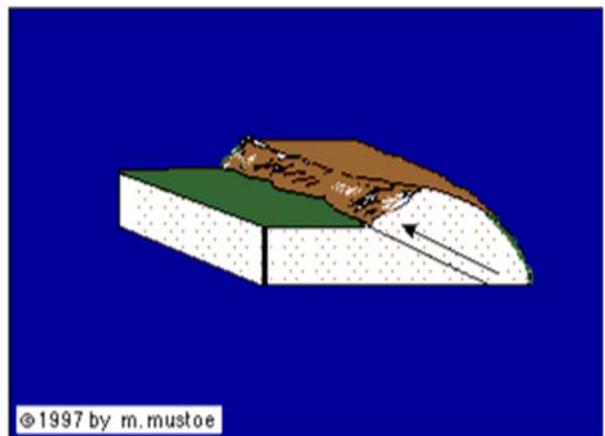


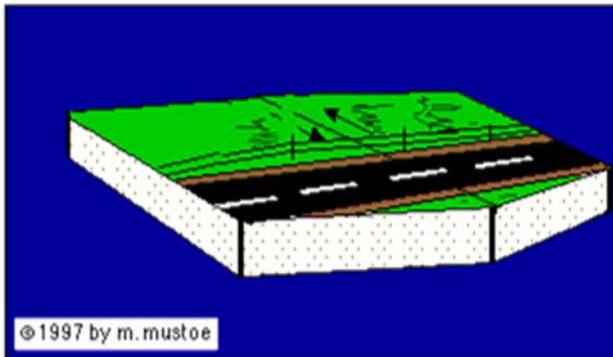
The Reverse Fault

The reverse fault is a where the hanging wall moves up relative to the foot wall. This kind of fault is caused by movement of the fault blocks is toward each other (compression type of stress), not away from each other like in the normal fault.

Thrust Fault

Are usually found with areas of folded surfaces, like the Sinai Massif. These are very much like reverse faults, however the hanging wall has completely slid over and covers the footwall. (also caused by compression stress)





Strike-Slip Fault (Transverse)

Movement on a strike slip fault is horizontal, the blocks rub past each other. (caused by shear type of stress)

Probably the most well known and well studied fault of this type is known as the San Andreas fault of California. This fault is on the boundary between the Pacific and North American Plates. Actually anything crossing this fault zone is either slowly torn apart, or offset. These faults can be very long, the San Andreas is nearly 600 miles long

Other types of Deformation on the Earth's Crust

Rocks under STRESS.

Rocks along active plate boundaries are subjected to physical **stress**. They can experience squeezing (compression), stretching (tension), or pushing in different directions (shear stress). How rocks respond depends on the type of stress, how fast the stress is applied, and the environmental conditions of the rocks, such as their temperature and depth.

Generally, rocks respond to stress in one of two ways: they break, or they bend.

* When a rock breaks, it is called brittle **deformation**.

* When rocks bend or flow, like clay, it is called ductile **deformation**. What conditions do you think would be necessary for rocks to respond like clay?

Compression is the type of stress that occurs when rock is squeezed. Compression occurs when tectonic plates collide (move towards each other). This can cause some **spectacular consequences!** The Sinai Massif is an example of stress occurring on rock layers.

Further illustration:

Assignment -

Go to the following article and read the first 7 pages only, then answer the questions [next page].

[Press the "Ctrl" button and then left click to go to the link]

<http://science.howstuffworks.com/nature/natural-disasters/earthquake3.htm>

