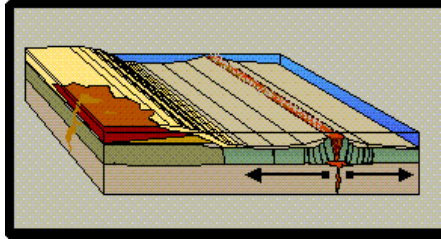


Crustal Deformation

Oceanic basin tectonics

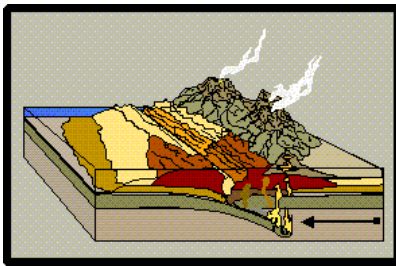


<http://my.excep.com/~acmelas/mountains/geogramsf.html>

Plate Tectonic Settings and Magma

- The type of magma generated in different plate tectonic settings is different
- **DIVERGENT PLATES** and **MANTLE PLUMES** produce magma by partial melting of mantle material due to pressure release
- This magma is **BASALTIC** (mafic) in chemical composition, and the resulting volcanism has distinct characteristics.

Convergent plate boundary



<http://my.excep.com/~acmelas/mountains/geogramsf.html>

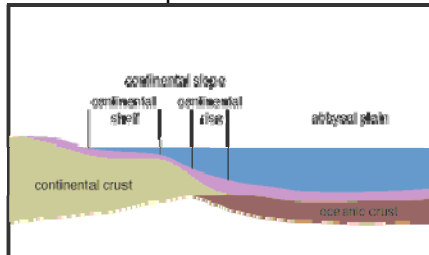
Plate Tectonic Settings and Magma

- Where plates **CONVERGE**, water is driven off the subducting plate, and added to the overlying lithosphere
- This water acts as a **FLUX** to reduce the melting temperature, and cause hot solid rock to melt without a change in temperature
- The lithosphere here is continental (granitic) in character, and the magma generated is **GRANITIC** (felsic) in chemical composition.

Tectonic environment of Magma

- Draw a diagram showing the relationship of tectonic plate interaction and the location of magma formation. Indicate the chemistry of the magma likely to form.

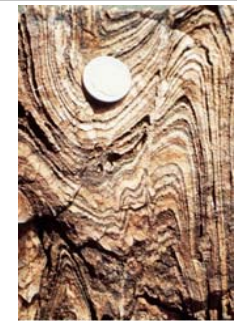
Passive continent-to-ocean lithosphere transition



http://www.odp.usyd.edu.au/odp_CD/slope/index2.html



<http://www.geology.wisc.edu/courses/g112/lecture3.html>



<http://www.uwsp.edu/geofaculty/hefferan/geo320/folds.html>

Image 10: Slide in Overview of Maria Museum, Riverside County, California. Photo by Warren B. Hamilton 1/8/05

