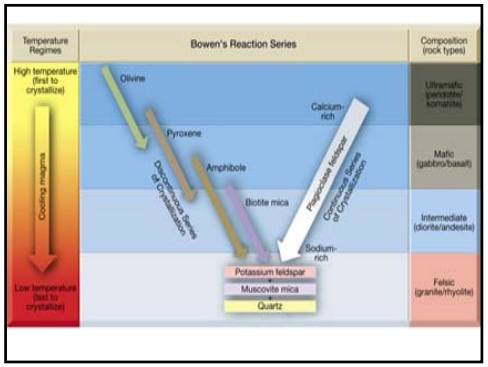
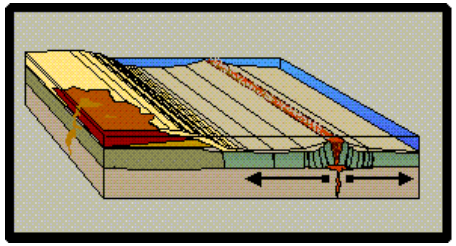
VOLCANOES

Homework due on Wed./Thurs.
I have a few copies left,
or get by moodle or webpage



Oceanic basin tectonics

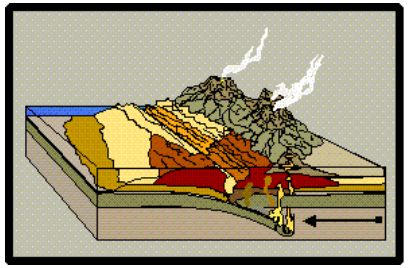


- http://my.execpc.com/~acmelasr/mountains/geogramsnf.html

Icelandic Rift

http://earth.geol.ksu.edu/sgao/g100/plots/0829_09_iceland.jpg

Convergent plate boundary



- http://my.execpc.com/~acmelasr/mountains/geogramsnf.html

http://earth.geol.ksu.edu/sgao/g100tu/plots/1008_composite_volc_Fujiyama.jpg

Tectonics of Magma

- Basaltic magma
  - From partial melting of mantle
  - Occurs at oceanic ridges and mantle plumes
  - More dense: makes oceanic crust
- Granitic magma
  - From melting of crust, with water as flux
  - Occurs at convergent boundaries
  - Less dense: makes continental crust

http://smart.tin.it/domsky/4/fotos-imagenes/immagini/1/2002_07_28_archive.html

http://gaia.busanedu.net/~creative/2002/cyber/rock/pages/20651_pahoehoe.htm

http://www.windows.ucar.edu/earth/geology/images/aa_pahoehoe_lg.jpg

http://www.fhvnp.org/albums/seminar_1142006.htm

http://www.ncusd203.org/north/depts/science/slack/mt_helens.html

http://www.billystudio.com/photo_album/Big_Island/Volcano_Park_Slide/pages/Klauea%20Spatter%20Cone%201984.htm

http://volcanoes.usgs.gov/Products/Pglossary/bomb.html

http://www.volcanoimages.com/krakatau/krakatau.html

Terms

- **Viscosity**: resistance to flow
- **Pyroclastic**: material blown into the air by volcanic eruption
- What is the relationship of lava viscosity to pyroclastic production by a volcano?
- Greater viscosity=more likely to have pyroclastic material

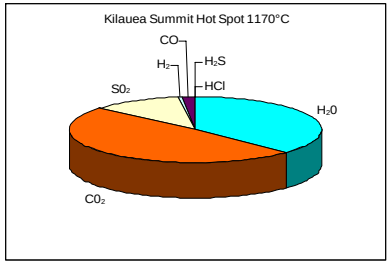
Table 8.1 Magmas have different compositions, which cause their properties to vary

Composition	Silica Content	Viscosity	Gas Content	Tendency to Form Pyroclastics	Volcanic Landform
Basaltic (Mafic)	Least (~50%)	Least	Least (1–2%)	Least	Shield Volcanoes Basalt Plateaus Cinder Cones
Andesitic (Intermediate)	Intermediate (~60%)	Intermediate	Intermediate (3–4%)	Intermediate	Composite Cones
Rhyolitic (Felsic)	Most (~70%)	Greatest	Most (4–6%)	Greatest	Pyroclastic Flows Volcanic Domes

- Volcanic gas information below

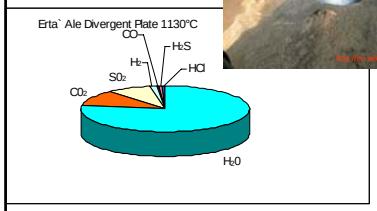
http://volcanoes.usgs.gov/Hazards/What/VolGas/volgas.html

Volcanic gas composition



http://volcanoes.usgs.gov/hazards/gas/index.php

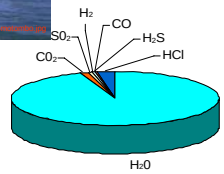
Volcanic gas composition



http://volcanoes.usgs.gov/hazards/gas/index.php

Volcanic gas composition

Momotombo Convergent Plate 820°C



http://volcanoes.usgs.gov/hazards/gas/index.php

http://volcanoes.usgs.gov/Products/Pglossary/ShieldVolcano.html

http://gaia.busanedu.net/~creative/2002/cyber/rock/pages/20651_pahoehoe.htm

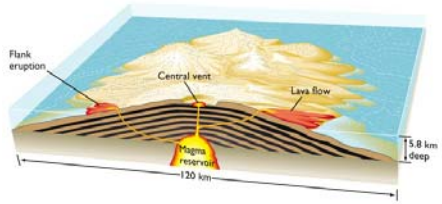
http://www.mistermoose.org/rtw/usa/hawaii/pahoehoe.html

http://www.windows.ucar.edu/earth/geology/images/aa_pahoehoe_lg.jpg

http://news.cnet.com/2300-13576_3-10001182-2.html

http://www.doubledeckerpress.com/skylight.htm

http://www.globalgeografia.com/album/oceania.htm



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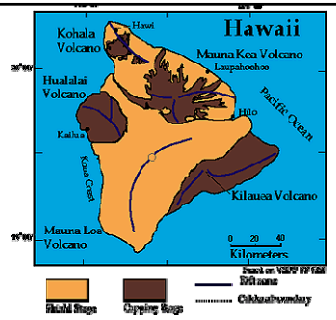
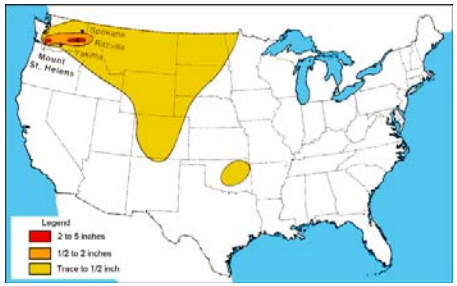


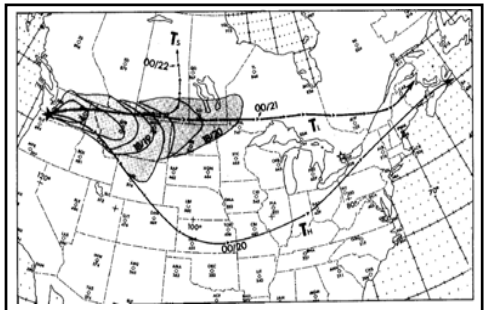
http://volcano.und.nodak.edu/vwdocs/volc_images/north_america/hawaii/big_island.html

http://www.daviddarling.info/childrens_encyclopedia/Dig_a_Hole_to_China_Chapter1.html

http://www.geology.mcmail.com/volcanoes.htm

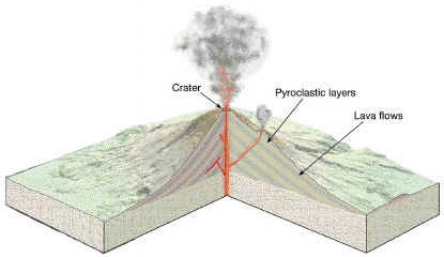


http://ve.ou.edu/weaver/st_helens/sthelens.htm



http://www.cmos.ca/Ao/articles/v190207.pdf

http://lvo.wr.usgs.gov/gallery/30714277-048_caption.html



http://courses.unt.edu/hwilliams/GEOG_3350/examreviews/volcanic_structures.htm

Blasted summit of Mt. St. Helens

http://ve.ou.edu/weaver/st_helens/sthelens.htm

Whaleback dome in Mt. St. Helens

http://ve.ou.edu/weaver/st_helens/sthelens.htm

Mt Meager, British Columbia, Canada

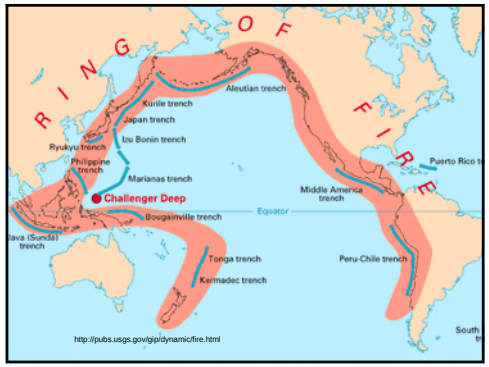
Glass cliff of Mt Meager eruption 2500 ybp

- Pumice deposit of Mt. Meager

http://www.geog.utah.edu/~hmiller/photos/Mt_Hood.jpg

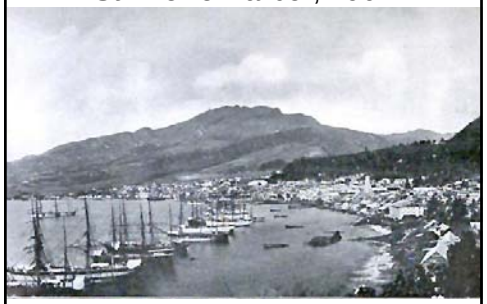
http://ve.ou.edu/weaver/st_helens/sthelens.htm

http://earth.geol.ksu.edu/sgao/g100tu/plots/1008_composite_volc_Fujiyama.jpg

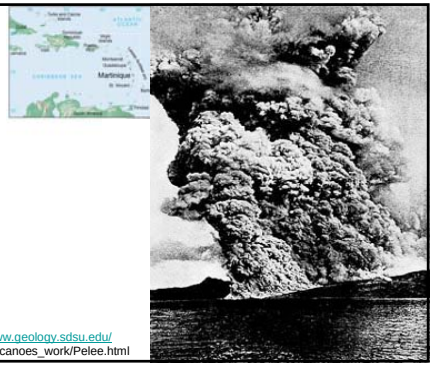


http://pubs.usgs.gov/gip/dynamic/fire.html

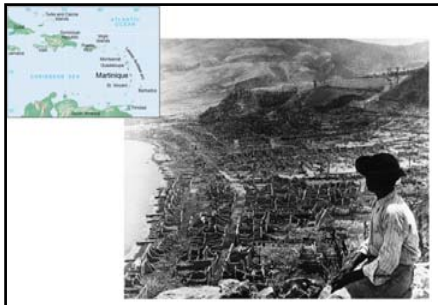
St. Pierre Harbor, 1902



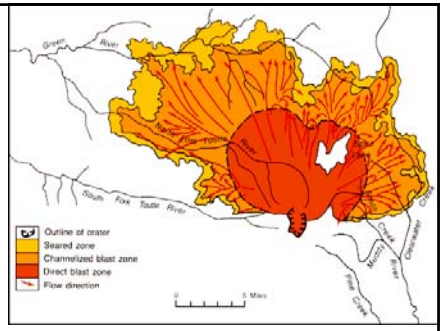
http://rolfgross.dreamhosters.com/LafcadioHearn-GE/MartiniqueStPierre-MtPeleeLifeLett1.jpg



http://www.geology.sdsu.edu/how_volcanoes_work/Pelee.html



Video of nuee ardente: http://www.bedford.k12.ny.us/flhs/science/apes/images.html
http://www.geo.mtu.edu/volcanoes/west.indies/soufriere/govt/images/051296/pf_sea.mpg

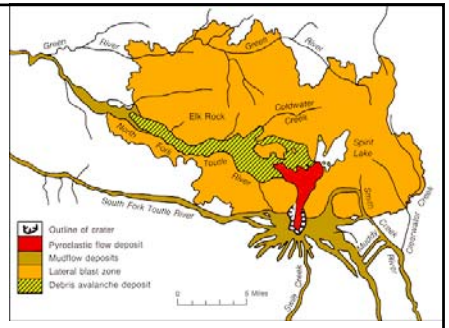


http://ve.ou.edu/weaver/st_helens/sthelens.htm

Lahar Mt St Helens

http://www.geology.sdsu.edu/how_volcanoes_work/Lahars.html

Link to Nevado del Ruiz
http://volcanoes.usgs.gov/Hazards/What/Lahars/RuizLahars.html



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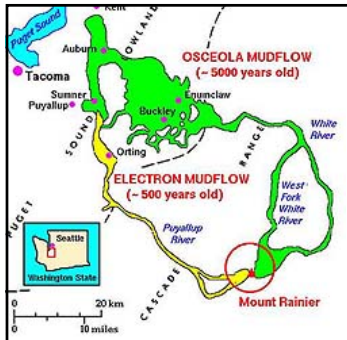
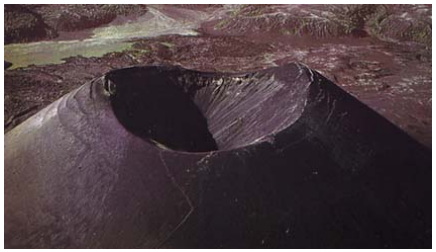


Rainier Lahars

http://www.geology.sdsu.edu/how_volcanoes_work/Lahars.html

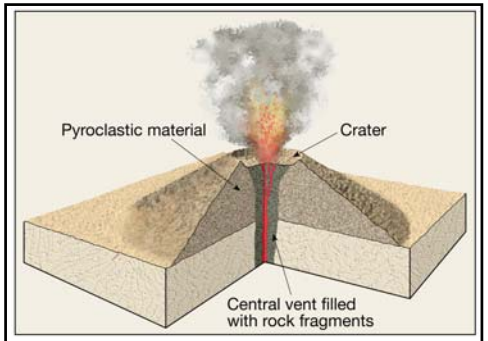


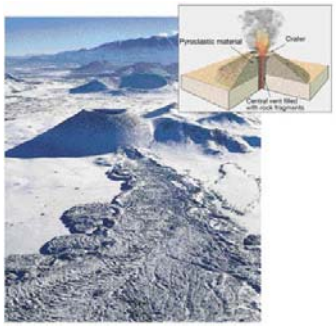
http://www.bol.ucla.edu/~asuarezn/Paricutin_page.html

http://www.greenville.k12.oh.us/volcano/cindercone.html

Parícutin

http://www.greenville.k12.oh.us/volcano/cindercone.html





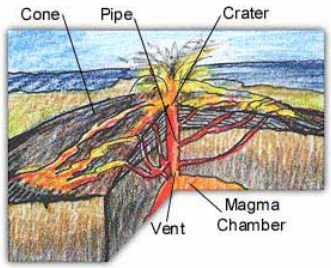
http://courses.unt.edu/hwilliams/GEOG_3350/examreviews/volcanic_structures.htm

http://www.bol.ucla.edu/~asuarezn/Paricutin_page.html

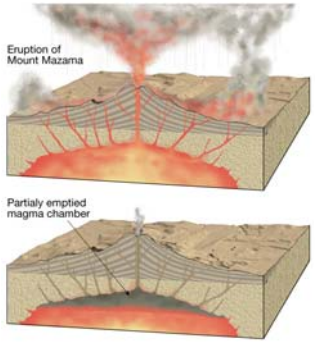
http://rst.gsfc.nasa.gov/Sect13/Sect13_4d.html

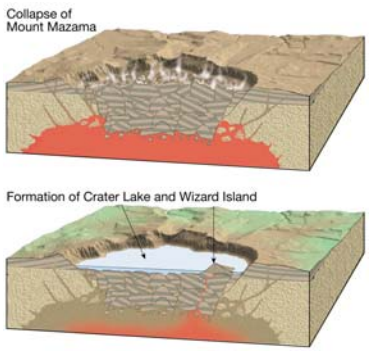
Volcanic features

- Fissure
- Pipe
- Vent
- Opening at summit may be crater or caldera



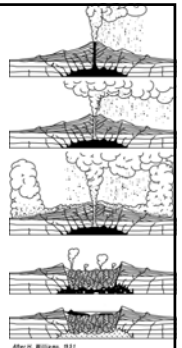
http://www.cartage.org.lb/en/themes/sciences/earthscience/Geology/volcanoes/structure/structure2.jpg



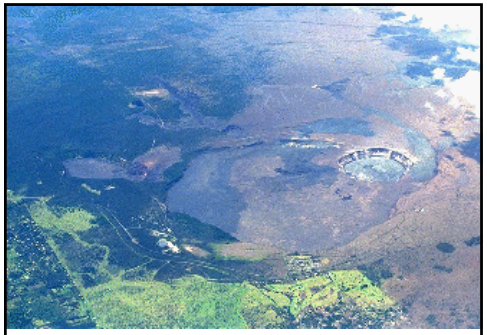


Collapse caldera formation

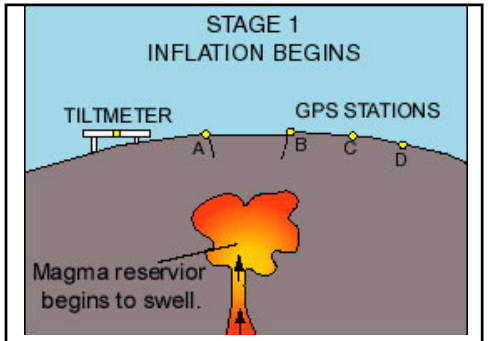
- Like Crater Lake



http://www.tulane.edu/~sanelson/geol204/volcandforms.htm



http://saftp.soest.hawaii.edu/space/hawaii/nav/ap.kilauea.html



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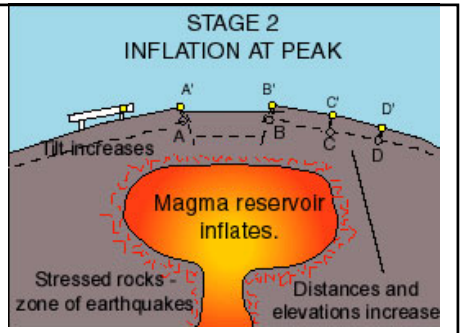

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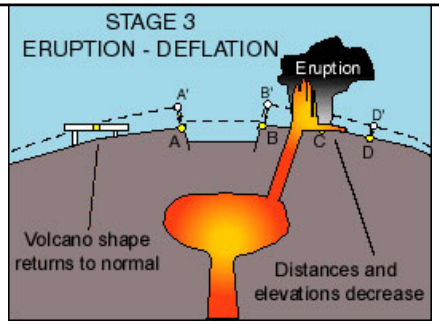
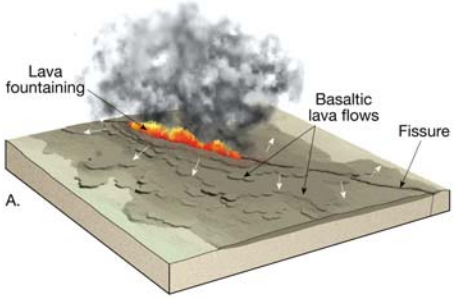
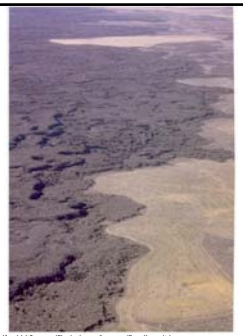


http://hvo.wr.usgs.gov/howwork/subsidence/inflate_deflate.html

http://ve.ou.edu/weaver/votw/valles.htm

http://www.uhh.hawaii.edu/~csav/gallery/decker/hawaii_curtain_of_fire.php





http://www.bedford.k12.ny.us/lhs/scienceimages/floodbasalt.jpg

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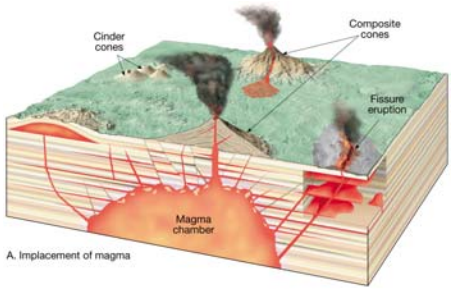
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