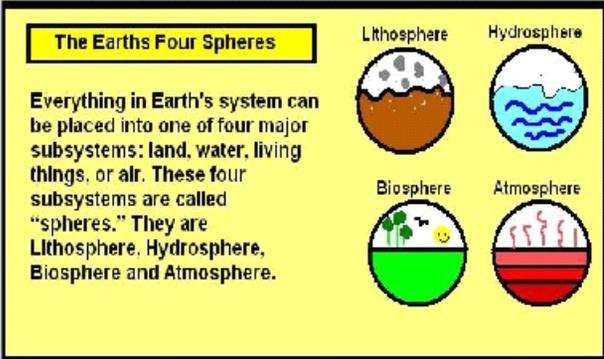


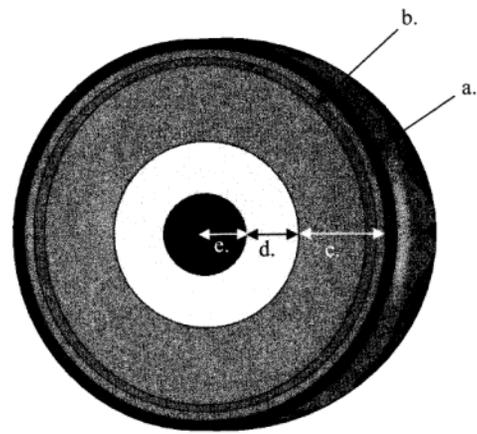
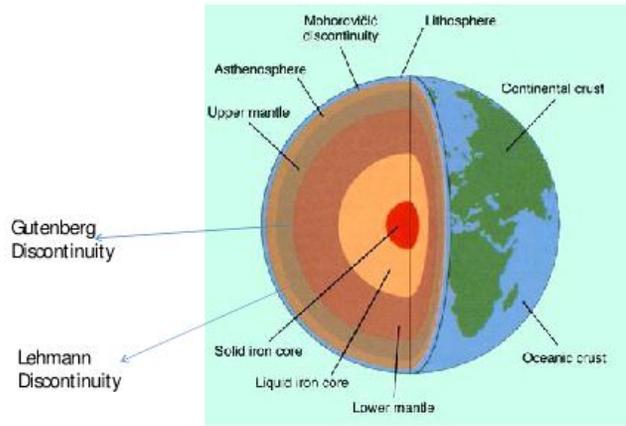
M06 Lecture - revision notes ready, VT:X

Friday, July 16, 2010
7:03 AM

VoiceThread	http://voicethread.com/share/816242/
Review	http://voicethread.com/share/816532/

Items in red are on the exam but are not mentioned in the lecture recording !

Slides	Notes
 <p>Physical Science</p> <p>Earth and the Lithosphere</p>	<p>Trial</p> <p>One week - Thanksgiving break</p> <p>Multiple attempts on exam but not the extra hints given</p>
<h2>Spheres of the Earth</h2>  <p>The Earth's Four Spheres</p> <p>Everything in Earth's system can be placed into one of four major subsystems: land, water, living things, or air. These four subsystems are called "spheres." They are Lithosphere, Hydrosphere, Biosphere and Atmosphere.</p>	<p>Lithosphere - rock and soil (we will focus on the crust, mantle and core in this module)</p> <p>Hydrosphere - water atmosphere</p> <p>Biosphere - life</p>



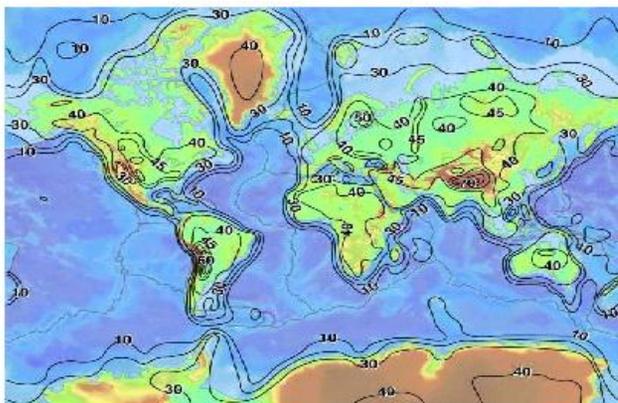
Important ones for exam include where the Moho is in relation to the others (between the crust and the asthenosphere) and also ...

crust	a
asthenosphere	b
mantle	c
outer core	d
inner core	e

See if the students can assemble the layers from memory.

- Crust
- Moho
- Asthenosphere
- Mantle
- Core (outer and inner)

The Crust



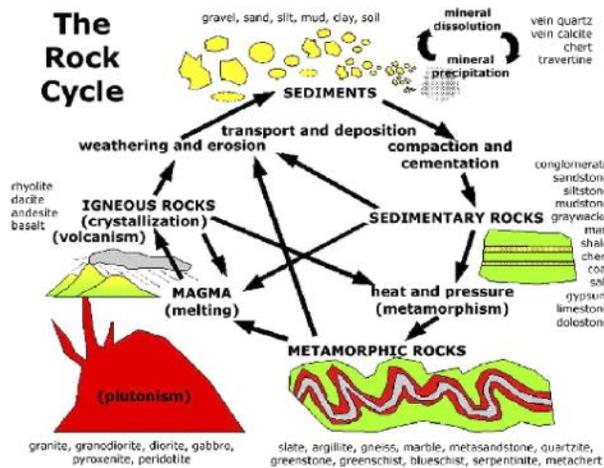
Depth of the crust chart

Rock

- *Rock—A naturally formed material composed of a mineral or minerals; any hard consolidated material derived from the Earth (Kesler, 1994; Hudson, Fox, and Plumlee, 1999).*

Mineral

- A mineral is a substance that is (1) made of a single element like gold (Au) or a compound of elements like salt (NaCl) and (or) (2) a building block of rock (for example, granite is composed primarily of the minerals quartz and feldspar). Minerals may be metallic, like gold, or nonmetallic, such as talc. Oil, natural gas, and coal are generally considered to be “energy minerals.”

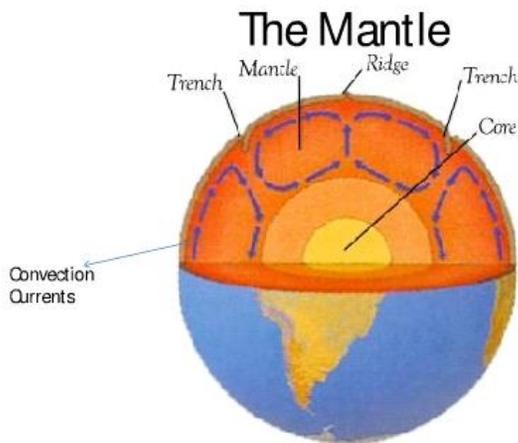


Sedimentary - soil and rock particles fuse into a rock that is a combination of inorganic materials

Extra Credit Assignment

- Visit website
www.learner.org/interactives/rockcycle/index.html
- Read the pages
- Take the quiz
- Print and submit the quiz for extra credit

<http://www.learner.org/interactives/rockcycle/index.html>



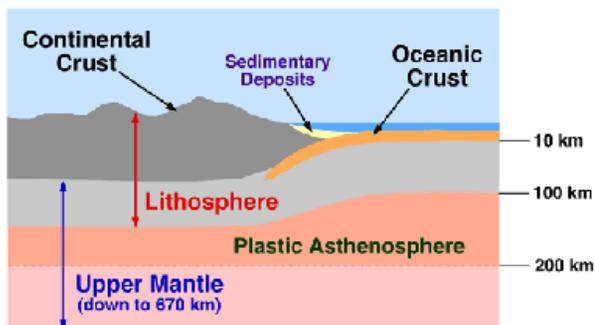
How do we know about the mantle? Man hasn't drilled down that far.

Seismographs - sound waves

Deeper look at the mantle:

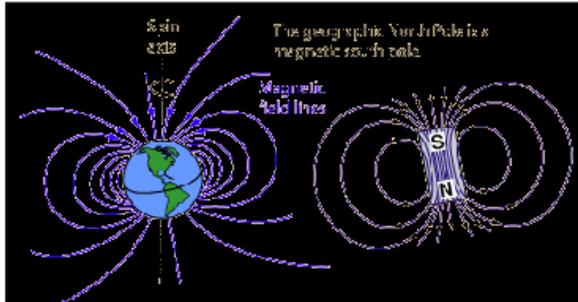
Plastic rock - not solid nor entirely liquid. like cornstarch and water but very hot. The heat differentials cause convection currents.

The Lithosphere



Note what is the lithosphere and the asthenosphere.

Earth's Magnetic Field



As the earth spins the magnetic waves form. It forms an electrical current

Controversy - What causes the electric current:

Dynamo Theory - Belived by the majority of scientists. Spin causes the Electrical flow in the core

Rapid Decay Theory - The electric current is caused by the way the earth was formend and because the earth resists the flow of this current heat is generated and the current is weakened.

Dynamo would predict a changing current and the Rapid decay will predict a weakening one. Data - 150 years shows weakening in steady decline.

Dynamo would predict that the magnetic poles could reverse which we see evidense of in things that respond to magnetic fields. Rapid decay can allow for it as well, but it would be as a result of cataclysmic volcanic and geological activity - like in the flood.

Other planets:

Some don't have magnetic fields - Rapid decay has been the best match to the plantes that do and do not have one. Mars and Mercury are an example

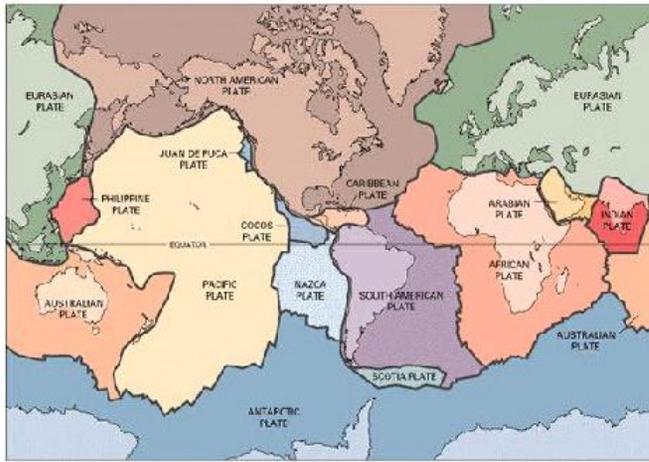
With so much evidence for rapid decay why isn't it the popular one among scientists - Earth less than 10,000 yrs old.

Textbook leans toward the Rapid Decay Theory



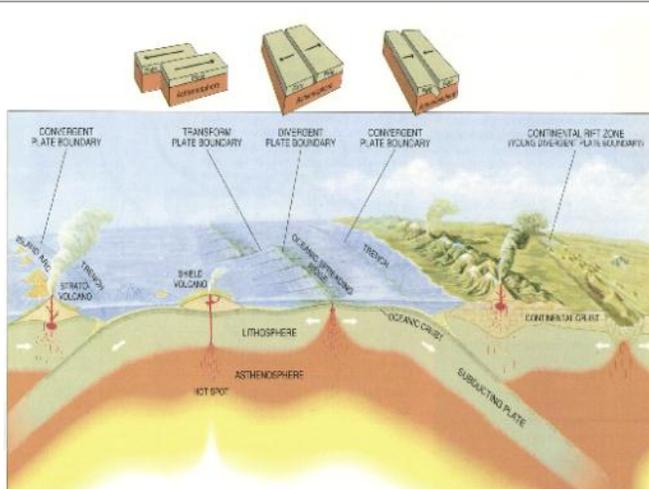
THE purpose:

Solar wind and cosmic waves from the sun impact the magnetic waves causing a bow shock proviving protection,



Theory - Pangea

Flood - opening up of the earth and the plates seperated



Plates can slide back and forth, plate sliding, can cause heat and earthquakes

Colision - convergent plate boundary - force buckles because they hit head on

Divergent - plates move away from each other - trench or volcanos often in the middle of the earth's ocean floor

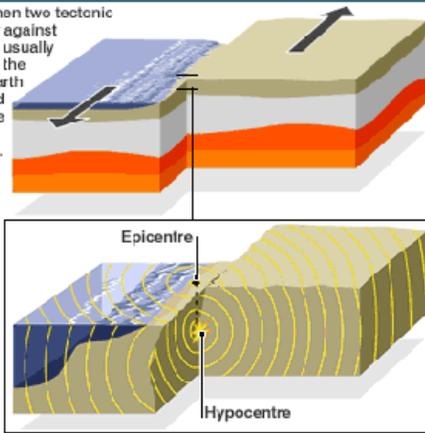
Pangea



skip

EARTHQUAKES

Earthquakes occur when two tectonic plates move suddenly against each other. The rocks usually break underground at the hypocentre and the earth shakes. Waves spread from the epicentre, the point on the surface above the hypocentre. If a quake occurs under the sea it can cause a tsunami.



These happen everyday on the earth.

Safety if you live in a prone area

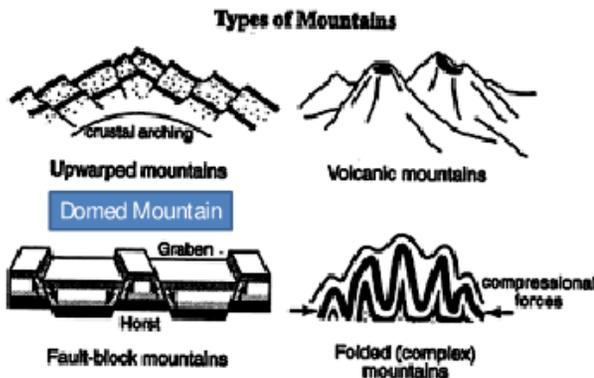
Fault - Two plates have friction that releases causing the quake.

Epicenter - directly above the earthquake.

Richter Scale - Measures the force of the quake. Each step is a factor of 32 in energy. If a quake is 6 on the richter and another was 4, to find the differences in energys take 32×32 because there is a difference of two between them. The answer would be 1024 times.

If in the ocean - Tsunami wave forms

Types of Mountains



First two are volcanic in nature -

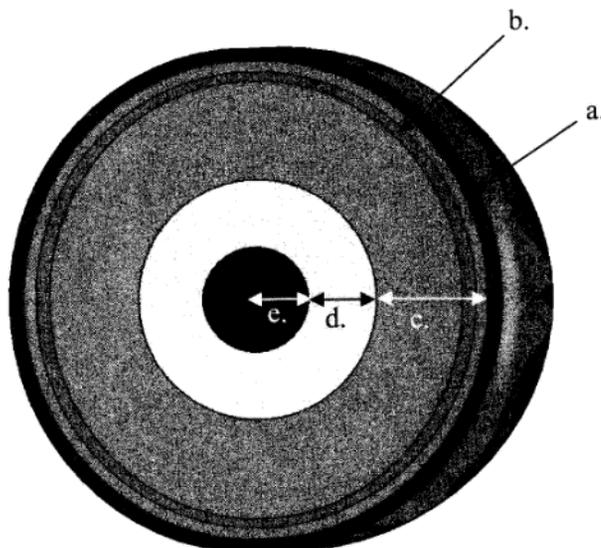
Domed - unwarped mountain - magma is contained in the mountain

Volcanic mountain - magma is released through a vent. Mt. St. Helens

Non-volcanic -

Folding Mountains - Crust buckles - structurally different. There are many folds - Appalachian and Alps are examples

Fault block - Faultline between the masses and one will be downward moving. Sierra Nevada myns and the Grand Tetons are examples



See if the students can assemble the layers from memory.

crust	a
asthenosphere	b
mantle	c
outer core	d
inner core	e

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Module 6 exam: <http://www.virtualhomeschoolgroup.com/mod/quiz/view.php?id=15968>

www.learner.org/interactives/rockcycle/index.html

www.learner.org/interactives/rockcycle/index.html

2011-12 Quiz link: <http://www.virtualhomeschoolgroup.com/mod/quiz/view.php?id=17641>