

Introducing Earth



Earth System

Constant flow or cycling of matter is driven by energy

Energy is the ability to do work

Two main sources heat from the sun and heat leaving the earth



Atmosphere

Geosphere

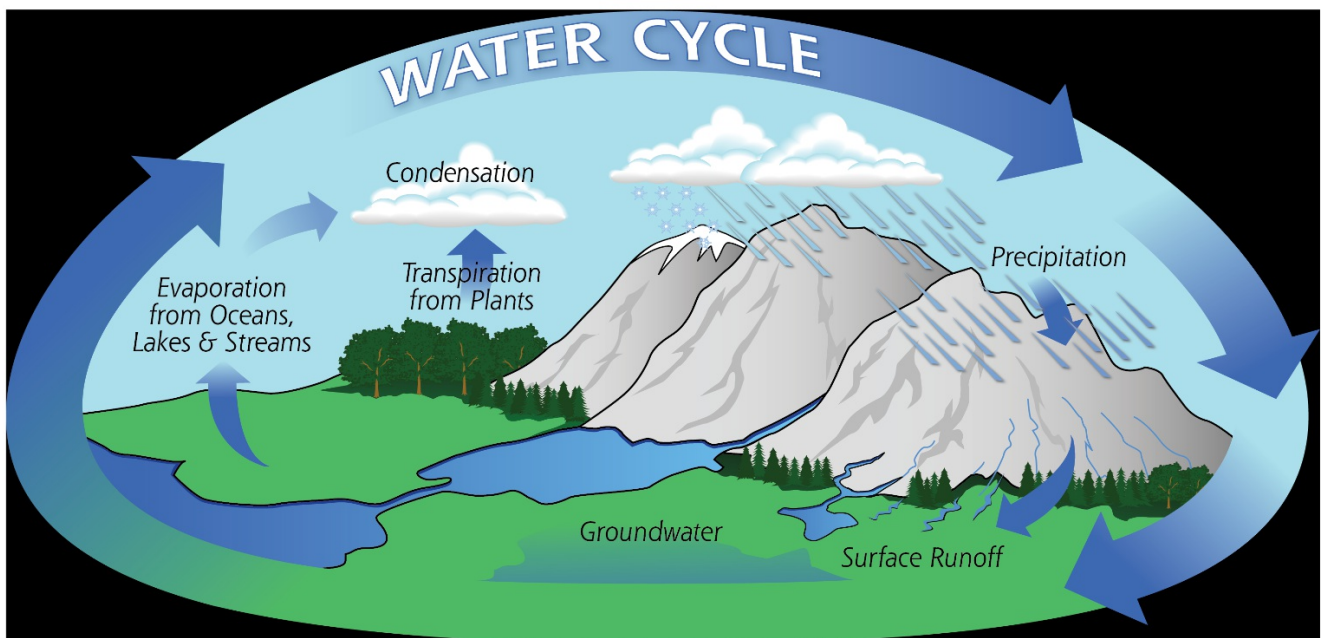
Biosphere

Hydrosphere



<https://www.youtube.com/watch?v=BnpF0ndXk-8>

Feedback occurs in the system like the water cycle



Constructive and Destructive Forces

Constructive

Destructive



<https://www.youtube.com/watch?v=MESrOsnTWk8>

These constructive and destructive Forces are linked



Mount Saint Helens

1980

Deadliest and most economically destructive volcanic event in the history of the United States.

Fifty-seven people were killed

250 homes, 47 bridges, 15 miles (24 km) of railways, and 185 miles (298 km) of highway were destroyed.

A massive debris avalanche triggered by an earthquake measuring 5.1 on the Richter scale caused an eruption

Reduced the elevation of the mountain's summit from 9,677 ft (2,950 m) to 8,363 ft (2,549 m)

Left a 1 mile (1.6 km) wide horseshoe-shaped crater.

The debris avalanche was up to 0.7 cubic miles (2.9 km³) in volume



Volcanic Eruptuion

- 1. When did it erupt?**
- 2. Where?**
- 3. How many people were injured/ killed?**
- 4. What was the damage?**
- 5. What caused the eruption?**
- 6. How did it affect the volcanoe/ mountain?**
- 7. How big was the eruption?**

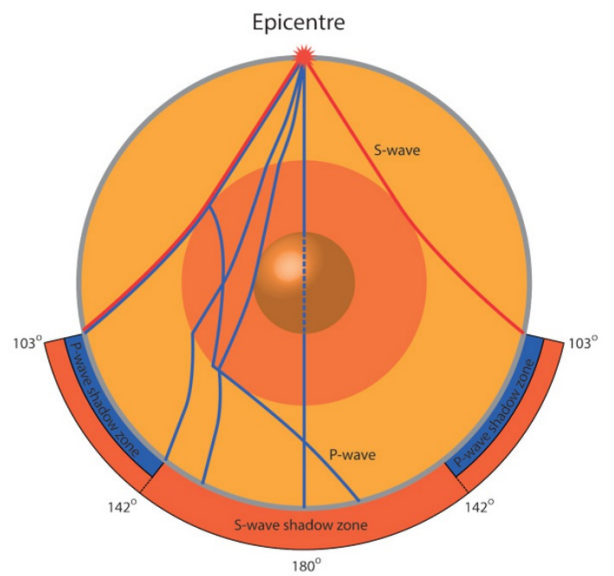


Earths Interior

The two main types of evidance about the interior of the earth direct and indirect:

Direct - Rock Samples

Indirect - Seismic Waves



<https://www.youtube.com/watch?v=yOGOKCK17a4>

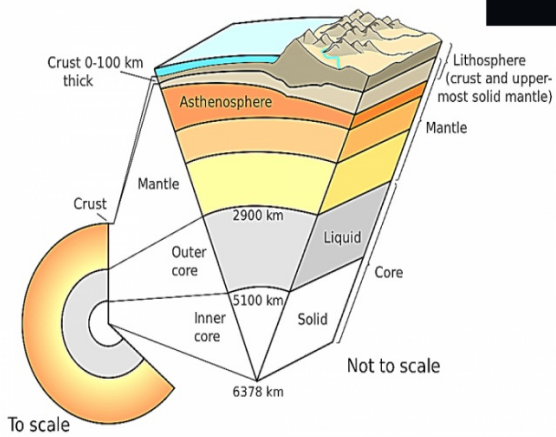
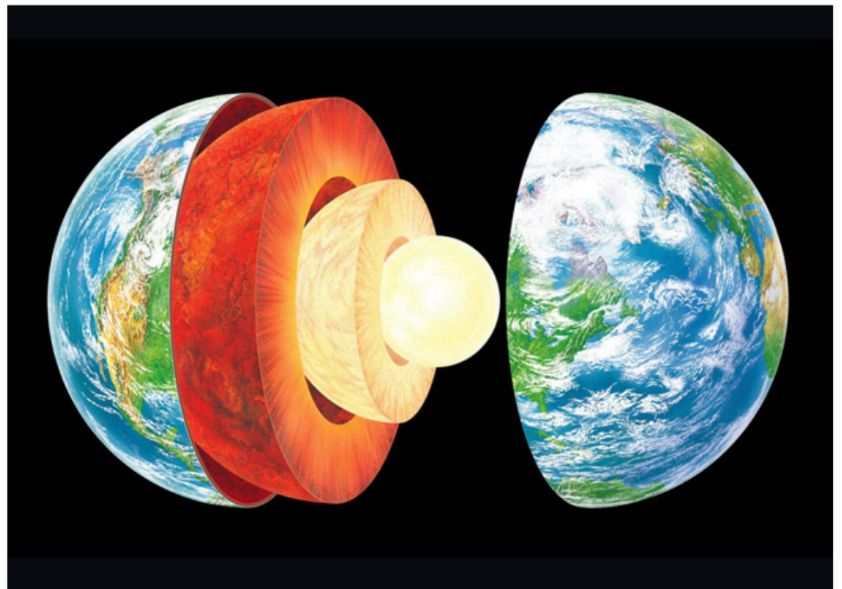
Earths Layers:

Size

Composition

Texture

Pressure

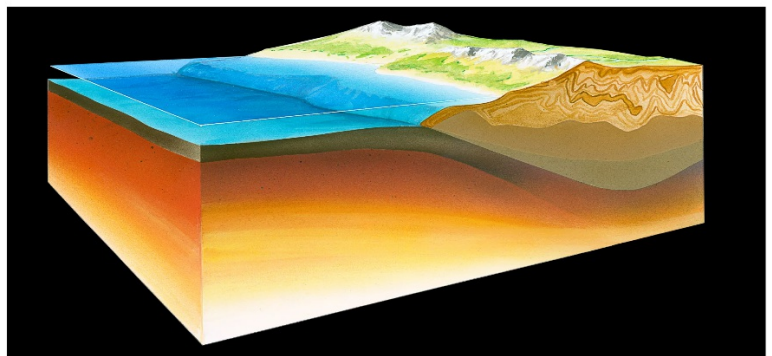
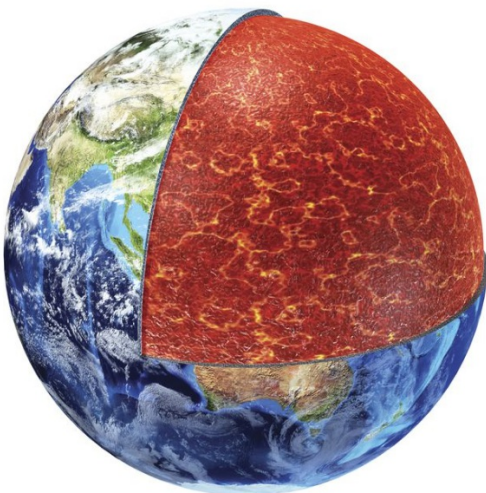
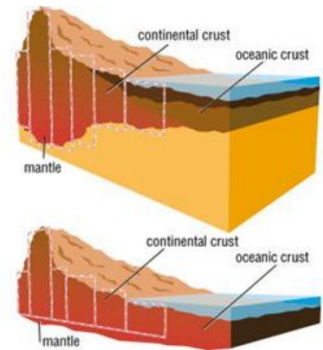


The Crust

Layer of solid rock that includes both dry land and ocean floor.

Continental Crust -

Oceanic Crust -



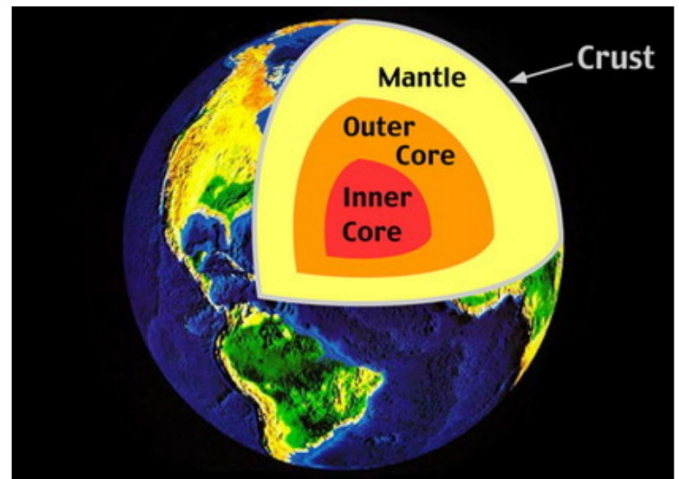
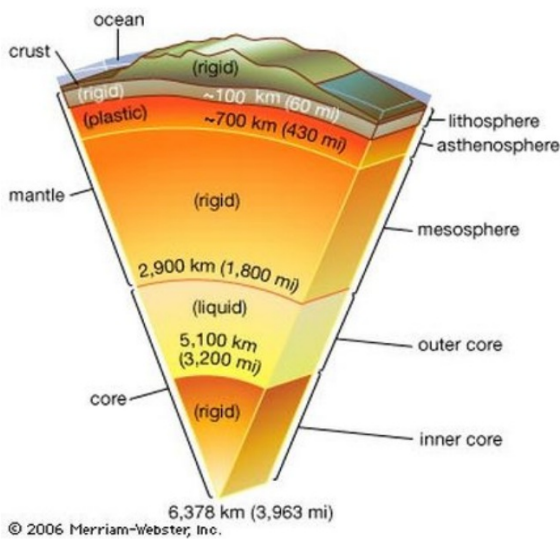
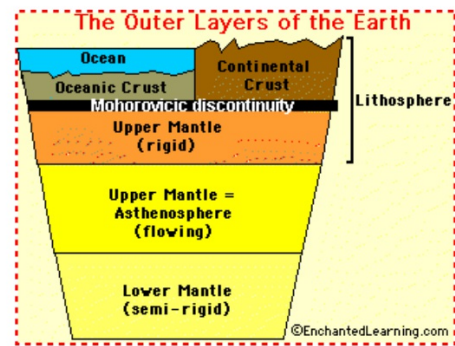
The Mantle

Made of hot solid rock, divided into layers based on physical characteristics of the layers. Overall nearly 3000 kilometers thick.

Lithosphere

Asthenosphere

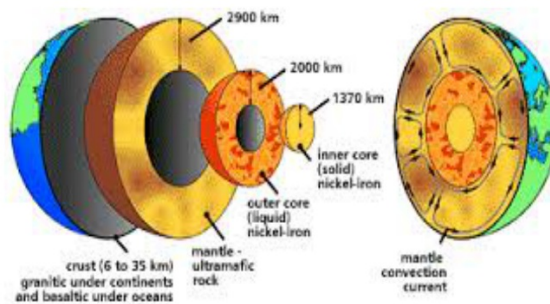
Mesosphere



The Core

Mostly made of iron and nickel. It has two parts the liquid outer core and solid inner core.

Outer Core



Inner Core

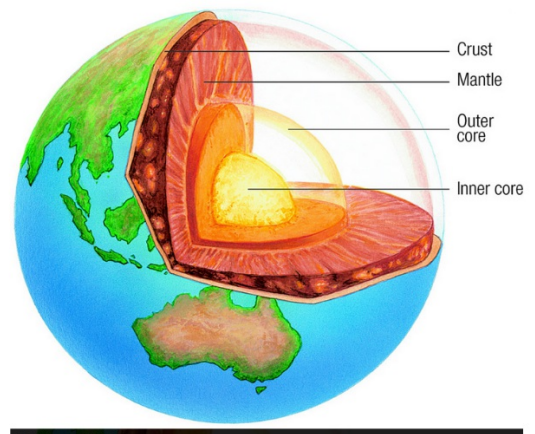
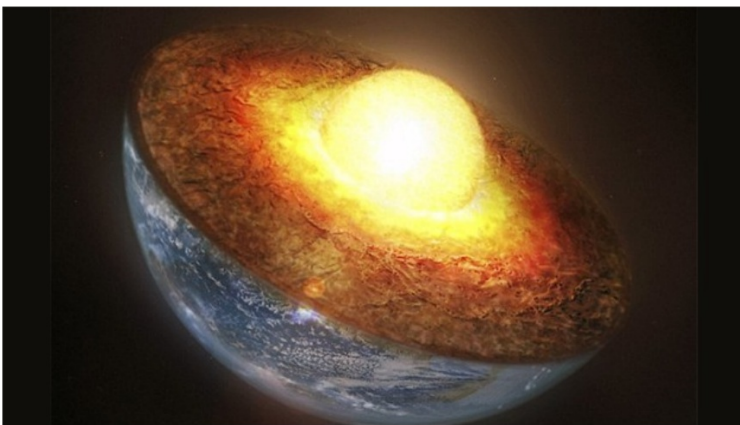
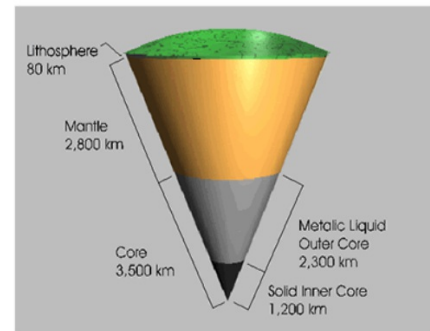
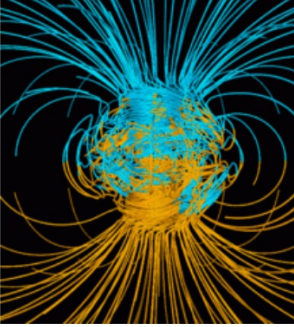
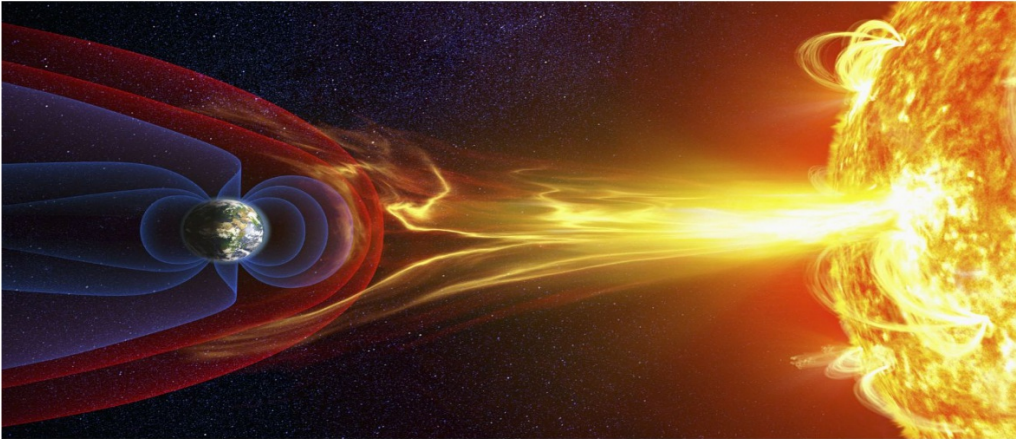
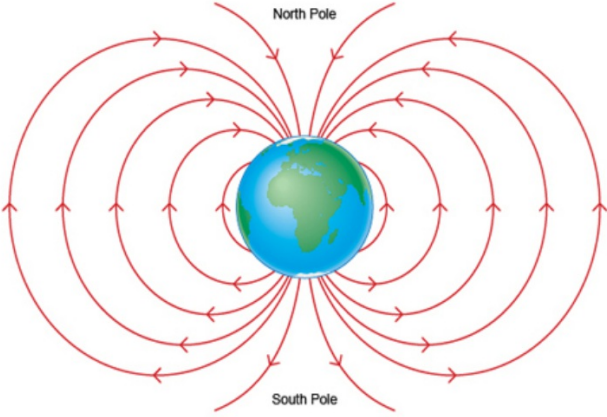
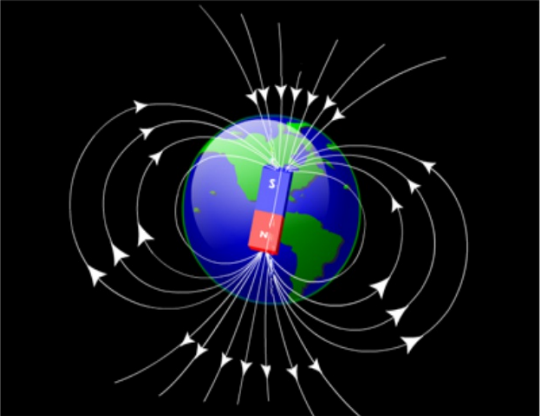


Fig 6.5 Layers of the Earth.

The core and Earth's magnetic field



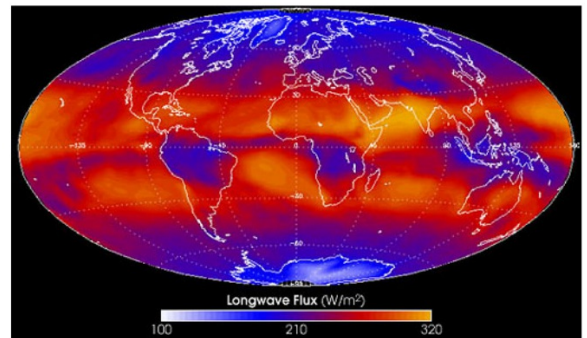
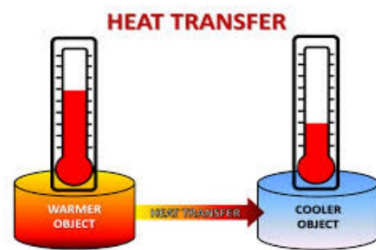
<https://www.youtube.com/watch?v=URN-XyZD2vQ>

Heat transfer:

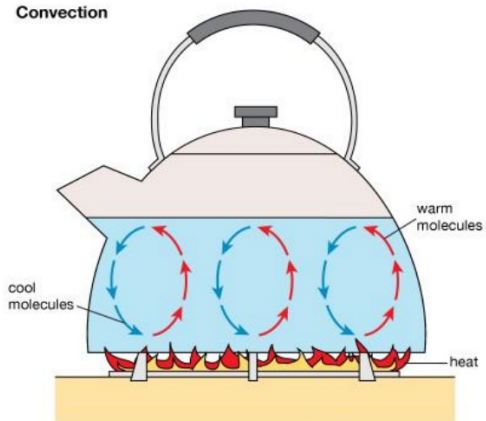
Radiation

Conduction

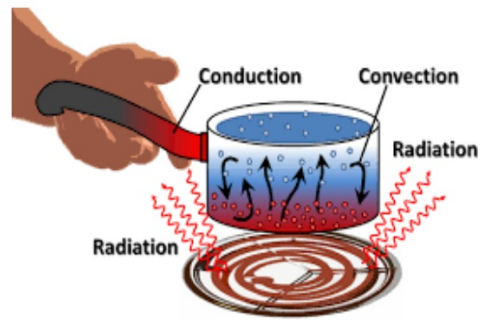
Convection



Convection



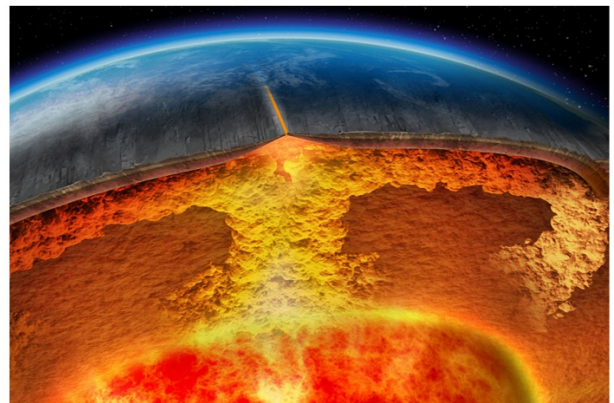
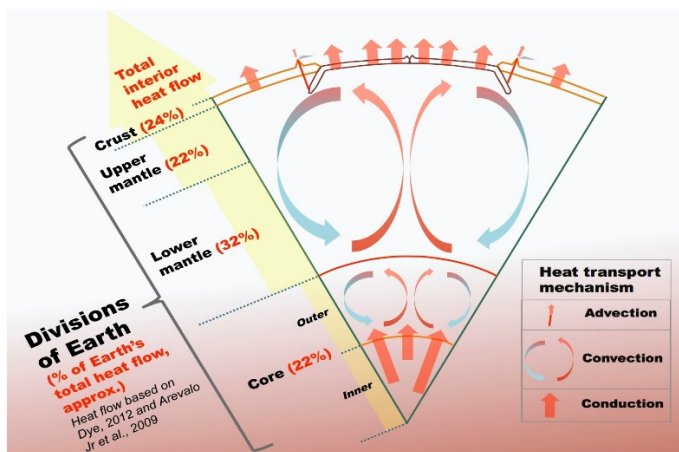
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https://www.youtube.com/watch?v=Atnjo7dD_bA

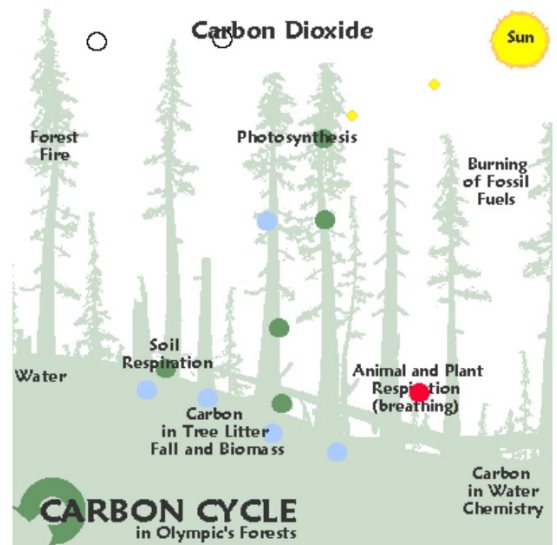
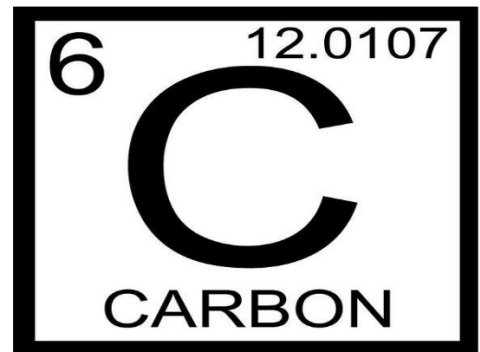
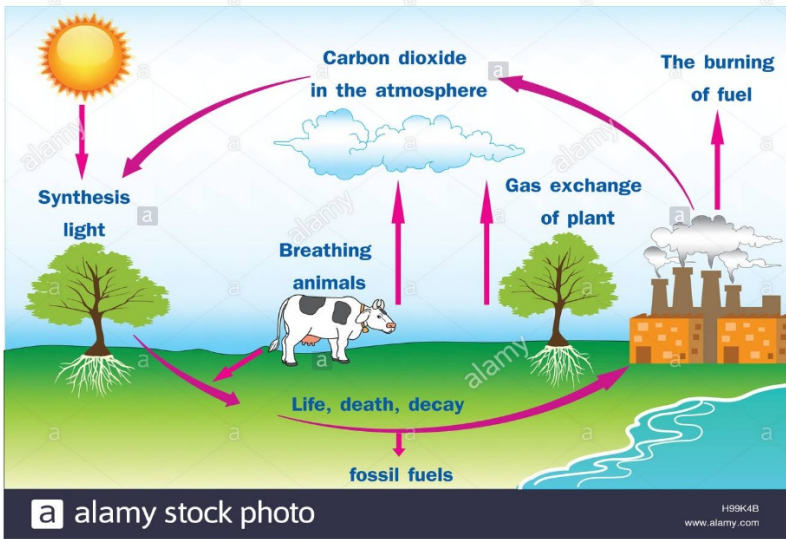
Earth's Convection Currents

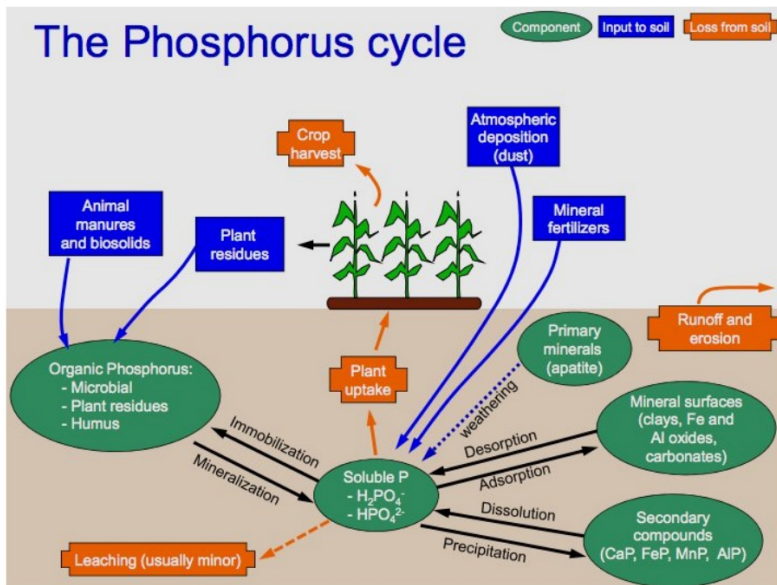
Heat from the core and the mantle itself causes convection currents in the mantle.



<https://www.youtube.com/watch?v=ryrXAGY1dmE>

Carbon cycle



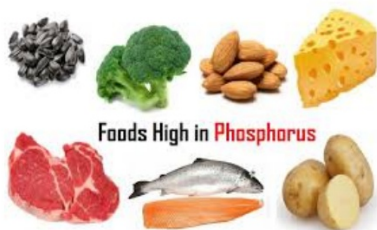


phosphorus

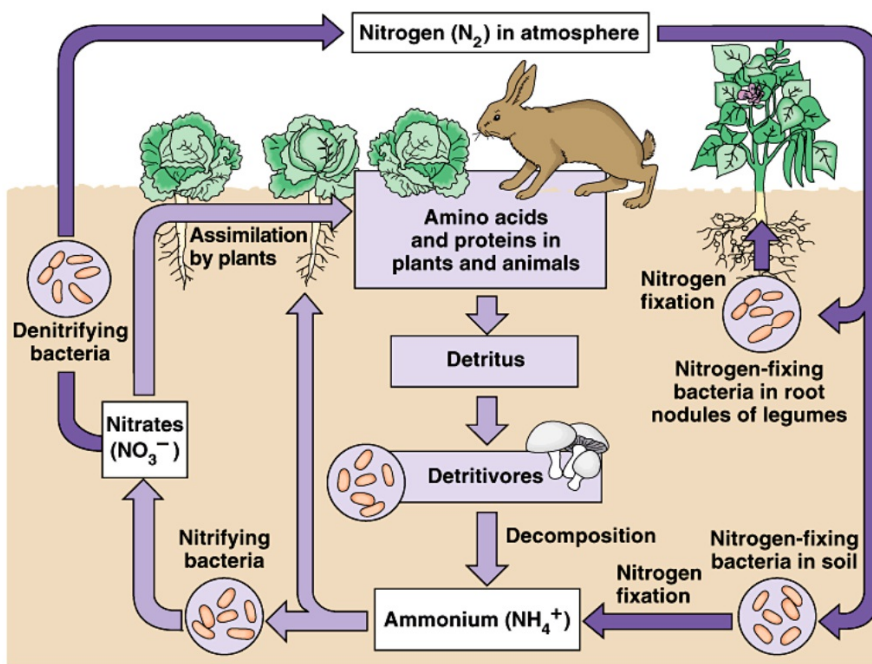
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Nitrogen Cycle



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