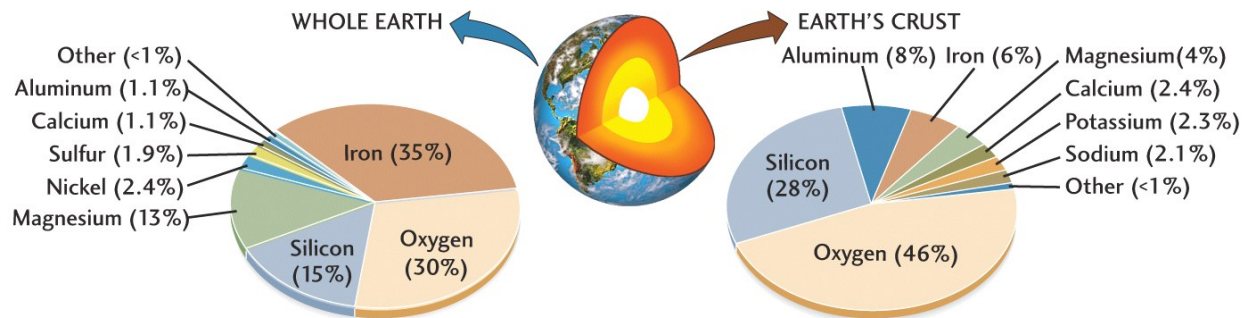


Review for Midterm 1, Fall 2009:

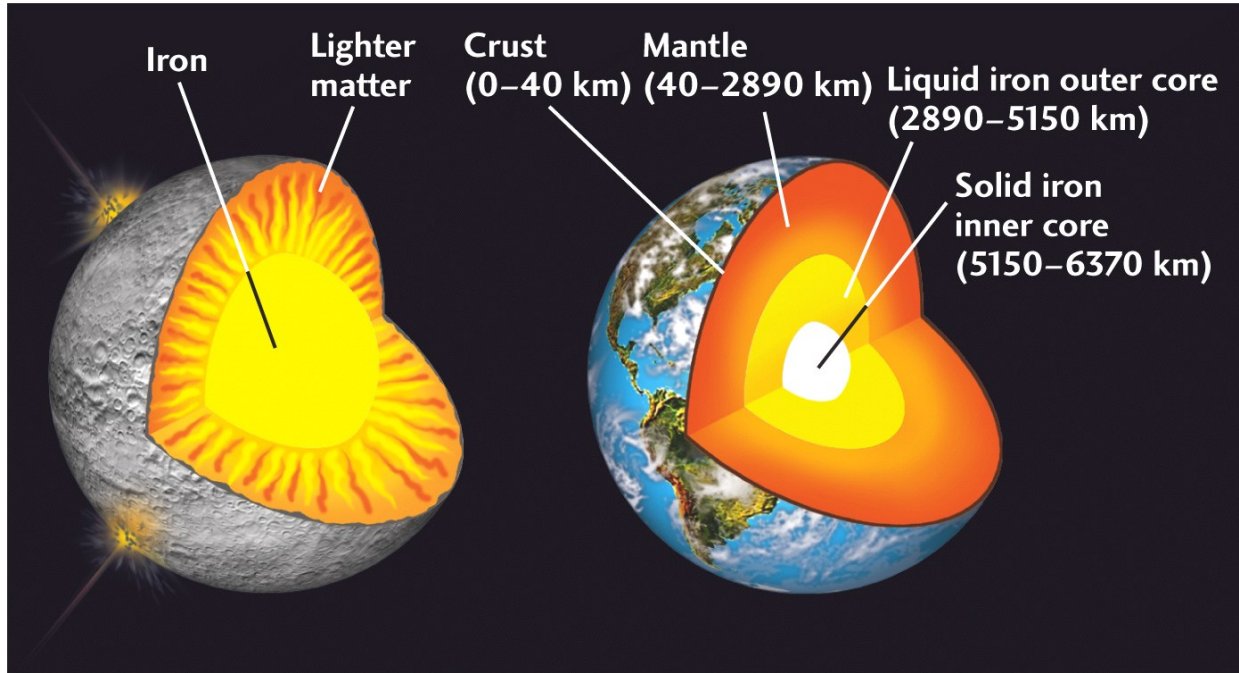
How old is the Earth?

- (a) 5 billion years old
- (b) 1 million years old
- (c) 10,000 years old
- (d) 20 billion years old

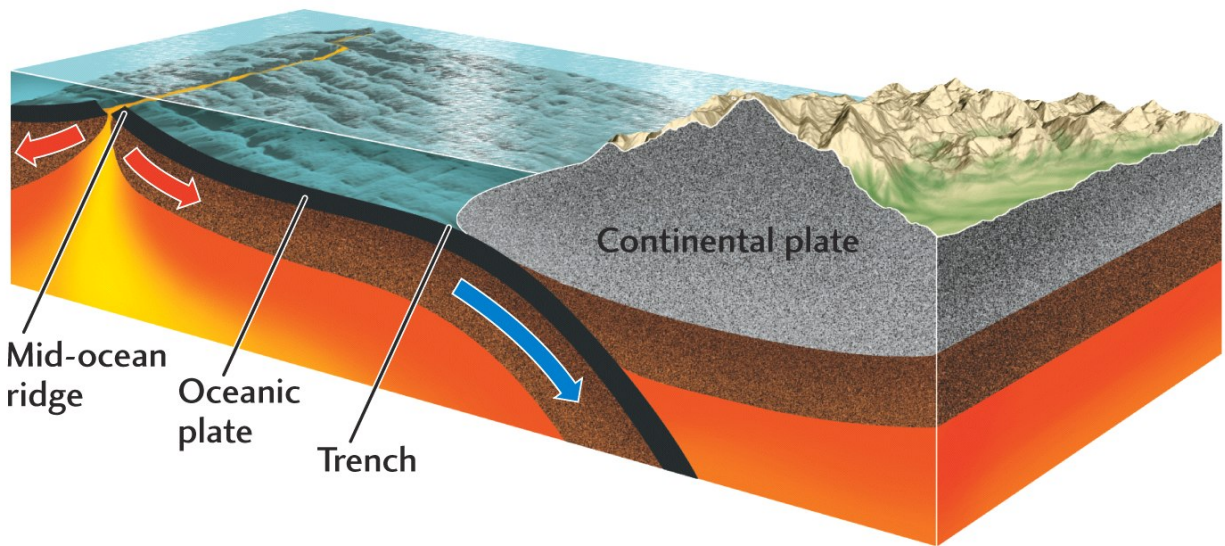
Name the three most abundant elements in the earth's crust and in the earth:



Describe the density and composition of the main layers of the earth



What forces move the tectonic plates?

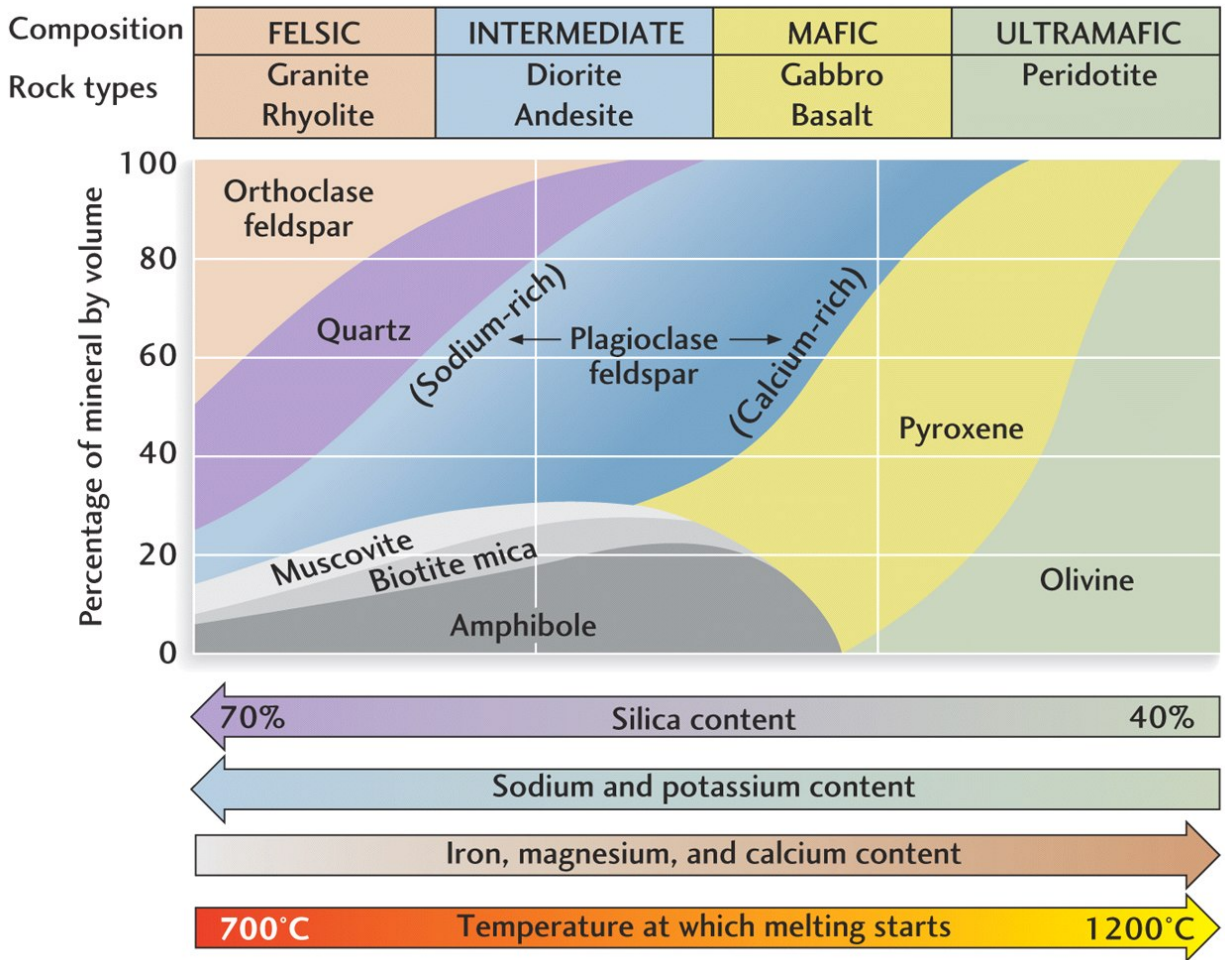


What are the main parts of an atom?

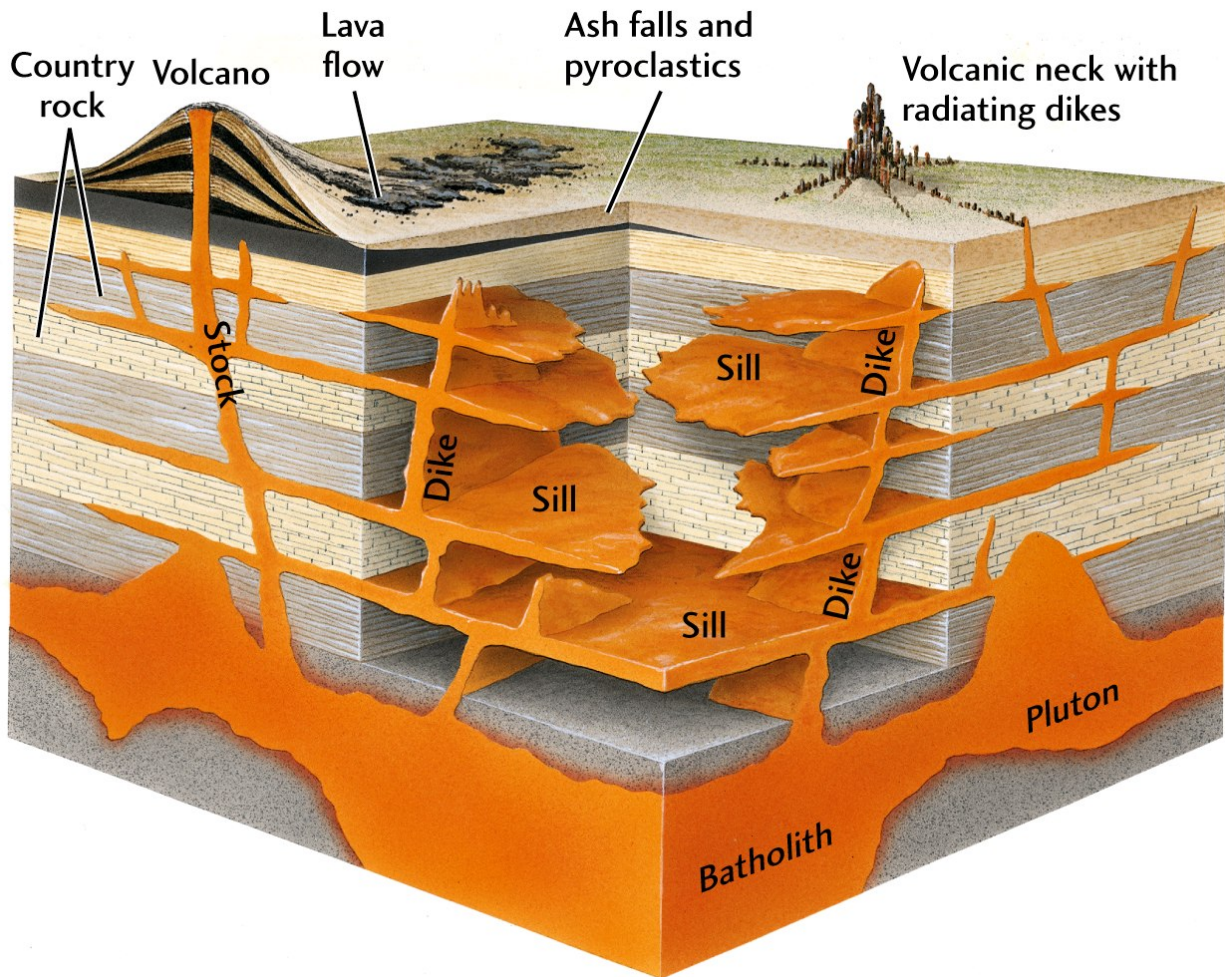
Describe as many cations and anions as you know:

CATIONS	ANIONS
Silicon (Si ⁴⁺) 0.27	Oxygen (O ²⁻) 1.40
Aluminum (Al ³⁺) 0.53	
Iron (Fe ³⁺) 0.65	Chloride (Cl ⁻) 1.81
Magnesium (Mg ²⁺) 0.72	
Iron (Fe ²⁺) 0.73	Sulfide (S ²⁻) 1.84
Sodium (Na ⁺) 0.99	
Calcium (Ca ²⁺) 1.00	
Potassium (K ⁺) 1.38	

What is the mineral composition of granite?



Describe the main types of igneous intrusions



What processes lead to the formation of magma?

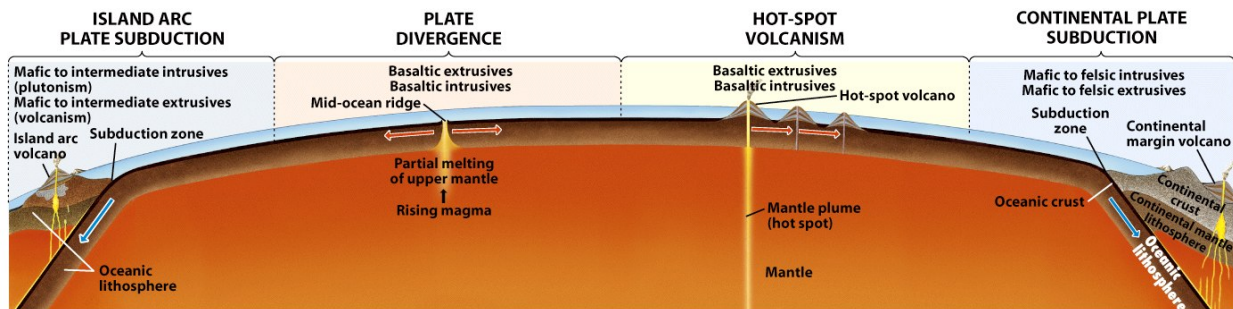


Figure 4-11 part 1
 Understanding Earth, Fifth Edition
 © 2007 W.H. Freeman and Company

Describe the main steps of the sedimentary rock cycle?

Describe what occurs during diagenesis:

If deposition is the dominant process, e.g., offshore Louisiana then rocks are in the process of being formed:

Diagenesis includes

(1) compaction = volume loss (mechanical squeezing)

and is accompanied by dewatering (= water loss) (by chemical or physical means)

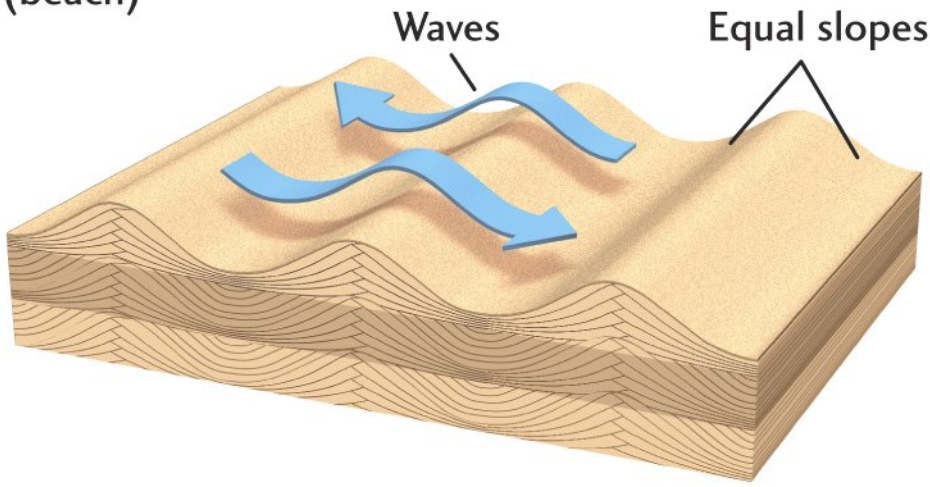
(2) changes in mineral composition (chemical process with heat and or fluids)

(3) cementation (physical)

If a sediment eventually becomes a rock we say it is lithified.

Describe the importance of cross-bedding:

Symmetrical ripples
(beach)



Asymmetrical ripples
(dune)

