

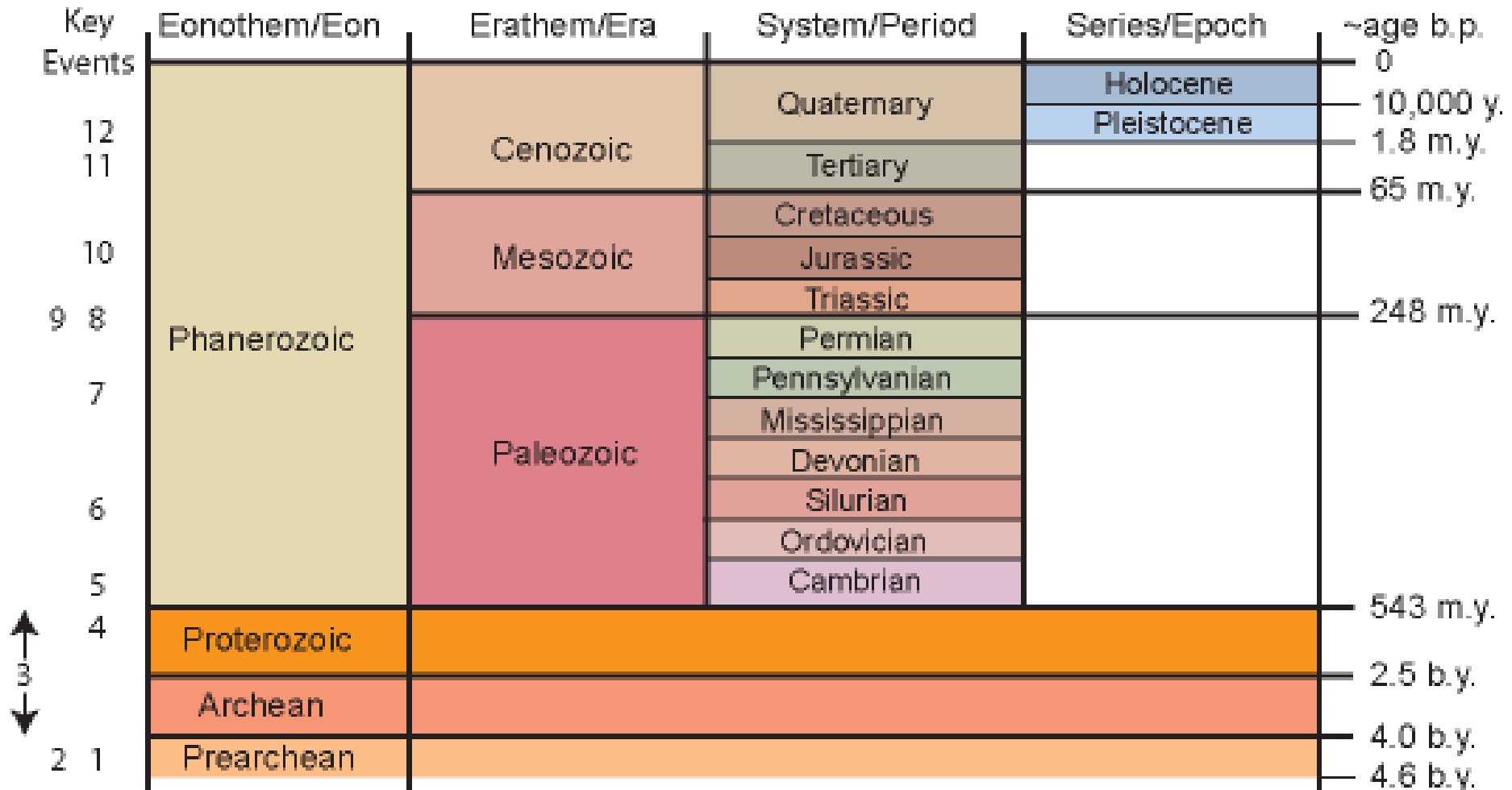
Geology 100

Notes on Planet Earth version 3.0

Review - Exam 3

Chapter 9

The Geologic Time Scale

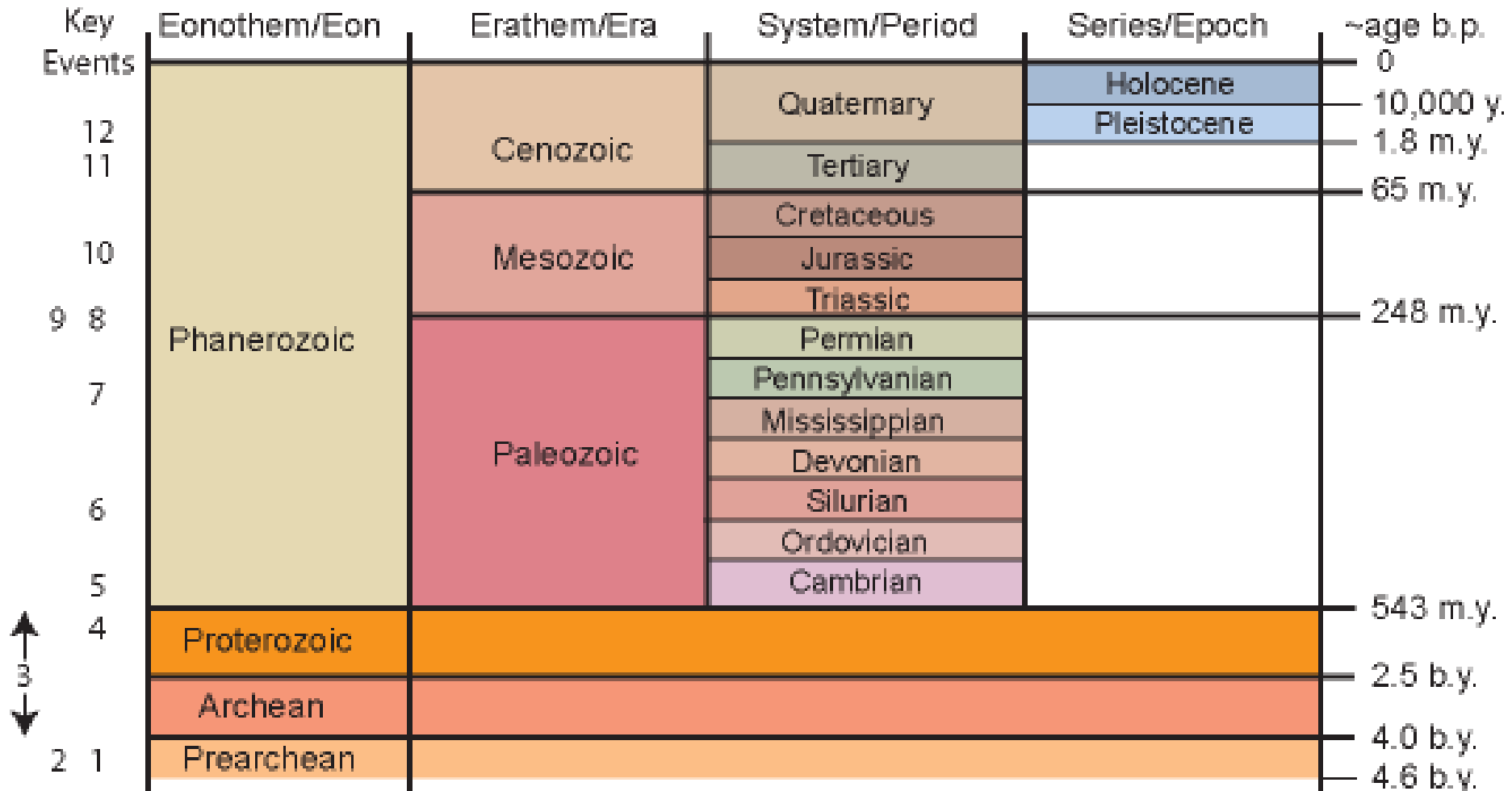


Note: The Proterozoic, Archean, and Prearchean are often referred to as the Precambrian

b.p. = before present y. = years m.y. = million years b.y. = billion years

Key Earth Events

Testing your knowledge of the time scale



Note: The Proterozoic, Archean, and Prearchean are often referred to as the Precambrian

b.p. = before present y. = years m.y. = million years b.y. = billion years

?



Rock Stratigraphic Units

- Supergroup
- Group
- Formation
- Member
- Bed

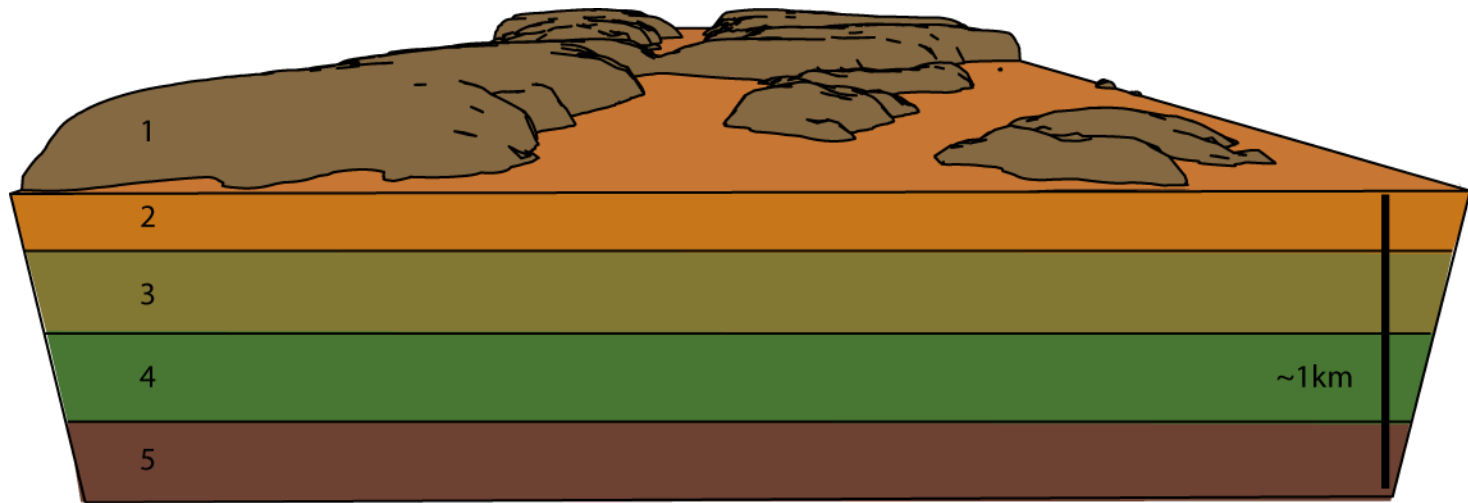
Stratigraphy

- Principle of original horizontality
- Principle of superposition
- Principle of lateral continuity
- Principle of faunal succession
- Principle of cross cutting relationships

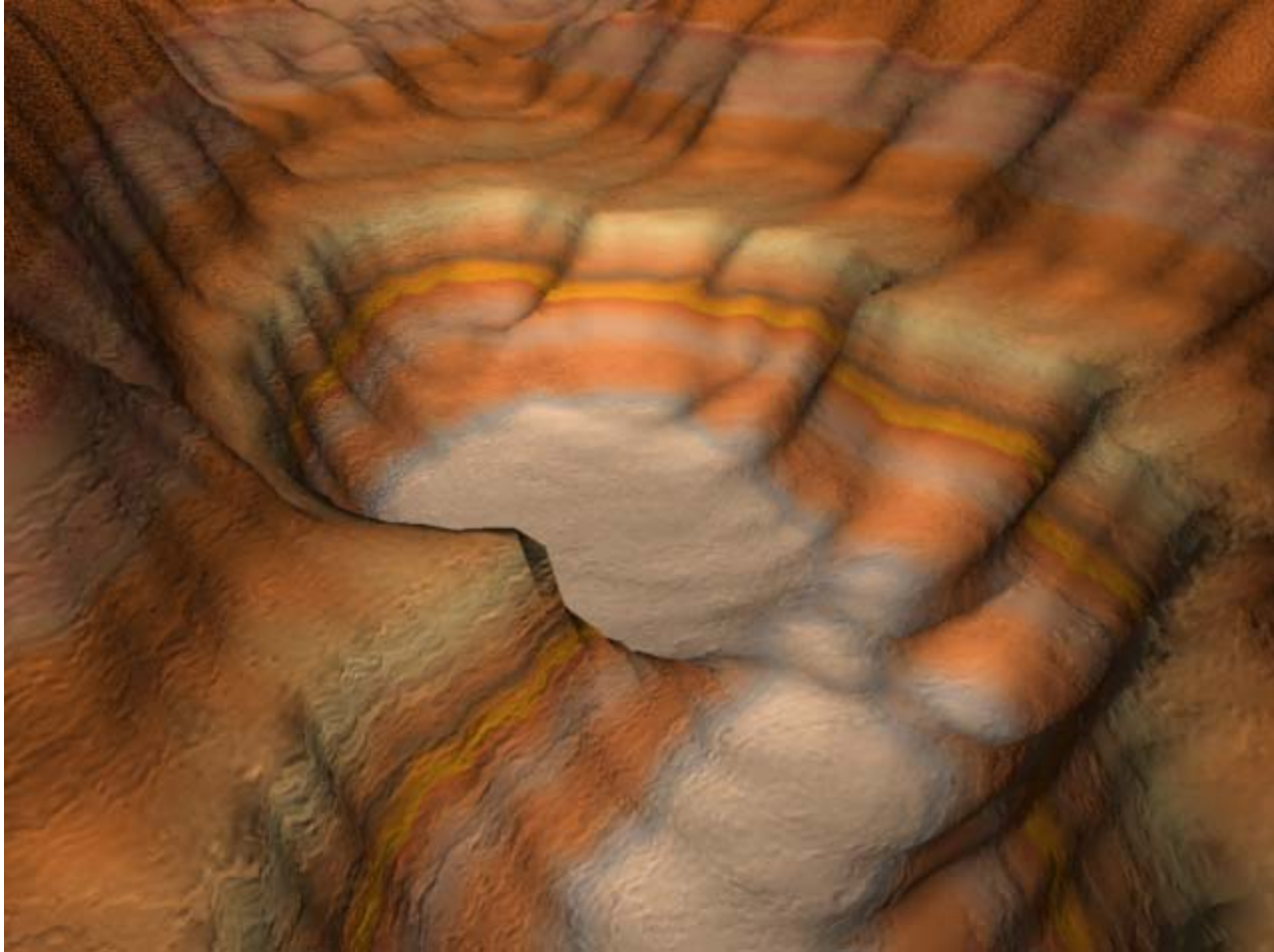
Principle of Original Horizontality



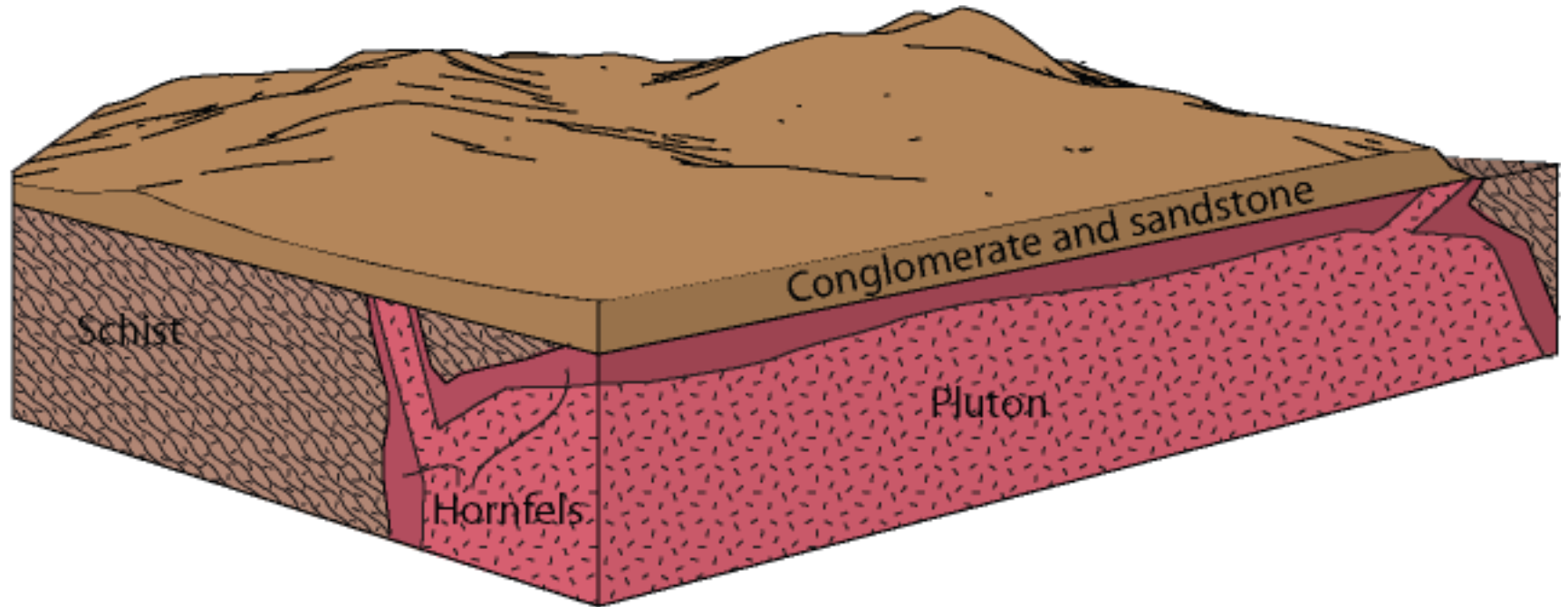
Principle of Superposition



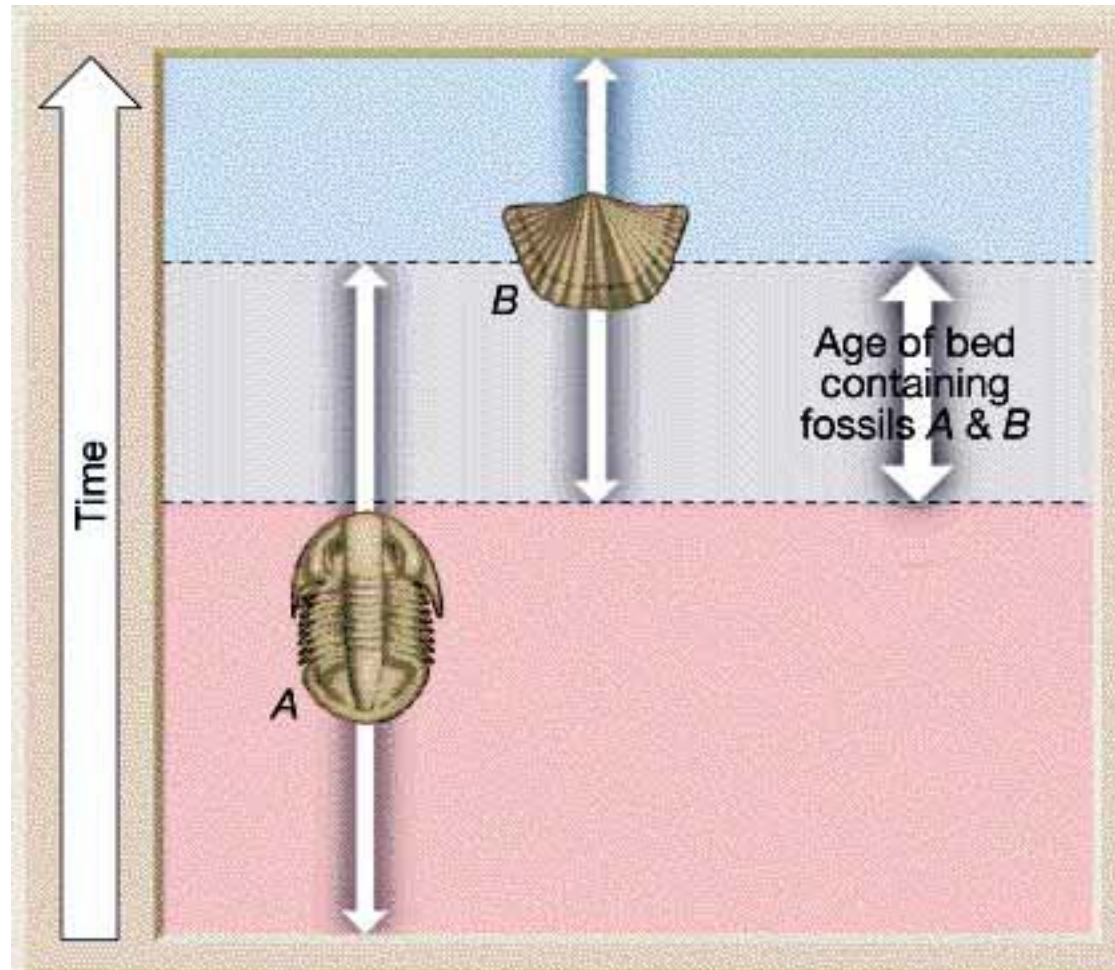
Principle of Lateral Continuity



Principle of Cross Cutting Relationships



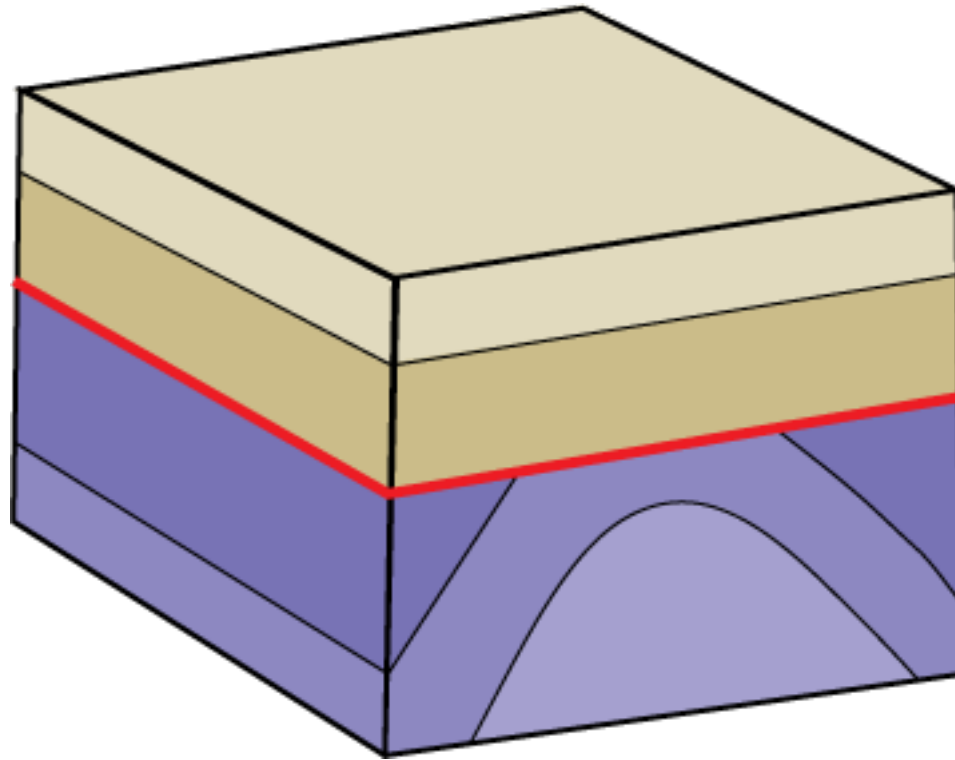
Principle of Faunal Succession



Unconformities

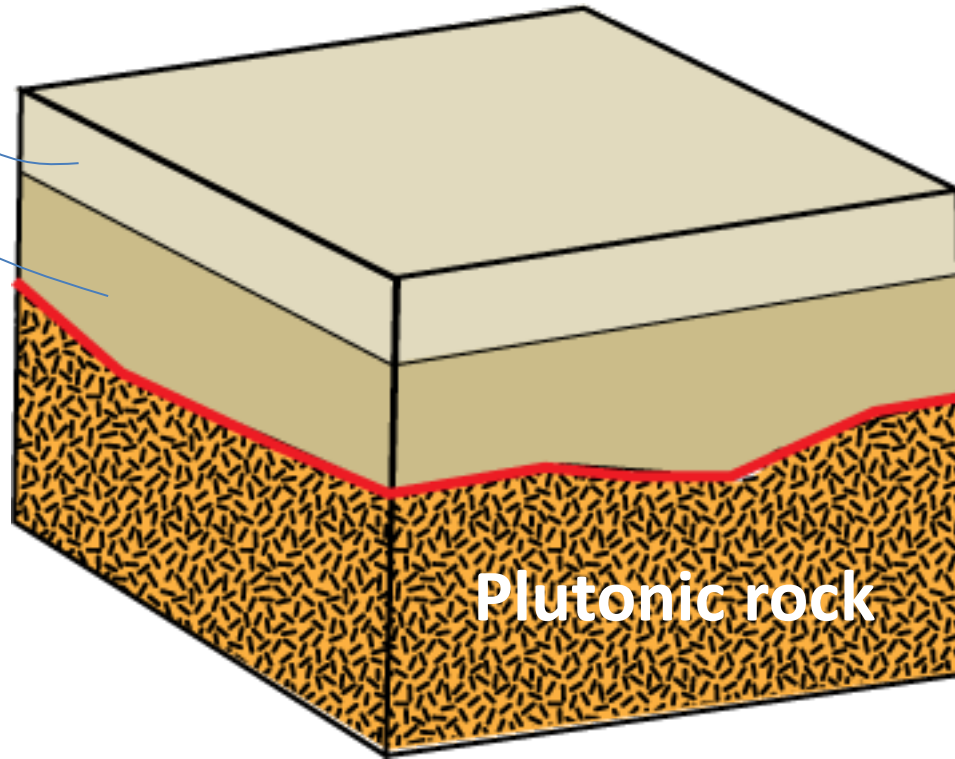
- Angular Unconformity
- Nonconformity
- Disconformity

Angular Unconformity



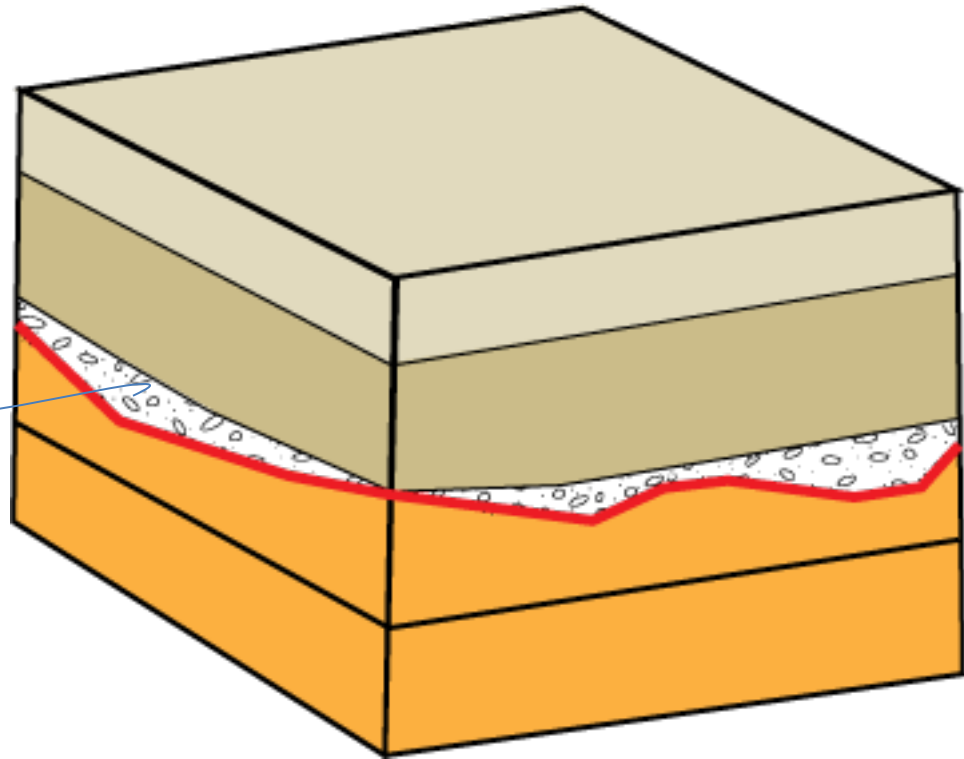
Nonconformity

Sedimentary
Rock



Disconformity

Conglomerate
Filling erosional
channels



Isotopic Dating or Geochronology

- What is an isotope?
- U-235/Pb-207
- Half-life
- $N = N_0(e^{-\lambda t})$

The Fundamental Age Equation

$$t = (1/\lambda) \ln[(D/P) + 1]$$

Common Isotope Systems

- U-238/Pb-206
- C-14/N-14
- K-40/Ar-40

age of the Earth