

V. Correlation

- a. correlation - matching similar rock strata in different location to see if they formed at the same time or under similar conditions.
- Walking the outcrop at an exposed outcrop (cliff of rocks).
 - It is often possible to follow a rock layer by walking from one end to another.
 - index fossils are organisms that existed for a very brief period of time, found over a large area and are easily recognizable.
 - Volcanic ash
 - Some volcanoes erupt explosively and leave a layer of volcanic ash over a large area.
 - A single layer of ash that can be found over a large area allows geologists to make remarkable correct time correlations from one location to another.

VI. Geologic Time

- Geologic time is based on fossil life forms and rock layers to correlate (match) the bedrock.
- impact events - (meteors hitting the ground) have been correlated to mass extinction and global climate change.
- The Earth's early atmosphere formed as a result of outgassing (gas was produced from chemical processes).
- The Earth's ocean formed as a result of precipitation of millions of years.
- The evolution of life caused dramatic changes in the composition of the Earth's atmosphere.
- OROGENY is the process of mountain building.

VII. Evolution of Life

- Scientists are not yet sure of how life began.
- The first organisms lacked hard parts and were not preserved.
- In time, more complex life forms developed (many had skeletons and shells that were preserved).
- Because most individual organisms decompose or are eaten by other organisms - few leave fossil remains. As a result - many life forms will never be known.
- Heterotroph Hypothesis - theory of how life began
 - First organisms were globs of chemicals that combined together. Did not make their own food.
 - Then chemical combined to use sunlight - autotrophs
 - Made a lot of oxygen
 - Allowed for sexual reproduction
 - Allowed for variation (mutations and variations)