

Student Essay on Geology

Geology

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Essay

The history of earth extends billions of years ago. Geologists have discovered that rocks contain records of earth's history. When the rocks are examined the relative and absolute geologic time is determined. Relative time deals with the order of events and not the time when the event occurred. It is only necessary to know if it occurred before or after another event. Which rocks were formed first? By interpreting the sequence of layers in sedimentary rocks the geologic history of an area can be determined. Absolute geologic time measures the exact date of rock, fossils, structures and landscape. Geologists have used the radioactive decay of isotopes to determine the absolute age of rocks.

When geologists examine rocks they use several principles to help them to determine the relative time of the rock. The principle of uniformitarianism was used which means that the present is the key to the past. The principle of superposition tells that the youngest layer of rock was formed on the top. The principle of original horizontality means that when rocks were first formed they were horizontal, if we see folds and tilt then that is a consequence of deformation. The principle of original continuity means that sediments are usually in continuous sheets but if it is cut by a canyon we assume that the sedimentary layer was there first. The principle of cross-cutting - if one feature cuts across another the feature that has been cut is older. The principle of inclusion means that if an intrusion has xenoliths then the xenoliths must be older than the intrusion. The last principle that could be used is the principle of baked contacts which means that if an igneous intrusion bakes the surrounding rocks then the baked rock must be older than the intrusion.

The absolute geologic time or the exact age of a rock can be determined by radioactivity. Radioactive elements decay at a constant rate and can be measured in the lab to calculate the exact age of a rock.