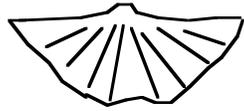


Index Fossils : Notes/W.S.-15

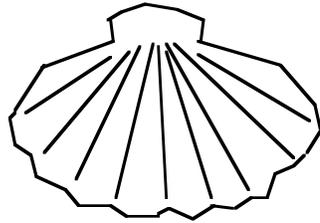
The relative ages of rocks can be found by using; "The Law of Superposition", and "The Crosscutting Rule". There are other ways to find the relative ages of rocks. One way is to use "**Index Fossils**". A fossil is the remnant of any ancient animal or plant that has been preserved in rock. It is often the remains of the shell or bones in which minerals have crystallized. The age of the fossil is equal to the age of the rock in which it is found. All fossils cannot be used as index fossils. An index fossil must have the following properties:

- a) It must have had hard parts, like a shell.
- b) It must have lived over a short period of time, before it evolved into a different creature.
- c) It must have lived all over the planet.

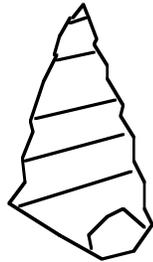
If two rocks anywhere on the planet contain the same index fossil, then we can be sure that those rocks are of the same age. Examples of index fossils are shown below. The name of the rock in which they are found, is given in the brackets.



Brachiopod (Devonian)



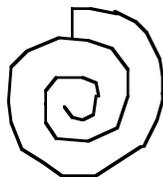
Clam (Miocene)



Gastropod (Eocene)



Trilobite (Cambrian)



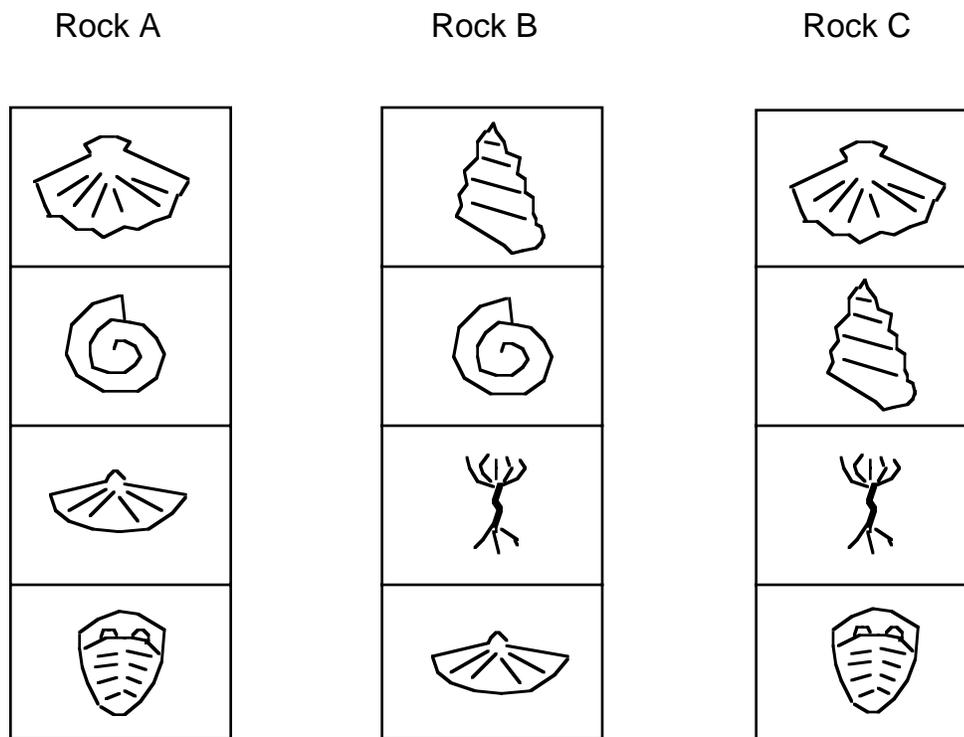
Ammonite (Cretaceous)



Crinoid (Permian)

Problems:

- 1) What is a fossil?
- 2) Why are index fossils important?
- 3) Give three properties of index fossils.
- 4) Three rocks are found in different parts of the world. The rocks have several fossils in them (youngest on top).



Arrange the fossils above, from oldest to youngest. (the fossils are: brachiopod, clam, gastropod, trilobite, ammonite, and crinoid).

Answers: 1) Fossils are the remains of animals or plants that have been preserved in rock., 2) Index fossils can be used to find the relative age of rocks., 3) must have hard parts, lived for a short period of time, found all over the world, 4) trilobite, brachiopod, crinoid, ammonite, gastropod, clam.