

## Fossil Notes

**Directions:** Read pages 110-120 in *Earth's Changing Surface*. Fill in the notes as you read.

### WHAT ARE FOSSILS?

Fossils are the preserved remains or traces of living things.

### HOW ARE FOSSILS FORMED?

Most fossils form when living things die and are buried by sediments. The sediments slowly harden into rock and preserve the shapes of the organisms.

Fossils are usually found in sedimentary rock, which is made of rock particles or remains of living things.

### TYPES OF FOSSILS

1. mold fossil – a hollow area in sediment in the shape of an organism. It forms when the hard part of the organism (like a shell) is buried in sediment.
2. cast fossil – a solid copy of the shape of an organism. It is the opposite of a mold and is formed when water deposits sediment and minerals in the empty space of a mold.
3. petrified fossil – when minerals replace all or part of an organism. The minerals harden and preserve the organism over time.
4. carbon film fossil – an extremely thin coating of carbon on rock. When sediment buries an organism, some the organism evaporates and leaves behind carbon.
5. trace fossil - gives evidence of the activities of ancient organisms. The sediment preserves the shape of an organism and slowly hardens into rock (like a footprint).
6. Preserved Remains – some organisms are preserved with little or no change. For example, tar and amber (the sap from evergreen trees) can cover and seal an organism completely. Others have been frozen, which can even preserve hair and skin.

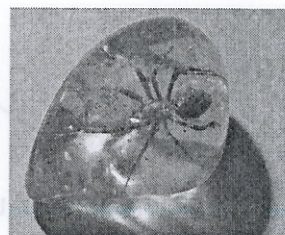


Mold fossil

Cast fossil



Carbon fossil



Preserved in amber



## WHAT CAN FOSSILS TELL US?

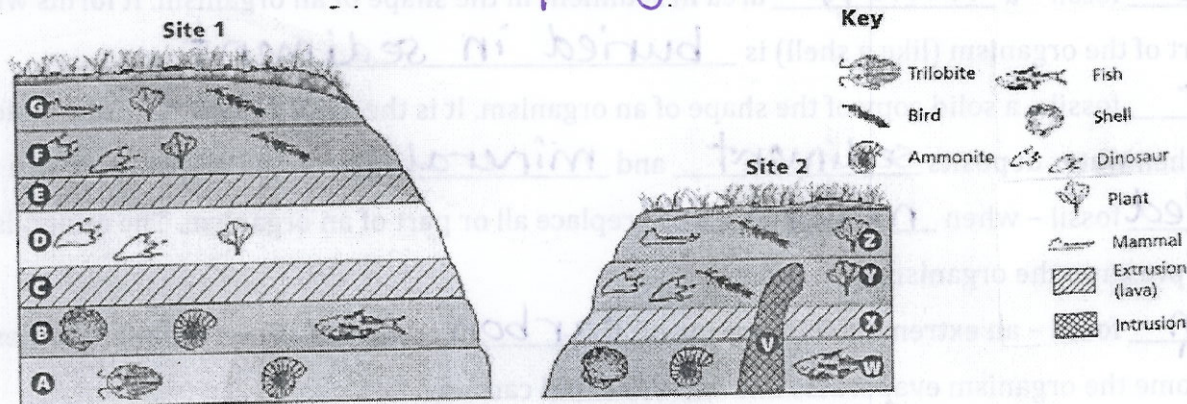
- Information about history of life and how organisms change over time
- Information about the changing environments on Earth, including climates
- Changing surface types

## LAYERS OF ROCKS

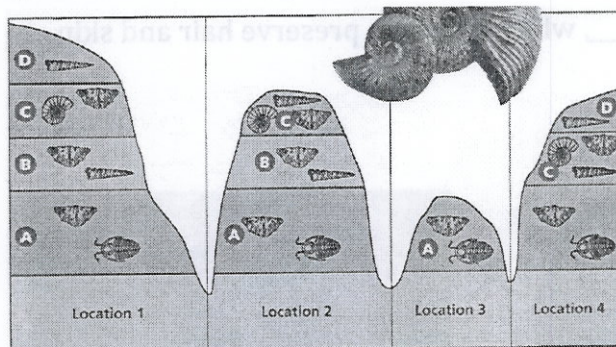
If you are a geologist who finds a fossil, you will want to know how old it is. The rock you find it in can be your clue!

The age of rocks tell how old a fossil is. The older rock layers are at the bottom and the younger layer is at the top. Each higher layer closer to the surface) is younger than the layers *below* it.

Another clue to the age of rocks comes from studying extrusions and intrusions. Extrusions come from lava that flow onto the Earth's surface and hardens. An extrusion is always younger than the rocks below it. An intrusion happens when magma pushes into bodies of rock and hardens. An intrusion is always younger than the rock layers *around* and *beneath* it.



1. Is the layer labeled with a V showing an extrusion or intrusion? intrusion
2. Which is older, V or Y? How do you know? Y... because an intrusion is always younger than the rock that surrounds it
3. Which layer in Site 1 might have formed at the same time as layer W in site 2?



Scientists can use fossils to match up rock layers at locations that may be far apart.