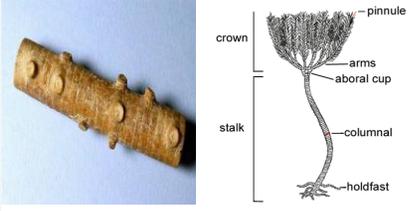
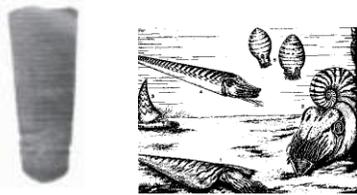
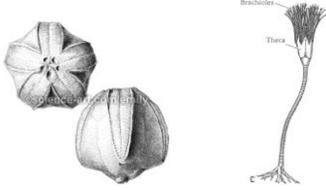


Determining Geologic Age of Rocks and Index Fossils

Table 1. Descriptions of Index Fossils

Fossil #	Fossil Name	Fossil Type	Description	Picture
1	<i>Acanthoscaphites</i>	cephalopod	These were around about the time that the dinosaurs became extinct.	 A photograph of several ammonite fossils, showing their characteristic coiled, ribbed shells.
2	<i>Carcharcodon</i>	tooth	This tooth once belonged to the shark. These have been found in layers of rock from the late Miocene epoch through the Holocene epoch.	 A photograph of a large, triangular, serrated shark tooth, likely from a Carcharcodon, with a ruler for scale.
3	<i>Crinoid stem</i>	echinoderm	This piece of stem belonged to an animal that looked this way when it was alive. Its descendants are still around today, and are related to the starfish. People call them Sea lilies because they look more like flowers than animal. They stood 2-3 feet tall. They were found in rock layers dated about 350 million years ago.	 A photograph of a fossilized crinoid stem on the left, and a diagram of a crinoid on the right. The diagram labels the crown (with pinnules, arms, and aboral cup), the stalk, and the holdfast.
4	<i>Eospirifer</i>	brachiopod	This is a two-shelled (bivalve), clam-like marine invertebrate. A “stalk” came out of the shell, which helped the invertebrate stick to rocks and even other shelled animals. Very few are still around today, but were most common during the early Paleozoic Era, about 430 million years ago.	 A photograph of a fossilized brachiopod shell, showing its characteristic two-lobed shape and surface texture.
5	<i>Equus</i>	tooth	Equus means horse. Note the maze-like surface design. This was needed for grinding up grasses about one million years ago.	 A photograph of a horse tooth (Equus) showing its characteristic maze-like surface design, held by a hand.

6	<i>Flexicalymene</i>	trilobite	This is called a trilobite because the body had three sections, or lobes. It became extinct at the close of the Paleozoic Era, about 500 million years ago. Some scientists believe it's the ancestor to the Horseshoe Crab found on beaches today. This can also be found curled up, similar to a roly-poly.	
7	<i>Meekoceras</i>	cephalopod	This isn't around today but its descendants, the squids, are somewhat like them, although they do not have external shells. These around when the first mammals appeared.	
8	<i>Merychippus</i>	tooth	This is older than <i>Equus</i> and smaller too. Compare them. Can you tell what its diet was? It's been found in sediments deposited in the Miocene epoch.	
9	<i>Michelinoceras</i>	cephalopod	This was different from most of the other cephalopods in that it never learned to coil its shell, but it could really move through the water like a torpedo. The chambered nautilus, which lives in the ocean today, is very similar. Some of the shell and the soft body parts are missing. It's been buried for 500 million years! You can find MANY of these in Nautaloid Canyon in the Grand Canyon.	
10	<i>Mucrospirifer</i>	brachiopod	These brachiopods attached themselves to rocks or other organisms' shells. In case of attack, they would close up to protect themselves. They have been found in the same rock layers as the <i>Phacops</i> fossils.	
11	<i>Muensteroceras</i>	cephalopod	The "sutures" are markings on the outside of the shell and they mark where one of my room ends and the next one begins. These were around when the first reptiles appeared.	
12	<i>Neospirifer</i>	brachiopod	This is the smallest "brac" in this fossil group, and found in rocks of the Pennsylvanian age, in the late Paleozoic Era.	

13	<i>Olenothyris</i>	brachiopod	These have only been found in early Cenozoic era rocks formed during the Eocene epoch.	
14	<i>Pecten</i>	pelecypod	This is the most familiar “shell” in this group, has been around longer than most of the other pelecypods (clams). It first appeared at the same time the mammals appeared, and is still around today.	
15	<i>Pentremites</i>	blastoid	This is one of the smallest fossils in this group, however if all of the parts were put back together, it would be taller than all the fossils here. These are extinct now, but its cousins, the Crinoids, still survive today. These have been found in rocks formed in the Mississippian period.	
16	<i>Phacop</i>	trilobite	This is larger than <i>Flexicalymene</i> (#6), and grew up to three feet long. This has only been found in a certain layer of Paleozoic rocks from the Devonian period.	
17	<i>Spirifer</i>	brachiopod	These have been found in rocks formed around 350 million years ago.	
18	<i>Tetragramma</i>	echinoid	This is also known as a sea urchin, and is related to the starfish. It had to scrounge around for food, and was very common at the end of the Cretaceous Period. These can be found along any beach today but don't step on it, or it will squash like an egg shell.	
19	<i>Turritella</i>	gastropod	This was a snail, and moved very slowly. These have been found in rock layers dated about 23 million years ago.	
20	<i>Venericardia</i>	pelecypod	My foot projected from between my shells, and was used to move. It has been found in Cenozoic rocks from the Miocene through the Holocene epochs.	