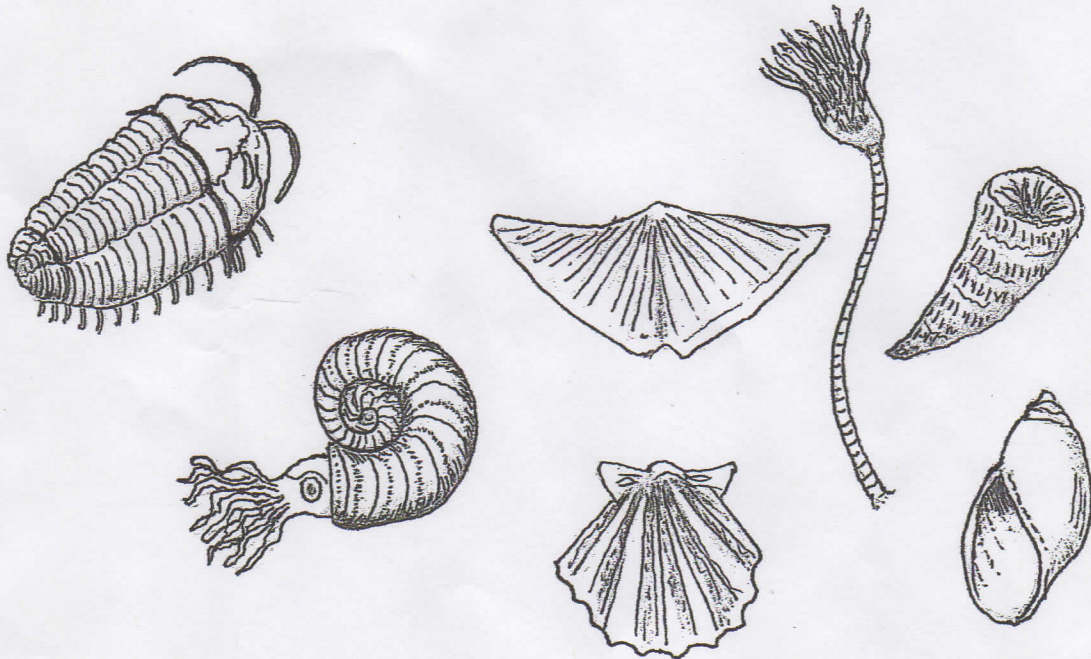# TRILOBITES AND EXTINCTION

TRILOBITES: Hard-shelled, segmented arthropods (includes insects, crabs, shrimp, lobsters). Over 15,000 species lived from the Cambrian (590mya) to the end of the Permian(250mya). Existed twice as long as dinosaurs. In Grand Canyon rocks from Tapeats Sandstone to Kaibab Limestone (250mya). Trilobites survived two large extinctions but died out at the great Permian extinction. Trilobites are index fossils for the Paleozoic era. They went through rapid evolutionary changes and were widespread.

Extinct

All trilobites had three main body parts, the head, thorax and tail. Trilobite means three lobed: an axial lobe, and left and right pleura lobes. Trilobite eyes were exceptional: Doublet Lenses which highly correct for optical defects but wasn't discovered by humans until the 17th century. They had natural lenses of optical perfection.

CRINOIDS: Are echinoderms (Also starfish, sand dollars, sea urchins). Crinoids existed from the Ordovician (500mya) till now. Modern crinoids are often called sea lilies. *Mural in geo. Look like plants*

BRACHIOPODS: Developed during the Cambrian and are still around. They bear a superficial resemblance to bivalves.

BIVALVES: Clams, oysters, mussels, scallops first appeared during the Cambrian and are still around.

GASTROPODS: Snail fossils have been found since the Ordovician and have a wide variety of shell shapes.

AMMONOIDS: First appeared during the late Cambrian and disappeared at the end of the Cretaceous Period (65mya).They were cephalopods similar to the chambered nautilus. During the Jurassic and Cretaceous they became abundant and rapidly evolved. Are index fossils for rocks of those periods. *Geology gallery*

Extinct

CYANOBACTERIA: This is the longest lived life form. Cyanobacteria has existed from over 3.5 billion years ago to the present. The stromatolites they form are found at Shark Bay, Australia and near the Bahamas. Their message is keep it simple and small. *earliest life form*

can combine w/ algae to make lichen