GEOLICAL TIME

You should memorize the periods of Geological Time as shown below including the few dates shown. It is possible to make up a mnemonic for the sequence COSDMP-P, TJC-C. In the United States the Mississippian and Pennsylvanian periods are used instead of the "Carboniferous" elsewhere. Also note that the Paleozoic Era encompasses the "COSDMP-P" portion (starting with Cambrian and ending with Permian), the Mesozoic Era (or "Dinosaur Age") is "TJC" and the last C stands for the Cenozoic Era.

Geological maps use special symbols. The Cambrian can't be "C" because that refers to the Carboniferous, so the Cambrian uses a slashed C thus: ∈. Another "C" age, the Cretaceous, is called "K." The Pennsylvanian and Permian both start with "P" so the Pennsylvanian uses a special |P with two vertical lines. The Cenozoic is never shown as such, instead it is divided into Tertiary and Quaternary. Thus we see discussion of the "K-T Boundary" some 60 million years ago. Because "T" is used for Tertiary, a special symbol must be used for the Triassic, which is T with a small "r" attached to the stem.

Cenozoic -- composed of "Quaternary" or "Q" (Pleistocene and Recent, last 2 million years) and "Tertiary" or "T" (the other "-cenes", i.e. Miocene, Pliocene, 60 mya to 2 mya). Bryce Canyon is Cenozoic.

Cretaceous -- Symbol "K" -- ended 60 mya. Late Dinosaurs, early Birds, Mammals, flowers etc. T. Rex and Triceratops. Named after chalk, as in Dover Cliffs. Great extinction at end, not just of dinosaurs.

Jurassic -- "J" -- Brontosaurus/Apatosaurus. Zion National Park is mostly Jurassic. Named after Jura Mountains in Europe.


Permian -- "P" -- ended about 250 mya. Enormous extinctions both land and sea. Unchanged survivors are very few but include the Ginkgo tree. The Grand Canyon stretches from Permian at the rim to pre-Cambrian at the bottom.

Pennsylvanian -- "|P" -- an age of Coal, the Carboniferous in Europe

Mississippian -- "M" -- an age of Coal. High oxygen levels?


Silurian -- "S" -- This and Ordovician named after tribes that lived in Wales during Roman times. Scorpions, millipedes, first land animals.

Ordovician -- "O" -- Shells and armor get carried to extremes.

Cambrian -- "∈" -- The first trilobites, first fossils of "familiar" creatures. Burgess Shale. Named after Wales ("Cambria"). Started about 540 mya.

Vendian -- last Proterozoic period. The Ediacaran fauna. What are those things? Animals, lichens, jellyfish, sea-pens, big single celled organisms, plants?

Archaezoic - Oxygen precipitates Iron from oceans 2.2 billion years ago. Then O₂ in air.

Hadean – 4.5 to 3.8 bya. Violent bombardment, life seems unlikely