

Geology of Iowa
Project
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Goals & Objectives:

The students will learn about the geologic time scale. Students will learn what a fossil is and how to identify fossils. The students will use the fossils located in the layers to determine the age of the rock layer and the climatic conditions of Iowa at that time.

Procedure:

Pass around the samples of fossils collected from Geology of Iowa class. Have the students discuss what the fossils are and describe the environment that the sponges and corals would form. The students should be able to identify these as warm tropical organisms that you would find in present day Cancun, Mexico.

Introduce the geologic time scale to the students, review rock layer information from Grand Canyon Formation project and plate tectonics studied earlier. Using the website www.fossweb.com the students will reconstruct plate tectonics and see what area areas were in the tropics at the time the fossils would have been laid down. They should realize that Iowa was tropical at the appropriate time. If not, I will guide them to that conclusion.

Building on this new knowledge of Iowa as a tropical paradise and how plate tectonics moved Iowa northwesterly we would then begin constructing a geological time scale for Iowa from that time to the present including the various periods of glaciation and what plant and animal life forms were indicative to each period.

The students would then participate in a field trip to either the Morgan Quarry or to the cut sites in the town of Graf to collect and identify their own fossils.

Assessment:

Students would complete a pre-test and post-test answering questions on geologic time scale, what are index fossils, how can fossils be used to determine the age of rock layers, etc. The students would also be required to complete a project of their choosing that demonstrates their learning of the material. A rubric would be used to guide the students on what material should be included and what questions they need to answer. Project options would include a labeled fossil collection, poster, power point presentation, 3-D representation of rock layers and fossils, I-movie etc.

Resources:

USGS

Iowa Geological Service

www.fossweb.com

UNI Geology Department

Various handouts from the Geology of Iowa class