Lesson Title	Fossils and Fossilization
Length of Lesson	One (50 minute) class period
Created By	Bo Cherry
Subject	General Science
Grade Level	7th grade
State Standards	7th: 1 b, h (Inquiry); 4 a, b (Earth and Space Science)
DOK Level	DOK 3
DOK Application	Distinguish, Compare, Classify
National Standards	5-8: A (Inquiry); D (Earth and Space Science)
Graduate Research Element INTERNATIONAL: Poland	Knowledge of fossils and the process of fossilization is important in geosciences as it played a key role in the discovery and confirmation of plate tectonics.

Student Learning Goal:

MS 7th Grade:
(Inquiry) 1 (b) Discriminate among observations, inferences, and predictions. (DOK 1); 1 (h) Make relationships between evidence and explanations. (DOK 2); (Earth and Space Science) 4 (a) Justify the importance of Earth materials (e.g., rocks, minerals, atmospheric gases, water) to humans. (DOK 3); (b) Explain the causes and effects of historical processes shaping the planet Earth (e.g., movements of the continents, continental plates, subduction zones, trenches, etc.) (DOK 2)

National Science Education Standards of Content 5-8:
(Inquiry - A) Develop descriptions, explanations, predictions and models using evidence; (Earth and Space Science - D) Earth History: Fossils provide important evidence of how life and environmental conditions have changed.

Materials Needed (supplies, hand-outs, resources)
Handout for note-taking and exercise (INSPIRE_HO_Cherry_05_01_12), Computer, Projector, Powerpoint (INSPIRE_PP_Cherry_05_01_12), Fossils (local and other important fossils), video (INSPIRE_Video_Cherry_05_01_12)

Lesson Performance Task/Assessment:
This lesson will provide students with a different perspective on fossils. The lesson begins with a discussion about fossils and what they are. Students typically think of dinosaurs, but discussion should focus on the fact that there are all kinds of fossils, and how each one can tell scientists different things. The powerpoint also has a video associated with it. This video describes the actual process of fossilization. Students should understand the conditions that are ideal for fossils to form. Finally, the students will have an opportunity to actually handle real fossils. Each fossil will be shown to the class, discussed, then passed around (assuming the fossil is not invaluable and *can* be passed around). Students should fill out the handout (INSPIRE_Cherry_HO_05_01_12) as the instructors goes over each sample. This activity should reinforce the previously mentioned concepts (index fossils and fossilization) by mentioning how the fossils tell scientists about past environments.

Lesson Relevance to Performance Task and Students:
The lesson is relevant to students by incorporating local fossils. Also knowledge of geologic time scale is important to get across to the students during this lesson. Showing that some of the fossils are hundreds of millions of years old will give students a better idea of geologic time. Also incorporating plate tectonics into the lesson makes it even more meaningful for students.

Anticipatory Set/Capture Interest:
For this lesson, a basilasaurus vertebra is displayed. Students are asked to guess what the object was. Most students will guess that it is a tree trunk. At this time, have students touch and knock on the "tree trunk". Students will then note that it is rock. The instructor then shows students what it is (large whale-like animal that lived 50-60 million years ago).

Guided Practice:
Students are guided through the powerpoint presentation. Then, students are to pass around fossils as a class.

Independent Practice:
Students will be asked to note certain things about each fossil, including the name and what it could tell geologists about the past.

Remediation and/or Enrichment:
Remediation – Individual IEP; Work in groups to interpret fossils
Enrichment – Have students create a drawing of what Mississippi looked like 50 million years ago.

Check(s) for Understanding:
Students should understand how fossils are formed, what they tell us about the past, and how fossils were used to prove the theory of plate tectonics.

Closure:
Question 1: What are two things necessary for fossils to form?

Question 2: Why do we have fossils of whales here in Mississippi?

Possible Alternate Subject Integrations:
Life Science, Earth Science

Teacher Notes:
None