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EDUC 400

SIOP Lesson Plan

### SIOP Adapted Lesson Plan: Fossils

Aspects highlighted in yellow indicate SIOP adaptations or aspects that support the SIOP model.

**Grade:** 4<sup>th</sup> **Content Area:** Science (Earth Science)

**Standard:**

3.1.4.C3- Compare fossils to one another and to currently living organisms according to their anatomical similarities and differences.

3.3.4.A3- Recognize that fossils provide evidence about the plants and animals that lived long ago and the nature of the environment.

**Objectives:**

**Content Objective:**

The students will examine how fossils are formed. The students will understand how fossils provide evidence of plants and animals that lived long ago as well as the environmental conditions at that time.

Content Words: Fossil, paleontologist

**Language Objective:**

The students will use the terms fossil, paleontologist, observe, measure, and remains.

The students will discuss in groups as they examine and observe the fossil manipulatives.

Language Words: Observe, measure, and remains

**Pre-Assessment:**

The teacher

**Introduction:**

Tell the students that they will be making models of fossils. The teacher should explain to the students what the modeling process will consist of. The students should understand that the modeling will be similar and different from the actual process of fossilization.

**Input:**

*Part 1: What is a Fossil?*

1. The teacher will write on the board the word fossil and ask the students to define the term. The teacher will record their responses. The teacher will explain to the students that a paleontologist is a scientist that studies fossils. Provide the students with these questions to help them define the term:
  - a. What is a fossil?
  - b. What can become a fossil?
  - c. How do fossils form?
2. The teacher will tell students that they will create their own fossils. The teacher will give each student a paper plate filled with wet plaster. The teacher will give each student a natural object and have them press it into the plaster. Once the impressions have been

made, they can remove the objects from the plaster. The teacher will remind students not to touch the plaster, because it will need time to harden and dry. The teacher will have the students to write down some initial observations about their fossils. Provide the students with these questions to help them take notes on their fossil:

- a. Which parts made very visible impressions in the plaster?
- b. Which parts of the object are harder to see in the impression?

*Part 2: What can we learn from Fossils?*

1. Once students have explored how a fossil forms, they can begin to understand what scientists can learn from examining a fossil. The teacher will emphasize how fossils are a record of the plants and animals that lived a long time ago. The teacher will project a Fossils PowerPoint with pictures of plant and animal fossils to discuss with students. As the class looks at each fossil, discuss the following questions:
  - a. Is this a plant or an animal fossil?
  - b. What do you think this plant or animal looked like when it was alive?
2. Divide the class into pairs and have them explore the *Fossils: An Ancient Sea in Indiana* Flash Interactive. The teacher will encourage them to take their time and explore all links and concepts. The teacher will call attention to the three types of fossils: trace, soft tissue, and hard parts of plants and animals. Allow the students to take notes that they can refer to later.
3. The teacher will divide the class into pairs again and ask them to navigate the *Types of Fossils* Flash Interactive. Again, encourage them to take their time reading the information on each page. When they are finished, place each pairing with another

pairing to form a small group. Assign each of the scenarios below, featuring different types of organisms in a particular environment.

- a. A worm living in a rainforest
- b. A polar bear running across a snowfield in the Arctic
- c. A fish swimming in a lake
- d. A snail living in a rainforest
- e. A snake crawling through a desert
- f. A tree growing in a swamp
- g. A deer living in a forest

The teacher will have each group present its scenario to the class. The teacher will tell the students that they will need to answer the following questions:

- a. Based on its characteristics and the environment in which it lives, do you think the organism has the potential to fossilize? Why or why not?
  - b. If so, which of the organism's characteristics do you think will be visible in the fossil?
  - c. If not, what do you think would need to be different about the organism's environment to make it more likely to fossilize?
4. To conclude the lesson, ask the students to review their original definition of fossil and revise it, as needed, based on what they have learned. Record the new class definition on the board.

**Check for Understanding:**

Return to each student his or her natural object and the fossil made from it. The teacher will tell the students that they will be showing their fossils to the class. As part of the presentation, the student will need to classify their fossils according to the three types of fossils described in the *Fossils: An Ancient Sea in Indiana* Flash Interactive. The students should also look over their original list of observations and, based on what they have learned about fossils, discuss why they think the fossils come out as they did. After they have had some time to prepare, have students give their presentation to the class.

**Adaptations:**

Several adaptations were built into the lesson to assist English Language Learners into the mastery of the content and language objectives. These adaptations could also benefit other students who may experience difficulty learning the concepts.

**Accommodations:**

The students will be working in pairs for Independent Practice. An ESS resource teacher will be working with the group with the students who have specific needs in the area of science. This teacher will provide the necessary support and scaffolding to the students. Other accommodations that were made to the lesson to accommodate English Language Learners were built into the lesson.

**Materials:**

- Internet access for each pair of students
- For each student:
  - Paper plate

- Plaster of Paris (enough to fill plate)
- Natural object that can be used for making a fossil
- Multimedia Resources:
  - Teacher-made Fossil PowerPoint
  - *Fossils: An Ancient Sea in Indiana* Flash Interactive
  - *Types of Fossils* Flash Interactive