

Dinosaur Detectives

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| Overview | Understand that discoveries about dinosaurs have a long history and that each paleontologist adds his or her work to a body of fossil evidence used to support theories about dinosaurs. |
| Objectives | <p>Students will—</p> <ol style="list-style-type: none"> 1. Understand that discoveries about dinosaurs have a long history and that each paleontologist adds his or her work to a body of fossil evidence used to support theories about dinosaurs. 2. Find out that paleontologists often support one theory over another until additional fossil evidence either confirms or disproves the theory. 3. Understand that paleontologists can learn more about dinosaurs through new scientific techniques. |
| Standards | <p>6.4.1 Organization and Focus: Discuss ideas for writing, keep a list or notebook of ideas, and use graphic organizers to plan writing</p> <p>6.3.2 Life Science: Describe how changes caused by organisms in the habitat where they live can be beneficial or detrimental to themselves or to native plants and animals.</p> |
| Materials | <ul style="list-style-type: none"> • For the class: <ul style="list-style-type: none"> • Computers with Internet access (optional but very helpful) • Encyclopedias • Additional resources about paleontologists through history • For each student: <ul style="list-style-type: none"> • Pens, pencils, and markers • Large sheets of paper • Books and magazines • Classroom Activity Sheet: Paleontologist Profile (see printable version) • MyToDos.com |
| Procedure | <ol style="list-style-type: none"> 1. Ask students what they know about dinosaurs. Then ask how we know this information, especially since dinosaurs have been extinct for millions of years. If students mention the study of fossils, add to their thinking by telling them that this specialty is called paleontology, the science of dealing with life during past geological periods as known through the study of fossil remains. 2. Explain that scientists began studying dinosaurs in the late 18th century, when they found fossilized bones that they couldn't identify. Specialists in anatomy, such as Georges Cuvier, realized that the bones were from animals from long |

ago. This led Cuvier to first introduce the idea of extinction. Before that time, people believed that the animals on Earth were unchanged and had always existed.

- 3.** Discuss how over time, paleontology emerged as a specialty as scientists found enough fossilized bones to enable them to reconstruct entire dinosaur skeletons. By studying these skeletons, paleontologists have been able to propose theories about the world that existed millions of years ago.
- 4.** Explain to students that they are going to conduct research about some major paleontologists and their discoveries. Divide the class into small teams of about 2-3 students. Each group will research a paleontologist to study in-depth and present an oral report to the class.
- 5.** Following are paleontologists who have made significant discoveries. If students are familiar with paleontologists, they may want to choose one from this list or from their own research. If this is a new topic to students, you could assign a paleontologist to each group:

- Georges Cuvier (1769-1832)
- Gideon Mantell (1790-1852)
- Mary Anning (1799-1847)
- Othniel Marsh (1831-1899)
- Edward Drinker Cope (1840-1897)
- Roy C. Andrews (1884-1960)
- Roland T. Bird (1899-1978)
- Robert Bakker (1945 -)
- James I. Kirkland (1954 -)
- Paul C. Sereno (1958 -)

- 6.** Give each group a copy of the Classroom Activity Sheet: Paleontologist Profile to help them organize their research. They will use this sheet to answer the following questions while conducting their research:

- What is the paleontologist's name?
- When did he or she live?
- Where did they carry out their fieldwork?
- What are their major discoveries?
- What theories do (or did) they support?
- What technology aided them in their work?*

* Point out to students that advances in technology have given paleontologists new insight into the world of dinosaurs. With CAT-scan technology, they can see inside fossilized dinosaur skulls. Computers can now create virtual dinosaurs that show scientists how the giant beasts once moved. The examination of fossilized dinosaur dung, called coprolite, can give scientists an idea of what dinosaurs ate.

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| | <p>Encourage students to include maps of where the fieldwork took place and drawings of the scientists' major discoveries.</p> <p>7. Suggest that students use the following Web sites as part of their research:</p> <ul style="list-style-type: none">• Georges Cuvier• The geological time scale link• General sites on paleontologists: http://www.lhl.lib.mo.us/pubserv/hos/dino/welcome.htm <p>You may also want to direct them to this excellent children's book on the science of paleontology: Clinton, Susan. <i>Reading Between the Bones</i>. New York: Franklin Watts, 1997.</p> |
| <p>Evaluation</p> | <p>8. Have groups present their findings to the class in the first person, taking on the persona of their selected paleontologists. They could come to class dressed in appropriate costumes and could present the maps, drawings, and other visual elements as though they had originally developed them. If appropriate, students could challenge the theories of other paleontologists. During the presentations, have students take notes on My ToDos calendar and ask them to use their notes to create a timeline of significant discoveries and people in paleontology.</p> <p>9. Encourage students to expand their timelines in creative ways. For example, they could include an illustration of a dinosaur next to the paleontologist who helped discover it or drawings of the paleontologist showing his or her distinctive features, such as a black hat always worn or a particular tool always used.</p> |

ⁱ <http://school.discoveryeducation.com/lessonplans/programs/dinosaurdetectives/index.html>