

FOSSILS

Science and Social Studies Standards

Covered:

SS (K) 1. Use daily schedules and timelines from birth to present to relate self and family to changes over time.

SC (1) 6. Recognize evidence of animals that no longer exist.

SC (1) 7. Identify components of Earth's surface, including soil, rocks, and water.

SC (2) 6. Identify characteristics of animals, including behavior, size, and body coverings.

SC (3) 9. Describe how fossils provide evidence of prehistoric plant life.

SS (4) 1. Identify historical and current economical, political, and geographic information about Alabama on thematic maps.

SC (4) 5. Describe the interdependence of plants and animals.

SS(5) 2. Identify causes and effects of prehistoric migration and settlement in North America.

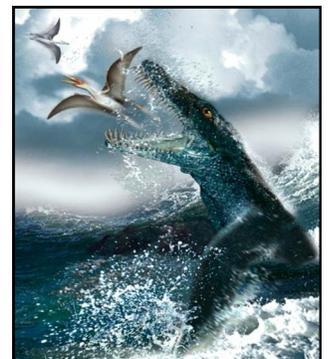
SC (5) 9. Describe the relationship of populations within a habitat to various communities and ecosystems



The Alabama Museum of Natural History (AMNH) is part of the University of Alabama Museums and is located on the UA campus in Smith Hall. Opened in 1910, it is the oldest natural history museum in Alabama, and one of the oldest natural history museums in the nation. AMNH's mission is to

broaden the knowledge of natural sciences and human culture through collections and quality programs of research, instruction, and service.

Fossil Program: Take a step back in Alabama history to when dragonfly wings were three feet wide and grasses grew to 80 feet tall! Learn about when Alabama was mostly covered in oceans, giving way to fearsome aquatic beasts and giant turtles. Discover Alabama dinosaurs and Ice Age animals, some of which may surprise you! This program is an educational ride through Alabama's prehistoric past which includes a presentation and hands-on experience with actual fossils. And it all happens **in your very own classroom!** The program discusses what a fossil is, how fossils are formed, and how paleontologists recover them. The presentation also discusses geologic time from the Cambrian period to the Quaternary period (the period we are in now) and uncovers what creatures lived in Alabama during those times.



FOSSILS

Did you know?

The Alabama Museum of Natural History is right on the University of Alabama campus? It is housed in Smith Hall near the Gorgas Library.

Did you know?

AMNH is a great destination for school field trips. Guided tours cost \$2 per student and chaperone. If you would like a hands-on component added, a tour and Discovery Lab is only \$5 per student.

For information

regarding field trips, you can call (205) 348-7550 or email programs@ua.edu.

For more info or to schedule this in-school program for your room, email programs@ua.edu



Thomas Carr

SUGGESTED PRE-VISIT ACTIVITIES:

- Brain Pop Jr.-Fossils
- Brain Pop-Fossils, Geologic Time
- A Day in the Life of Paleontologist

SUGGESTED POST-VISIT ACTIVITIES:

- Virtual Fossil Dig
- Fossils Memory Game
- Fossil Cookie Dig
- Acrostic Poem
- Fossil Dig Comic Book



BOOKS ABOUT FOSSILS AND DINOSAURS:

- *Great Big Dinosaur Dig* by Bill Nye
- *How Do Dinosaurs Eat Their Food* by Jane Yolen & Mark Teague
- *Big Old Bones* by Carol Carrick
- *What Happened to Patrick's Dinosaurs?* By Carol Carrick
- *The Magic School Bus In the Time of the Dinosaurs* by Joanna Cole and Bruce Degan

VIDEOS ABOUT FOSSILS AND DINOSAURS:

- Discovering Alabama: *Tracks Across Time*
- *Bill Nye the Science Guy: Fossils* Episode 79
- *The Magic School Bus: The Busasaurus*
- *I am a Paleontologist*-Song and video by They Might Be Giants



Fossil Memory Game: Print and cut cards to test your memory of ancient Alabama creatures!

DINOSAUR MEMORY
GAME

Fossil Memory Game: Print page 3 and 4 front to back for ready to use cards.

	 <p>Mammoth</p>
	 <p>Mastodon</p>
	 <p>Basilosaurus</p>
	 <p>Giant Sloth</p>
	 <p>Horse</p>
	 <p>Pteradon</p>

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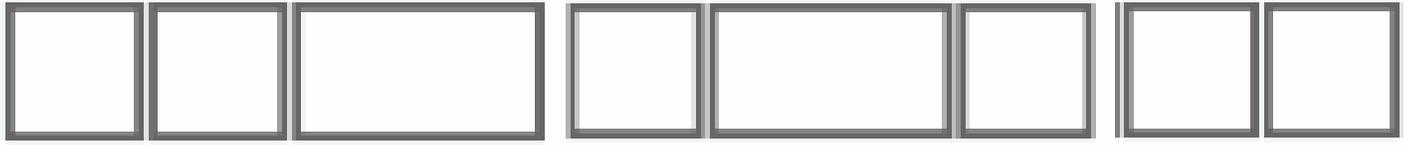
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By: _____



Fossil Dig Comic Book-

*Fossil Fever: My Adventures as a
Paleontologist*

By: Your class!

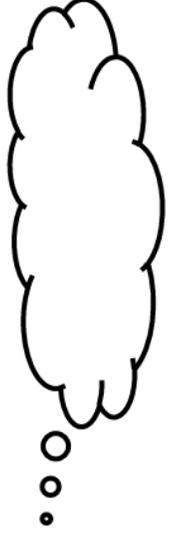
Have each student create their own page to a class comic book! Your students can use what they have learned about paleontology and fossils to come up with a wild adventure they might go on as a paleontologist. Use the boxes to draw pictures and add text below each to tell their story.

After each student has completed his/her page, you can bind the pages into a book to create a classroom comic book made by your very own paleontologists!



Fossil Fever: My Adventures as a Paleontologist

By:



This lesson plan was found on the ALEX website and is provided by Keisha Lewis of Perry County. It can be adapted for all grades K-5.

Lesson Plan ID: 24120

Title: We Can Dig It!

Overview/Annotation: In this lesson, third grade students will explore "fossils" by using chocolate chip cookies in an interactive fossil dig! Through creative problem-based learning that incorporates technology, students will work in collaborative groups to create a podcast about paleontology. After completing this group project, the students will be able to relate to paleontologists while understanding the significance of paleontology on the local environment.
This lesson plan was created as a result of the Girls Engaged in Math and Science, GEMS Project funded by the Malone Family Foundation.

Content Standard(s):

SC 9. Describe how fossils provide evidence of prehistoric plant life.

ELA 12. Demonstrate retrieval skills needed to research a topic.

ELA 13. Demonstrate the ability to follow multistep oral directions.

Local/National Standards: National Science Education Standards come from the National Academies of Science NS.K-4.4: As a result of their activities in grades K-4, all students should develop an understanding of properties of earth materials

Primary Learning Objective(s):

- 1.) The students will identify terms relating to a fossil dig.
- 2.) Through an investigative hands-on activity with real-life materials, the students will actively demonstrate the process of digging for rocks and fossils.
- 3.) While working in collaborative groups to create a podcast, the students will role-play the job of a paleontologist by describing the process and tools necessary for digging up rocks and fossils.

Additional Learning Objective (s): Students will incorporate 21st century technology skills while working cooperatively groups. Each individual will fulfill one of the following roles in their small group: Paleontologist, Interviewer, Director, Tool Technician. (Additional roles can be added to accommodate larger groups. Alternatively, students could work in pairs with the roles of Interviewer and paleontologist.)

Approximate Duration of the Lesson: Greater than 120 Minutes

Materials and Equipment:

Each group will need:

- A medium-sized shoe box filled with chocolate chip cookies (1 for each child in the group) and sand
- A small plastic shovel for each group member
- A small paintbrush for each student
- A toothpick for each student
- A napkin or paper towel for each student
- Science notebooks or a piece of paper

Technology Resources Needed: Podcast materials: iPod, microphone, LCD projector, MAC computer with Internet access and Garage Band software.

Background/Preparation:

The teacher should place chocolate chip cookies in the boxes and cover with sand. There should be enough cookies buried in the sand for each child to dig out and investigate. The teacher should also be familiar with using a projector and have an area that will allow images to be visible after being projected from the computer. The students should be in mixed groups according to students' strengths, abilities, and interests. (Example: A child who needs to improve social skills could be placed in a group where he could excel as the Interviewer.)

Procedures/Activities:

- 1.)The teacher will activate prior knowledge by asking students to share information about fossils. As students give this information, the teacher will display it on the overhead projector using a web. (see attachment)
- 2.)The teacher will introduce the word "paleontologist" to the students. This will be done by inquiring through questions such as "What is a person called who studies biology? (*biologist*) What is a person called who plays a piano? (*pianist*) What is a person called who studies paleontology (fossils)? (*paleontologist*)"
- 3.)The teacher will show the student a video of a paleontologist at work.
([Wired Science. Video: Virtual Paleontology | PBS](#))
This website allows students to view paleontologists discovering a new species fused inside metamorphic rock.
- 4.)After the students watch the video, the teacher will ask the students to list in their notebooks some things they observed about paleontologist in the video. (example: some of the tools used, places they were digging, things they found, etc.)
- 5.)The teacher will allow the students to discuss their answers among their cooperative group members.(These groups should be mixed in ability according to strengths and weaknesses in the subject matter.)
- 6.)Students will now have a chance to become a "paleontologist for a day". The teacher will now give each student a paintbrush, a toothpick and a pair of goggles(optional). Instruct students not to put toothpicks into their mouths or play with them and goggles(if using) are to be put on only when their group is called.
- 7.)Call students up by groups. Have each student dig one at a time with a small shovel through the box of sand to find a "fossilized rock" (which is a chocolate chip cookie). Tell students not to eat the cookie!!
- 8.)Each student will take their "fossilized rock" back to their group on a napkin and brush off the excess sand with a "fossil brush" (paintbrush).
- 9.)Using a "fossil pick" (toothpick), students will pick the "fossils" (chocolate chips) out of their "rocks" (cookies).
- 10.)When all students are finished, we will discuss as a class the process of finding the fossils in the activity. The chocolate chips that were picked out resemble true fossils and the indents that remain from the chips resemble molds.
- 11.)After students throw away their "fossil" cookie, the teacher will now pass out a new chocolate chip cookie for each student to eat.

Attachments:**Some files will display [fossil web.doc](#) in a new window. Others will prompt you to download.

[pictureme2.doc](#)
[pictureme.doc](#)
[We Can Dig It.doc](#)

Assessment Strategies:

Students will work in pairs or groups to create an informational podcast about paleontologists. The following four areas will be discussed in each pair or group:

- 1.) What paleontologists do...
- 2.) Tools paleontologists use...
- 3.) Where paleontologists may dig...
- 4.) Things paleontologists may find...

(Please see attachments for a handout that provides a description of the procedure and a checklist. This checklist should be given to students to help them plan, and then the teacher will use the same checklist to assess.)

The teacher can comment on these four criteria in a rubric or checklist created for their unique grouping or pairing in their particular classroom.

Teachers with MAC computers can access this [simple tutorial](#) for podcasting support.

Teachers with PC access can choose an alternative method of recording the interview such as videotaping or audio recording.

Extension:

The students will be informally assessed by completing a "Picture Me" activity that consist of having students to complete the face of a paleontologist with their own and completing a chart expressing what they have learned about paleontologist and what they would like to learn. (See attachments.)

Students will research the "What I Want to Learn" section of their assessment through the use of the following websites:

[Nature.CA](#)

[Ask Kids](#)

Remediation:

Students needing extra assistance after the lesson will be allowed to watch the video and discuss the steps of the "fossil dig" with a peer tutor or a parent volunteer.