

# NTTI Media-Rich Lesson

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## NAME

A Blast from the Past

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## LESSON TITLE

Third Grade

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## GRADE LEVELS

Four thirty to forty-five minute class periods

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## TIME ALLOTMENT

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## OVERVIEW

This is an introductory study on fossils, utilizing the NSRC/STC *Rocks and Minerals* kit, the video “**Fossils: Windows to the Past**”, websites, hands-on activities, and print (such as *Fossils Tell of Long Ago* by Aliki) students will learn what are fossils, how they are formed, and where they can be found. Students will also play matching games (on the Internet as well as with actual fossils) and become more familiar with these organisms, living and dead.

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## SUBJECT MATTER

Science

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## LEARNING OBJECTIVES (from Georgia’s Quality Core Curriculum)

The students will:

- 1) Discuss how fossils are formed; construct a fossil; identify where fossils are formed and discuss how fossils are uncovered. **QCC 3.16**
- 2) Identify and compare similarities and differences in fossils; using pictures, compare various fossils to each other and to the original organism; compare fossils to modern organisms. **QCC 3.17**

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## STANDARDS

National Science Education Standards Earth Science Content Standard C

Fossils provide evidence about the plants and animals that lived long ago and the



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nature of the environment at that time.

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## MEDIA COMPONENTS

PeachStar Video Streaming

***Fossils: Windows to the Past*** – This video is used to introduce to the different kinds of fossils and how they are formed. For this lesson, use the segment “The Types of Fossils and How They Are Formed”.

The Mystery Fossils Website for the University of California at Berkeley:

<http://www.ucmp.berkeley.edu/historyoflife/mysteries/mfarchive4.html> Students view pictures of fossils and then try to guess what they represent. They may then check their answer and read about the original organism.

The Royal Ontario Museum:

<http://romlx6.rom.on.ca/quiz/fossil/index.html> This website from the Royal Ontario Museum offers a wealth of information about fossil formation, collection and preparation. Students can play a game matching living things with corresponding fossils.

ThinkQuest lesson, “2,000 Fossils under the Ground”:

[http://www.thinkquest.org/library/lib/site\\_sum\\_outside.html?tname=J002743&url=J002743/](http://www.thinkquest.org/library/lib/site_sum_outside.html?tname=J002743&url=J002743/) This is an excellent site for students to find out where to find fossils and the difference between vertebrate and invertebrate fossils. Students also may play a game, a simulation of a fossil dig.

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## MATERIALS

### **Per Group of Students**

Sample fossils (such as shark’s tooth, shells, and petrified wood, including some from the ***Rocks and Minerals*** kit)

### **Per Student**

Magnifying lens

A small, hard plastic model of an animal or plant (students may share models)

Self-hardening clay

Handouts

Petroleum jelly

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## PREP FOR TEACHERS

Before beginning the lesson, on each computer bookmark all of the websites and make sure that Shockwave has been loaded. On each student computer, bookmark each web site listed above.



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From videostreaming, download the video clip, “The Types of Fossils and How They Are Formed” from ***Fossils: Windows to the Past***. Check all computers to make sure that the speakers are connected and working for each computer for the audio component of the video clip. Prepare and duplicate all student hand-outs. Set up the group and student materials in basins for easy access.

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### **INTRODUCTORY ACTIVITY: SETTING THE STAGE (Engage)**

1. Organize the class into groups of three or four.
2. Say, “Today I would like to share with you some ‘special’ rocks. Take a few minutes to examine these rocks and find as many ways as possible to describe these rocks. Why do you think I called these ‘special’ rocks? How do you think they were made?”
3. Distribute the basins containing the fossils and magnifying lenses to the students.
4. Say, “Each of these rocks contains fossils. Let’s spend a few minutes and make a KWHL chart as we begin our study of fossils.”
5. Allow about five minutes for students to develop the KWHL chart.

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### **LEARNING ACTIVITIES**

#### Activity 1 : How are fossils formed?

- 1) Before beginning the lesson, cue the video to start at the beginning of the segment.
- 2) Prepare a transparency or slide with the **Focus Questions** in step #3 and distribute a copy of Handout #2 to the students.
- 3) To provide students with a specific task to complete while viewing, the **FOCUS FOR MEDIA INTERACTION** should begin by saying, “Today we’re going to find out where those ‘special rocks’ come from. Does anyone have an idea about how they were made? As you watch this very short video clip, be prepared to tell me what kind of rocks they are, how they are made, and where they can be found.”
- 4) After viewing the video clip **CHECK FOR COMPREHENSION**, re-wind the video so that as each answer to the questions is discussed, that part of the video will be used to verify the students’ answers. Add to the KWHL chart as answers are given.
- 5) Introduce ***Fossils Tell of Long Ago*** by Ailiki. Give students **Focus Questions** (see handout # 1) for the listening activity.
- 6) Read the book and then **CHECK FOR COMPREHENSION** by having a general discussion about fossils, including how, where, and why they are formed.

#### Activity 2: Making Your Own Fossil

- 1) Distribute basins with student materials (clay, hand lenses, petroleum jelly, and plastic models).
- 2) To provide students with a specific task to complete while viewing, the **FOCUS FOR MEDIA INTERACTION** should begin by logging on to the Royal Ontario



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Museum's website, <http://romlx6.rom.on.ca/quiz/fossil/index.html> and saying, "Today we will review what we learned yesterday about how fossils are formed and make our own fossil. As we read about how they are formed, we should follow a similar procedure."

- 3) Click on "To learn how fossils are formed, click here"
- 4) Allow the students to view each step of fossil formation for a snail and discuss the steps.
- 5) This will also be used to Introduce today's hands-on activity by inviting students to make their own fossils. Allow students to choose one of the plastic models, leaves, or shells for their fossils from the basin.
- 6) Instruct the students to lightly spread petroleum jelly over the entire object as one of the students reads the steps to becoming a fossil.
- 7) Students should make a ball with half of the clay and then flatten it.
- 8) Next, the students should press the model into the flattened clay and then cover and press down on the model with the rest of the clay.
- 9) After the clay has hardened, the students should carefully separate the two layers of clay and remove the model.
- 10) Carefully compare/contrast these "fossils" with those from the Rocks & Minerals kit.
- 11) **CHECK FOR COMPREHENSION** by having the students to compare the way their fossils were formed with the process found on the website.

### Activity 3: Identifying Various Fossils and Their Sources

- 1) Before class, set up a station with the original objects and the student-made fossils.
- 2) Assign a number to each fossil and a letter to each object (source).
- 3) As a review of the previous assignment and an introduction to today's lesson, **FOCUS ON MEDIA INTERACTION** by logging in at <http://romlx6.rom.on.ca/quiz/fossil/index.html>, scroll down to the command, "To play a game with fossils, Click here." Lead the students into a discussion of Fossil 1, by saying, "**Look at Fossil 1. On your paper draw any animal or plant that you see in the rock.**" Allow time for the drawing. "**Compare your drawing with that of your partner.**"
- 4) After a short review of the last lesson, allow students to go in groups to match each fossil with its source (see handout #3)
- 5) While some of the students are completing the matching game, others may work in pairs doing a similar activity on the computer.
- 6) To accomplish step 5 and provide students with **A FOCUS FOR MEDIA INTERACTION**, direct students to log in at <http://romlx6.rom.on.ca/quiz/fossil/index.html>, scroll down to the command, "To play a game with fossils, Click here." Students should click on to this link and complete a similar matching game.
- 7) After about ten minutes, the two sets of students should change places with the computer groups going to the station and the students at the station going to the

computer.

- 8) **CHECK FOR COMPREHENSION** by having the students to discuss what methods they used to match the fossils with their sources.



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#### Activity 4: Where Are Fossils Found?

1) Before class, cue the computers for a simulated dig at

<http://library.thinkquest.org/J002743/kcmsim.html>

2) Distribute handout #3 to all students. To provide students with a **FOCUS FOR MEDIA INTERACTION**, say, ***“Today we will try to go on our own fossil dig. The first thing we must do is to choose a location for our dig.”*** Allow someone to offer a location and then click on that particular location. Say, ***“Now choose a tool.”*** Allow a student to choose a tool and click on that tool. ***“Now you will be allowed to work in groups and go on your own fossil digs, Be sure to complete the handout while completing your digs.”***

3) Allow several students opportunity to take part in the dig.

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#### **CULMINATING ACTIVITY**

Bring closure to the activities by inviting the students to go on a class field trip to a nature center or the schoolyard and experience a new dig. Depending on the location, students might find fossilized remains of various plants and animals.

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#### **CROSS-CURRICULAR EXTENSIONS**

Language Arts, Science, and Social Studies

Students will write an imaginary story where they take part in a fossil dig, describing where and what they find. They should also include a possible history of the animal.

See handout # 4)

Students may also enjoy reading about fossils. Some of these readings might spark an interest in dinosaurs as well.

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#### **COMMUNITY CONNECTIONS**

Students may use the internet to *Ask a Geologist* at <http://walrus.wf.usgs.gov/ask-a-geologist/> to help them with any questions they may have about fossils.

A visit to the local museum or a visit from a geologist at a local college would yield a first hand look at a fossil collection.



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**Be a Fossil Hunter**

Name \_\_\_\_\_

If you'd like to go on a fossil dig without leaving your classroom, log onto [http://www.thinkquest.org/library/lib/site\\_sum\\_outside.html?tname=J002743&url=J002743/](http://www.thinkquest.org/library/lib/site_sum_outside.html?tname=J002743&url=J002743/) , sit back, relax, and enjoy your trip.

- 1) Choose the location of the dig.
  - A. a volcano
  - B. a valley
  - C. a sea cliff
  - D. a desert
  
- 2) Tell why you chose that location. \_\_\_\_\_  
\_\_\_\_\_
  
- 3) After clicking on the location, where do you land? \_\_\_\_\_
  
- 4) Click on "Let's Get Going".
  
- 5) Choose your tool for exploration.
  - A. explosives
  - B. jackhammer
  - C. pick
  
- 6) Why did you choose this tool?
  
- 7) Click on the tool and describe what happens. \_\_\_\_\_  
\_\_\_\_\_
  
- 8) Click "Start Over" to continue playing the game.
  
- 9) What conclusions can you draw about digging for fossils? \_\_\_\_\_  
\_\_\_\_\_



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**Fossils: Windows to the Past:** “The Types of Fossils and How They Are Formed”.

1) What are fossils? \_\_\_\_\_

\_\_\_\_\_

2) How are fossils formed? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3) Where are fossils found? \_\_\_\_\_

\_\_\_\_\_

4) What are the different kinds of fossils? \_\_\_\_\_

\_\_\_\_\_



Sample KWHL Chart

**What We  
Know**

**What We  
Want to  
Know**

**How We  
Plan to Find  
Out**

**What We  
Learn**



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### Be a Fossil Detective

Name \_\_\_\_\_

Today you will be serving as fossil detectives. At the Science Center you will find the fossils that your class made. Try to identify what object made each fossil and then write the correct letter beside the numbered fossil.



Fossil #	Object	Letter
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- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_



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In what ways are these fossils alike? \_\_\_\_\_

How are they different? \_\_\_\_\_



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***Fossils Tell of Long Ago***, by Aliko

Name \_\_\_\_\_

1. Describe the huge fish in the story. \_\_\_\_\_

\_\_\_\_\_

2. What is a fossil? \_\_\_\_\_

\_\_\_\_\_

3. How did the fish become a fossil? \_\_\_\_\_

\_\_\_\_\_

4. Some fossils are \_\_\_\_\_ parts of plants or animals that have turned to stone.

5. Some fossils are only a(n) \_\_\_\_\_ of a plant or animal.

6. List at least three different places that fossils can be found.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

7. Do you think that it's important to study fossils? Explain your answer.

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