

Literacy-Based Science Task

Big Idea/ Topic (Science)

Fossils as Evidence

Reading/ Writing Skills

Reading Skill: Finding the main idea and key details

Writing Skill: Write opinion (argument) texts

Standard Alignment

Science Standard:

S3E2. Obtain, evaluate, and communicate information on how fossils provide evidence of past organisms.

a. Construct an argument from observations of fossils (authentic or reproductions) to communicate how they serve as evidence of past organisms and the environments in which they lived.

ELA Standards:

ELAGSE3RI2: Determine the main idea of a text; recount the key details and explain how they support the main idea

ELAGSE3W1: Write opinion pieces on topics or texts, supporting a point of view with reasons.

Table of Contents

1. [Pre-Reading](#)
2. [Reading](#)
3. [Post Reading](#)
4. [Print ready student sheets](#)
5. [Print ready article to read](#)

Pre-Reading: Fossils Tell a Story

Activity 1: A Fossil's Environment

Dr. Walker, a paleontologist, has just returned home from working at a dig site in Mongolia. On his way home, he drops his briefcase, and all of his fossil findings get mixed together. Help Dr. Walker sort the fossils back into their correct environments based on what you observe about their physical features.

Begin by showing students the first image of a fossil and ask if they think it would be found on land or in water. You can show the pictures on the board [Fossil Sample Pictures](#) or print pictures of each fossil for each pair of students and put them in envelopes for students to sort. Students can work in partners or small groups to discuss how they sorted the fossils. Lead students with probing questions:

- What are some body features you would look for organisms that belong in water?
- What are some body features you would look for organisms that belong in land?
- Are any of these fossils hard to identify where they might have lived?
- Could there be any fossils that potentially have lived in both places?

Students can then decide how to sort each of the remaining fossils. If desired, you can give them the checklist of physical features to help determine whether the fossil belonged in the water or land environment. Students can use the [fossil observation](#) organizer to assist in sorting the fossils.

Reading: Dr. Walker's Findings

(Introduce the Reading)

Tell students: Good job kids, you just used skills a paleontologist would use to look at evidence to understand the past. Now you all are going to read a journal entry that Dr. Walker wrote while he was at his dig site in Mongolia. In this journal, you will get a chance to get a first-hand experience of a paleontologist's work and the importance fossils have on learning about the past.

Reading Skill: Finding the main idea and key details

Before the students begin to read, make sure to review the standard of determining the main idea of what they are reading or what the text is mostly about. Oftentimes the author can give the main idea by stating it somewhere in the first or last paragraph. It can also be found by looking for words or phrases that are repeated throughout the text. After an initial read, have students focus on the first paragraph. See if they can identify the sentence "We can use fossils to get clues about the past" as a statement of the main idea.

Once a main idea is determined, it needs to be supported with key details. Students will want to look for details that specifically relate to the main idea. In this case, each detail should be an example of how fossils give clues to the past.



You can relate the process of finding the main idea back to the pre-reading activity on how the students used details from the pictures to determine the main environment of the fossils. Ex. The picture of fossil fish's main environment would be the water and some details from the picture would be that it has no legs, fins on the top, back and bottom of its body, and it is on the smaller side.

As students read, they can record their ideas and thoughts onto the main idea/key details graphic organizer. [Main Idea Graphic Organizer](#)

Post-Reading: A Paleontologist's Opinion

Writing Skill: Write opinion (argument) texts

Activity 1: The Paleontologist in You

Have the students use the following [dragonfly opinion worksheet](#) to write a letter to Dr. Walker about their opinion of the last fossil picture and which environment (land or water) it would have lived in based on the observations they see. Guide the students into making connections and using details to determine how this might be similar to current dragonflies. Make sure to include reasons (details) from the picture that support your argument.

[Return to the table of contents](#)

Print Ready Student Sheets

[Main Idea Graphic Organizer](#)

[Fossil Observation Organizer](#)

[Dragonfly Opinion Worksheet](#)

Georgia Department of Education

THIS WORK IS LICENSED UNDER A CREATIVE COMMONS ATTRIBUTION - NONCOMMERCIAL - SHAREALIKE 4.0 INTERNATIONAL LICENSE



Dragonfly Opinion Piece

Directions: Write a letter to Dr. Walker about your opinion of the fossil picture below. Which environment (land or water) would it have lived in based on observations? Make sure to include reasons (details) from the picture and your reading that support your argument

Make observations about the Dragonfly fossil below:



Georgia Department of Education

THIS WORK IS LICENSED UNDER A CREATIVE COMMONS ATTRIBUTION - NONCOMMERCIAL - SHAREALIKE 4.0 INTERNATIONAL LICENSE

10.15.2022 Page 4 of 6



[illegible]

THIS WORK IS LICENSED UNDER A CREATIVE COMMONS ATTRIBUTION - NONCOMMERCIAL - SHAREALIKE 4.0 INTERNATIONAL LICENSE



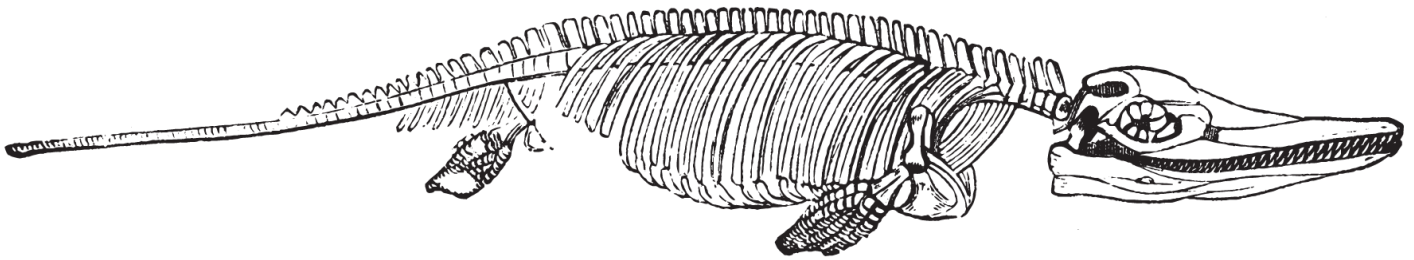
Excerpt from Dr. Walker's journal from the Gobi Desert in Mongolia:

Today was a good day at the dig site. The weather was perfect, and we found a new fossil! We can use fossils to get clues about the past.

On a previous dig, we found seashells and small pieces of coral! Since these are water animals, we can tell that this site used to be covered by an ancient lake or sea.

Over millions of years, the environment changed. The area became a mixture of lakes and dry land. Around 80 million years ago, dinosaurs moved in. This area is the world's largest dinosaur graveyard. It is amazing how many whole dinosaur fossils we have found! The dinosaurs were buried by falling sand dunes or heavy rains. Since their bodies were buried, other animals didn't have a chance to eat their bodies.

This morning we began working on a new dinosaur fossil. I sketched the fossil below. The fossil had flippers and a long tail. The flippers and tail look similar to animals that live in the water now. That suggests that our fossil came from a dinosaur that lived in water.



Just last week, in a site nearby, we found a fossil that was similar to a modern pig. It had thicker bones, though, so we think it weighed more than a pig on a farm. Its legs were short, so it may not have been a fast runner. The fossil also had sharp teeth. Animals with sharp teeth usually eat other animals, so we think this pig-like animal did, too. We have sent that fossil to the lab for analysis. We are now waiting on the lab results to see if it is related to a pig.

Finding both the water and land fossils in the same area shows this area had both water and land in the past. I can't wait to see what new fossils tomorrow may bring!