

The Art of Fossils



Paleontologists make observations of fossils to help them understand organisms and their past environments over geologic time. Through this activity students will make observations, create a hypothesis, and develop their paleo art skills.

Grade Level	6th-8th Grade
Activity Length	1-2 Class Periods
Materials	Paper and Writing Utensil Computer Basic Art Supplies

Disciplinary Core Ideas

(LS3) Heredity

(LS4) Biological Evolution

(ESS2) Earth's Systems

SEEd Standards:

Standard 6.4.4 Construct an argument supported by evidence that the stability of populations is affected by changes to an ecosystem.

Standard 7.4.2 Obtain, evaluate, and communicate information about specific animal and plant adaptations and structures that affect the probability of successful reproduction.

Standard 7.5.2 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth, under the assumption that natural laws operate today as in the past.



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The Art of Fossils



Student Name: _____

Scientists learn a lot about the habitat that an animal or plant lives in by looking at the structures on its body that help it function and survive. For example, an animal with webbed feet likely lives in a wet environment because webbed feet are good for swimming. A plant with big flat leaves likely comes from an environment where it struggles to get lots of sun because big flat leaves are good at catching lots of sunlight.

In this same manner of study, scientists can also tell a lot about the environments of the past by looking at the structures of fossils left behind.

The following are all fossils that were found in Antarctica. They are roughly the same age (246-242 million years). Use the photos of the fossils below and make observations about the structures of each fossil. List at least three structures for each fossil.

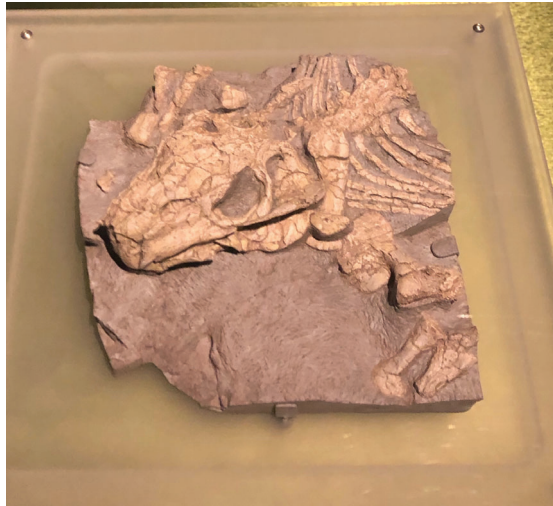
Antarctosuchus (animal)
- top half of skull



Observations



Lystrosaurus (animal)
- skull and upper body



Observations

Neocalamites (plant)



Observations



Glossopteris (plant)



Observations

Based on your observations, what environment do you think these plants and animals came from?

What structures did you observe that make you think that these plants and animals could function in the environment you chose? Explain the evidence for your environment hypothesis below.



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Use the space below to sketch an example of the environment you think the fossils are from. Make sure to include details from your observations. Scientists often use artist renderings to help explain their discoveries.



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[Watch the PBS Eons video “When Antarctica Was Green”](#) about Antarctica’s climate in the past. While this video mainly focuses on a more recent time in Antarctica’s geologic history, pay attention specifically to what it has to say about how this is similar to Antarctica’s climate during the time of the dinosaurs (around 2:28 to 2:38).

Was your hypothesis about Antarctica’s climate correct? Do not worry if your hypothesis was wrong, much of science is correcting our assumptions and updating our hypotheses as we learn more.

Why has Antarctica's climate shifted over time?

How are today’s causes of climate change different from previous events that led to Antarctica's warming and cooling during different times of history?



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EXTENSION:

It is much easier for the bones and hard parts of ancient organisms to be preserved as fossils than it is for soft tissues like skin and fat, so sometimes scientists have to make educated guesses about what ancient animals and plants looked like.

Choose one of the animals and/or plants listed in this activity and sketch what you think it would have looked like while alive. Do you think it had fur or feathers? Smooth or rough skin? What color(s) was it? Did it have soft parts like humps that may not have been preserved? What structures do you think it had that would have helped it survive in its environment? Do not worry about making a perfect picture.

[For more about paleo art, check out “Welcome to Jurassic Art” from 99% Invisible.](#)



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