



Junior Paleontologist

Grade Level

Grade 5

Objectives

This activity is designed to start your at-home student in recognizing themselves as scientists and in thinking critically about problem solving. The goal is to teach concepts through discovery and to encourage using scientific thought processes. Feel free to adapt the lesson provided to better suit your student's abilities. Take these ideas, make them your own, and your student will have a greater chance of success.

Background information

Fossils are traces of plants and animals that lived long ago. Animal fossils are made when an animal dies and is covered by mud, sand, or another type of sediment. The soft pieces of the animal decompose, leaving the bones. Over time, the sediment hardens into rock, trapping the bones. The bones eventually also decompose, and minerals take their place, leaving rocks in the shape of bones.

Paleontologists are scientists who study organisms that lived a long time ago. They use fossil evidence to understand what types of plants and animals lived millions of years ago, what those creatures may have looked like, and how they may have lived. Fossils can tell paleontologists a lot about the size and general shape of an animal.

Paleontologists can compare fossils to the traits of living animals to make inferences about how the extinct animal may have lived. An inference is a reasonable conclusion based on evidence and prior knowledge. For instance, if a paleontologist found a fossil with flat teeth, it is likely that the animal ate plants because we know that modern-day animals with flat teeth tend to be plant eaters. If a fossil had sharp, fang-like teeth, it is likely that the animal was a meat eater. Inferences like this are used a lot by paleontologists.

Set-up

Before beginning this activity with your at-home student, cut out the fossil pieces from the worksheet below. Put them in an envelope or an opaque cup. Your student will pull a fossil from the envelope or cup one at a time to make inferences about the type of animal it was. It is best if they do not see all the images at the same time. Once the set-up is complete, go through points 1 and 2 below. Then hand students the attached

worksheet for them to complete the activity. They should be able to complete the activity on their own with minimal help from you.

Procedure

1. Explain to your student that being a paleontologist is not easy. Fossils can be difficult to find; generally, only small pieces are found at the same time. It is very rare to find fossils of complete animal skeletons. Usually there are pieces missing. Paleontologists may only find a small piece of a bone, such as a tooth, or part of an arm. They will need to figure out what the animal may have looked like from these small pieces. Sometimes, when a paleontologist unearths more fossils, they realize that their original inferences were not correct. They need to change what they think the animal looked like based on new evidence.
 - a. One example of this is from a dinosaur called an iguanodon. This was one of the first dinosaurs to be discovered. One iguanodon fossil that was found was a cone-shaped spike. Because it looked like a horn in modern days animals, this was placed on the nose of the iguanodon skeleton (like a rhinoceros). Later evidence was found that made paleontologists realize that this bone was actually the thumb of the dinosaur.
2. Tell your student that they are going to pretend to be a paleontologist on a dig. Their paleontologist team just found fossils that they think may belong to an animal that has not yet been discovered. They will be looking at the fossils one by one, as they are dug up, to try and figure out what the animal may have looked like.

Standards

Ohio Academic Content Standards	
Grade 4 Life Science Topic: Earth's Living History	Fossils can be compared to one another and to present-day organisms according to their similarities and differences.

Junior paleontologist



Name: _____

You are a paleontologist on a dig with a team of other paleontologists. Your team just dug up a fossil from an animal that has never been discovered before! It is your job to try to figure out what the animal may have looked like by examining each fossil one at a time.

1. Reach into the envelope or cup that was given to you and pull out one piece of paper. Do not pull out more than one yet. This piece of paper has a picture of a fossil that your team discovered. It is the first fossil that was dug out of the ground. Write the number 1 on this fossil to label it.

2. What part of the animal do you think it came from (such as an arm, a tooth, or a horn)?

3. Why do you think so? Remember that paleontologists often base their reasoning on what modern animals look like.

4. Pull out the next fossil. Write the number 2 on this fossil.

5. What part of the animal did it come from?

6. Why do you think so?

7. Does the discovery of this new fossil change anything about what you think about the previous fossil? For instance, if you thought that the previous fossil was a horn, do you still think that, or do you think it may be something else?

8. Continue pulling out fossils one at a time, labeling them with a number. In the boxes below, write which part of the animal the fossil came from. Consider whether you need to change any of your original inferences based on your new evidence.

Fossil Number	Part of animal you think it came from (ex. Arm, tooth, leg, etc.)	Has your idea of which part of the animal the fossil came from changed at all as you found more fossil evidence?
3		
4		
5		
6		
7		
8		
9		
10		

11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		

9. Once you have examined all the fossils individually, try to put the pieces together. What do you think the entire animal looked like?

- [illegible]



Junior paleontologist

(Cut out each fossil and place it inside of an envelope or cup prior to starting the lesson.)

