

Discovering Dinosaurs Activities: Paleo CSI

This activity is designed to expose students to the idea of a dig site and to give them an idea of how paleontologists determine what happened at a dig site.

Attached is a sample site map that is loosely based on a dig site in the Cleveland-Lloyd Quarry in Utah. Before you begin, as a class, prepare the attached dinosaur field guide. You may choose to have your students add to the dinosaur field guide through internet or library research. Include pictures from your research. There are some possible resources listed below. We have included some general information for your usage.

While there are not necessarily right or wrong answers when your students are interpreting the site map, included here are some follow-up questions and important background information that will help guide them to what paleontologists have concluded about this area. Listed below is some information in response to each question for your use. (Depending on the level of your students, you may choose to allow them to interpret the map on their own without the attached questions first. Explain after the exercise that when scientists were just beginning to study dinosaurs—like Joseph Leidy studying *Hadrosaurus foulkii*— they weren't even sure what kind of animal they were working with. Interpretation was hard. Then, offer guidance in the form of the questions and follow-ups.)

1. What fossils do you see here? How can you tell? Do you think they came from one animal or many animals? What animals do they come from?

There are Stegosaurus and Allosaurus fossils here. Look for the Stegosaurus plates and spikes. You can also see allosaurus skulls and claws. The hip bones of each animal are distinctive, and you can notice an obvious size difference between these two animals.

2. Can you figure out how many of each type of animal was found here? How?

To figure this sort of question out, advise students to pick one type of bone: skull, femur, hip bones, etc. In this case, the easiest is to choose either the skulls or parts of skulls. There are three Allosaurus skulls and one Stegosaurus skull. This is a pretty good indication of how many individuals were at the scene. Ask the students if we can say without a shadow of a doubt that there were definitely four individual animals at this site at the time the animals died.

3. Were the dinosaurs at the dig site herbivores or carnivores? How can you tell?

The Stegosaur was most likely an herbivore and the Allosaurus was most likely a carnivore. Looking at the skulls on the map, the beak-like mouth of the Stegosaur is better suited to eating plant matter (like a modern-day tortoise mouth) while the sharp teeth of the Allosaurus would more likely be used to tear meat (like a modern-day tiger).

4. Are there more carnivores or herbivores at this dig site? What is the ratio? (How many carnivores versus how many herbivores?)