Mystery Bones Activity

Possible Scenario

1. Have students form group of three or four.
2. Give students a short introduction like “there was a site where fossilized dinosaur bones were found. We are very luck to collect them. We flat them out and put them in an envelope.”
3. Provide each group with an envelope that includes paper bones.
4. Ask students to put the dinosaur bones together in a logical order using their prior knowledge about skeletons that they have learned through the owl pellet and disarticulated bones activities.
5. Ask students to discuss and describe how this dinosaur moved around based on the skeleton arrangement that they come up. Students would feel familiar with all the bones since these bones are similar to the ones from owl pellets and disarticulated skeletons. However, they would soon find that these bones don’t seem to fit.
6. Ask students to make an oral presentation in which they describe how the dinosaur moved around based on their skeleton arrangement. Students may say that this animal is a swimmer or a flyer.
7. Ask students, if any, whether their prior knowledge affected their inferences they came up with about how the dinosaur moved around. You might want to explain that paleontologists deal with animals that do not currently exist so they have to make inferences from the collected data and their prior knowledge often influences their interpretations of the data.
8. Discuss why students had different inferences (e.g., a swimmer versus a flyer) from the identical set of bones. You might want to ask students “Do you think scientists can face a similar situation? Why do you think so?” “If yes, how can they solve such a difference?” Explain to students that all too often scientists may reach differing conclusions based on the same evidence, just as the students have done in this activity.

9. Present students with Figure 1 and 2 that indicate the paleontologist's inference from the mystery bones. Students would be surprised at how far off their inferences were.
10. Make it explicit to students that what they have done is very similar to what paleontologists and other scientists that investigate fossils often do. You can conclude this activity by showing Figure 3 below on the overhead. Ask students about what they think the cartoon is trying to tell us. Scientists attempt to reconstruct the past from artifacts they discover.

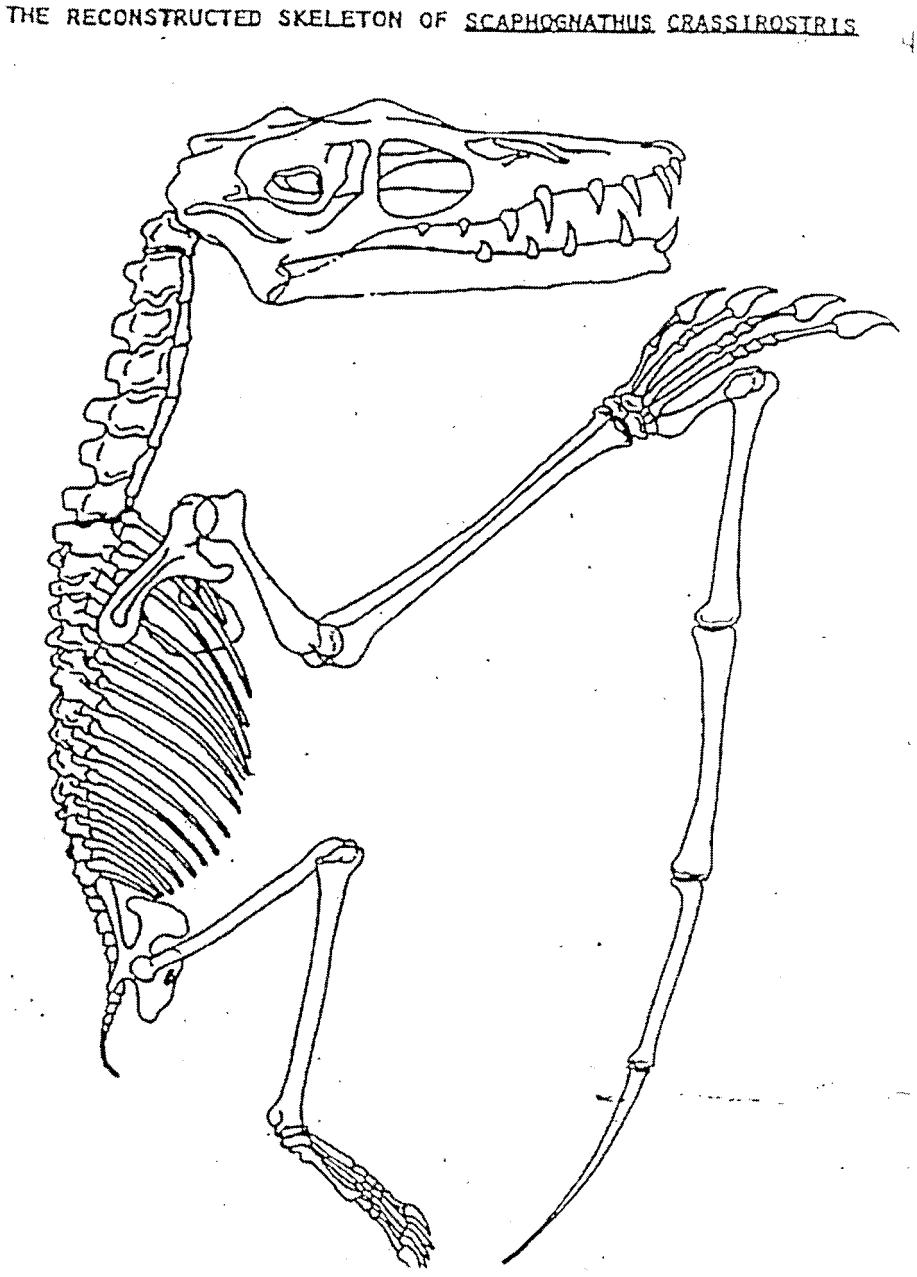

Figure 1: Paleontologist's Bone Arrangement

Figure 2: Paleontologist’s Imagination

Figure 3: What Paleontologists Do