

Coprolite Investigation

Name: _____

Directions: You've been asked to join a scientific team studying coprolites, or fossilized feces, to learn more about the daily habits and diets of dinosaurs from the late Cretaceous. Your job will be to study coprolites from the Two Medicine and Kaiparowits Formations and look for fossilized clues about the habits of dinosaurs from that time. You'll also try to solve the mystery of why it has been reported that pieces of rotting wood have been found in the coprolites of these herbivorous dinosaurs when it is thought that wood was not an important part of their diet.

Before you cut your coprolite into cross sections, record initial observations of your coprolite below. Be sure to also sketch your coprolite in the space provided. Use the key below to identify the materials you can observe from the outside of your coprolite.

- A. Small shell noodles (snail shells)
- B. Pieces of bark or softer wood that may be beginning to decompose Oatmeal (pieces of invertebrates)
- C. Pieces of tri-colored Rotini (fungi)

Initial Observations Of Your Coprolite From The Kaiparowits Formation in Utah	
Coprolite Is From What Formation:	

Directions: Follow the coprolite dissection procedure to create cross sections of your coprolite, then sketch and describe your coprolite cross sections. Label any important pieces or materials that you find within the fossilized feces. Repeat the process to get a clear picture of the origin of the different materials found in your coprolite. Reassemble your coprolite after you finish with each cross section if possible for future classes to use.

First Cross Section Of Your Coprolite From The _____ Formation

Second Cross Section Of Your Coprolite From The _____ Formation

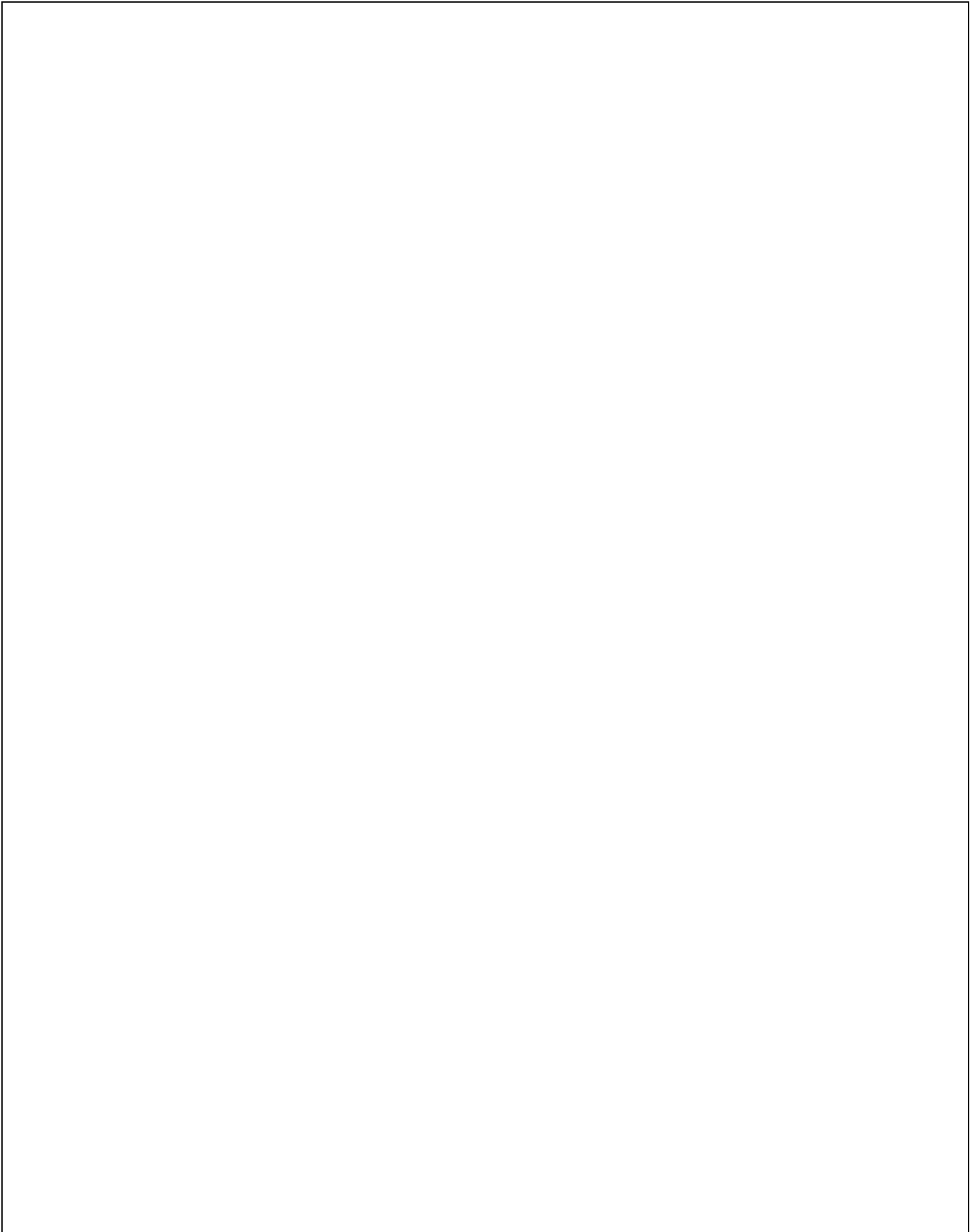
Third Cross Section Of Your Coprolite From The _____ Formation

Directions: By yourself, or with a partner who investigated coprolites from the same formation and create a summary of what you found within your coprolite. Be sure to cite specifics such as what exactly you found, how much of it, and where.

Directions: Create a hypothesis based on your coprolite summary about the behavior of this dinosaur and its diet and feeding behavior. Be sure to address important questions about what type of things did the dinosaurs eat, why was it eating them, and what was the main ingredient in its diet? Be sure to use evidence from your coprolite exploration to support your claim.

Directions: Share your findings and hypothesis with your group who were studying coprolites from the other formation. After sharing your findings with each other, create a group conclusion about the habits of these dinosaurs and a hypothesis as to why these herbivorous dinosaurs regularly had rotting wood in their feces. How do the findings from the other formation support or conflict with your original hypothesis? Be sure to provide specific examples from the exploration of the coprolites from **both** formations to support your claim.

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Reflection Questions:

1) Coprolites helped support an important discovery about herbivorous species. What could be discovered about carnivorous dinosaurs using their coprolites?

2) What do you think coprolites from dinosaurs that live off of scavenging such as vultures today could reveal about how those organisms lived?

3) 20 years from now, while working in your paleontology lab investigating the coprolites of carnivorous dinosaurs you notice they contain a significant amount of plant material. Make a hypothesis about how this plant matter ended up in the feces of a carnivorous dinosaur?