

**Needed/Useful Materials:**

Tweezers

Tray, plate, or mat

Magnification (could be a hand lens or a magnifying glass, or a clear glass cup)

Paper and writing utensil for notes

**Part 1 Directions:**

1. Carefully pour your cup onto a tray, plate or mat. Try to spread your sediment out evenly.
2. Paleontologists call the dirt and rock we find fossils in matrix. On your paper, describe what the matrix is like. Here are some questions to answer about your matrix:
  - a. What shape are the individual pieces? Geologists call these clasts.
  - b. What colors can you see?
  - c. Is it damp or dry?
3. After you get a feel for what the matrix is, look for things that are unusual. Some characteristics that can help you find fossils are:
  - a. Colors that are different than the surrounding matrix.
  - b. Patterns that don't match the matrix.
  - c. Larger objects in the matrix.
  - d. If you are having trouble finding fossils, check out the image guide on The Mammoth Site website! This is also a great tool to identify fossils you have already found.
4. When you find fossils, separate them into the clear canister provided. You should find at least four fossils.
5. After you have found all the fossils in your sample, properly dispose of the matrix. The best way to do this is toss outside it in your sandbox or flowerbed. Please keep in mind that sand can damage plumbing
6. Draw what you think your animal would have looked like before it became a fossil.

**Part 2**

Small fossils like those you found today are extremely important to the science of paleontology. Small animals and plants are more sensitive to their environment. Paleontologists use these small fossils to get a better idea of how the environment has changed over time. Let's use the fossils you found to get a better idea of where this sediment might have been in ancient times. Use the following questions to get thinking about ancient environments

1. What fossils did you find?
2. Where did those animals live?
3. Let's assume those fossils were found in South Dakota. Is there an environment nearby these animals could have lived in?
4. Has the environment in that area changed? What evidence do you have to support your position?
5. Draw a picture on the back of this page of where you think these animals would have lived.