Gathering Supplies:
- Clear Cup or Jar
- Spoon
- 2 Different Types of Pudding (different colors)
- Crushed Oreo Cookie
- Crushed Graham Cracker
- Coconut Flakes
- Green Food Coloring
- Chocolate Chips, Small Candy (jelly bean) or Cereal

What Can Layers in the Ground Tell Us?

Moved by wind, rain, and time, layers of dirt can slowly cover an area. These different layers in the ground are called strata. Stratigraphy is a way of studying and dating artifacts found in the different strata. This is one of the relative dating techniques that archaeologists use to tell how old artifacts are at an archaeological site.

What is an artifact?
An artifact is anything made, modified, or altered by human use. From glass bottles or a child’s toy to a prehistoric arrowhead or grinding stones for food processing.

Relative dating is a way of telling if an artifact is older or younger than another artifact. So at a site new dirt is always laid down on top of older dirt. The deeper you dig, the further back in time you go. Artifacts found above other artifacts can be interpreted as younger than those below. Different strata can represent different age ranges...sometimes a stratum might only be a few dozen years older than those around it, sometimes it can be hundreds or even thousands of years older. Understanding how artifacts have changed through time helps archaeologists understand the changes in the cultures that created the artifacts.

Photo is of stratigraphy at Harpers Ferry National Historic Park from nps.gov. Photo by Paul A. Shackel, University of Maryland.
Try This! Make your own editable site stratigraphy!

For this activity get the whole family involved in making a yummy treat. Have an adult help you pull together ingredients that you can use to build your site stratigraphy. Two different types of puddings, crushed graham crackers or cereal are going to be the dirt layers. Chocolate chips and candy will be artifacts. The crushed Oreos are carbon layers, or areas that have been burned, maybe a site feature like a fire pit.

First, put the coconut into a plastic zip lock bag with a few drops of green food coloring. Shake the bag until the coconut is a green color. This is for the top grass layer.

Next pick your first layer of dirt. Maybe you choose crushed graham crackers, or chocolate pudding. This layer is at the bottom of your glass so it is the oldest layer. Let’s say this layer dates to a time before European contact when Native Americans lived in groups and would travel with the seasons for hunting and collecting plants for food. Sprinkle some crushed Oreo cookies for a fire pit and pick a couple of pieces of candy to be the artifacts that are associated with this stratum. Maybe they represent pieces of pottery or lithics (stone tools).

Now add a different layer of pudding. This is a newer strata. This level is from the early 1800’s and the first European immigrants are building homesteads and farming the land. For this layer we no longer find candy but instead chocolate chips for the artifacts from this time period. Maybe the artifacts are a china tea cup, horse shoes or thick glass bottles.

Pick one more layer of pudding. This would be the most recent stratum, maybe the beginning of a small town. With artifacts like a 1940’s Coke bottle, bricks or an old car part. Then top your site with a layer of coconut for grass at the present time period.

Now take your spoon and excavate back down through time. Enjoy eating each stratigraphic layer!

Present Day Strata
More recent artifacts
Older artifacts and strata

Archaeological Site Stratigraphy