



Home Lesson

Edible Stratigraphy

Appropriate Age or Grade Level: **Pre-K to 6**
Estimated Duration: **1 hour**

Objectives/Key Concepts: Introduce the concept of stratigraphy, fossilization and excavation.

Materials:

- Chocolate Pudding – 1 box prepared in advance
- Vanilla pudding – 1 box prepared in advance
- Oreos – crushed (soil) 3 Oreos
- Graham crackers – crushed (sand) 6 graham crackers
- Gummy dinosaurs (1 per person)
- Bowls for the above materials
- Spoons
- Napkins
- Clear plastic cups
- Clear straw

Instructions:

1. Organize each layer into its own bowl: chocolate pudding, vanilla pudding, Oreos and graham crackers. No touching (or eating) materials yet!
2. Now it's time to get ready to bury a dinosaur and excavate it back out! First, cast your mind back to the late Cretaceous Period, about 68 million years ago, when dinosaurs still roamed the Earth. A lone dinosaur is wandering through the wilderness of what is now Montana, searching for water.
3. Lay down the soil the dinosaur is walking on. Put down a layer of graham cracker in a cup to represent the bedrock.
4. Now put down a layer of chocolate pudding to represent the soil.
5. On top of the chocolate pudding, add a layer of Oreos to represent the topsoil the dinosaur is walking on.
6. Unfortunately the dinosaur didn't find the water it needed and has died. Lay your dinosaur down in your cup on top of the topsoil.
7. The dinosaur ends up laying in the same spot for a while, but was quickly covered by a catastrophic landslide! Cover your dinosaur with the vanilla pudding.
8. After the mudslide settles, a new layer of soil begins to form over a period of millions of years. Add a layer of chocolate pudding, followed by another layer of Oreos.
9. Fast forward to present day. Now you're a paleontologist working for Cincinnati Museum Center doing field work in Montana. The first thing you do is to take a core sample. A core sample is basically a tube of dirt that's taken back to the lab for testing.

10. Use your straw to gently press down into the “ground” on the outer rim of your cup. When you remove the straw you should clearly see layers of “earth” in the straw. Set this aside. Our paleontologists can now begin their excavation.
11. As you begin to dig into the soil, you find a dinosaur! Someone may ask how old that dinosaur is and how you know. A good way to get an approximate date is through stratigraphy. Because you dug down slowly as you went, you should know about how many layers deep that fossil is located, giving you some indication of how old it is. But to get an exact date you need to take your core sample back to the lab and locate the layer the dinosaur was found in. Using radiometric dating you’d be able to have a pretty good idea of just how old your dinosaur is.
12. Now, since you’ve earned it, finish excavating your dig site. Enjoy!

Background Information:

- **Core Sample:** A cylindrical section of (usually) a naturally occurring substance.
- **Stratigraphy:** A branch of geology which studies rock layers (strata) and layering (stratification).
- **Relative Dating:** The science of determining the relative order of past events (i.e., the age of an object in comparison to another), without necessarily determining their absolute age, (i.e. estimated age).
- **Absolute Dating:** The process of determining an age on a specified chronology in archaeology and geology.
- **Radiometric Dating:** A technique used to date materials such as rocks or carbon, in which trace radioactive impurities were selectively incorporated when they were formed.

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