Art Meets Science

Mason Jar Stratigraphy

Stratigraphy is the analysis of the order and position of buried fossils or archaeological remains. In this activity inspired by sand art, explore stratigraphy and rock formation by creating a model of sedimentary layers and embedding each layer with fossils.

First, gather at least 3 different types of sediment for your sedimentary layers. You can purchase colorful craft sand or you can use materials you already have around the house like sand, sugar, rice, coffee grounds, lentils, or any other sediment-like material.

Now, with your students, brainstorm how to represent the following fossil groups using commonplace objects: **early sea life** (like that shown on p. 16-17 of *A Stone Is a Story*); **dinosaurs** (p. 20-23); and **mammals** (p. 24-25). Page back through *A Stone Is a Story* to look closely at these creatures. Gather materials to represent them. You can use small objects such as beads, dried pasta, bottle caps, or plastic figures.

Once you have your materials, label your fossil types: **early sea life**, **dinosaurs**, and **mammals**. Talk to students about which of these fossil types is the oldest. Encourage students to refer to *A Stone Is a Story* for clues. Discuss which fossils should be in the first layer of sediment, which in the next, and which in the layer closest to the surface. (Remember, the deeper you dig, the older the fossils. Early sea life is the bottom layer, the middle layer is dinosaurs, and the top layer is mammals.)

Assemble your sedimentary rock! First, pour about half of the first type of sediment into the jar. Explain that this sediment is being transported here over time by wind, water, gravity, and moving ice. Then drop in the early sea life fossils. Explain that animals living at this time eventually die and leave their remains behind. Add the rest of the first type of sediment to complete the layer.

Repeat with each layer. Explain that the pressure of all these layers packs the sediment down, turning it into rock. Some of the remains left behind also turn to rock (i.e., they become fossils). Learn more about this process in the back matter of *A Stone Is a Story* (p. 36-37).

Once you're through, ask students:

How might these buried fossils become exposed?

If someone were to dig down through these layers, which fossils would they find first?

Which would they find last?

Explain that all models show some aspects of a process or phenomenon while hiding other aspects. Ask students what this model shows and what it does *not* show about the formation of sedimentary rock and the fossils within it. Brainstorm other ways to model this process.

More activities available at: www.lesliebarnardbooth.com/foreducators