

## **Archaeobotany**

### **Standards Covered**

#### **NGSS:**

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

#### **Common Core:**

6.SP.B.5 Summarize numerical data sets in relation to their context.

SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.

4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.

MP.4 Model with mathematics.

### **Guiding Question**

What can scientists learn by studying seeds from ancient plants? How do scientists collect ancient seeds?

### **Procedure**

[Video - Watch how float samples are collected with Larissa](#)

[Video - Watch as Kathleen explains how soil samples are separated](#)

[Video - Watch as Kathleen explains how soil samples are stored](#)

Junior Archaeologist Assignment

Interactive Homework

## Word Wall

Botany -The study of plants (archaeobotany is the study of ancient plants)

### Junior Archaeologist Assignment

Float your own soil at home!

First, find a clear plastic cup that has a lid on it. This can be a clear cup from a fast food restaurant or even a clear Tupperware container from your house.

Next, collect soil from any location around your house. Fill your clear container about one-third the way full of soil and label the location your soil came from (make sure you use a dry erase marker if it's on Tupperware!). Fill the rest of the container up with water, put the lid on, and draw what your soil sample looks like sitting in the water.

When you are done recording your drawing in your lab book, shake the container well enough to mix up the soil and water really well. Let your container sit somewhere safe for 30 minutes and let the material inside settle. After 30 minutes, take the lid off your container and look to see if you have anything floating on the top of the water. Draw what you see in your log book. Make sure to measure the depth of each layer (heavy sediment layer at the bottom, water in the middle, and the light sediment at the top) and record your measurements on your drawing. Be as detailed as you can about what the layers look like.

After you have made your observations, you will make some inferences about what was in your soil. Why do you think some floated while some sank to the bottom? Do you think you have the same things in your soil as our archaeobotanist had in her soil sample? Why or why not? Record your thought in your logbook.

Keep your soil in your container that is labeled with the location you collected it from and keep it in a safe spot. Repeat all the steps above with soil from another location and label where you collected it. Compare and contrast how your soil samples look when you put them next to each other after your second sample has settled in your log book, including your detailed drawing and measurement of the different layers.

### Interactive homework

Collect a variety of different types of fruits you have around your house and locate the seeds in each fruit. How do they look alike? How do they look different? Does the size of the seed indicate the size of the plant?

An apple and an orange are very similar in size. Cut both of these fruits open with a parent and examine their seeds. Are their seeds the same size, color, and texture? Why do you think this is?

Parent discussion-If a scientist found these seeds at a dig site 1,000 years from now, what could they tell about your family's diet? What could they tell about the location where you live? What could they infer about the food sources available?