

Details

- 🌐 Arctic
- 🕒 Less than a week
- ✅ Download, share, and remix
- ✍ Middle School and up

Sediment Cores: Clues to the Past

Overview

The lesson will be in two parts:

Part one will involve the students making layers of sediment with clay also including particles (such as beads to represent pollen, etc.) and then they will make core samples using a drinking straw as a coring tool.

Part two will involve the class taking a mud core sample from one of the ponds found on campus with a coring tool (See Sediment Coring with Students lesson plan and resources in this Google Drive provided by PolarTREC teacher Mark Goldner: <http://tinyurl.com/polartrec-sediment>).

Objectives

At the end of this lesson, students will learn how to use sediment cores to determine what the climate was like over a period of time.

Lesson Preparation

An understanding of annual cycles and varves.

Procedure

Students make layers of sediment (different colors) with varying colors of beads to represent pollen grains. They then take 'core samples' from the layers that they have made, illustrate the sample and interpret them.

Collect sediment cores from an on campus pond.
Cut and describe the core based on student observations.

Materials

- Clear drinking straws
- Clay or play-doh
- Colored beads (very small)
- Colored pencils (corresponding to colors of clay and beads)
- Rulers
- Chest waders
- PVC coring device (plans for device are included in the Google Drive link)
- Example of Core Description and blank sheets (also in folder)



Extension

Additional lessons found in PolarTREC Google Drive folder:

What Happened at Lake McCarrons?
Climate Change in the Sahara
Climate Change at Lake El'gygytgyn
Ocean Sediments and African Rainfall

Resources

Google Drive Folder created by PolarTREC teacher Mark Goldner:
<http://tinyurl.com/polartrec-sediment>

Assessment

Students will illustrate the core samples on both the clay/beads core samples as well as the pond sediment samples and interpret the layers.

Author / Credits

Robert Carson of Skyview High School in Soldotna, Alaska created this lesson plan as a capstone project for the 2016 teacher training course entitled: Climate Change: Seeing, Understanding, and Teaching, held in Denali National Park. The course is facilitated by the Arctic Research Consortium of the U.S. (ARCUS) in partnership with Alaska Geographic and the National Park Service.

This two part lesson was adapted from an idea from an on-line source (https://www.hws.edu/fli/pdf/lessons_sediment.pdf) and the Polartrec folder previously listed.

Standards

ESS2.D Weather and Climate
ESS3.D: Global Climate Change
ESS1.C The History of Planet Earth
ESS2.A Earth Materials and Systems

Alaska Science Standards
(6-8)D1 SD3
(9)SA1.2