



Description

In this lab students will learn how to use pollen as a forensic tool to create a timeline showing where Ötzi the Iceman may have been for the last 36 hours of his life. During the laboratory investigation, students will use compound microscopes to view pollen on prepared microscope slides, and a key to identify the plants of origin. Next, using digestive timing and placement of pollen samples throughout the digestive system, students will discuss Ötzi's movement in the Ötztal mountain range over his last few days.

Materials and Equipment

- Prepared microscope slide #1 (Pine and pollen)
- Prepared microscope slide #2 (Mixed pollens)
- Prepared microscope slide #3 (Pine and pollen)
- Compound microscope

Before Class:

- Print for each student:
 - Draw Pollen Worksheet
 - Pollen Key
- Set up a workspace with the microscope, slides, worksheet, and a pencil.

Procedure:

1. Distribute prepared microscope slides 1, 2, and 3 to each pair of students sharing a compound microscope.
2. Have students view each slide and record observations on the observation sheet.

NOTE: the slides they will view contain the following:

Slide #1 – Pine pollen

Slide #2 – Mixed pollen (valley)

Slide #3 – Pine pollen

For the best results, each slide should be viewed at 100X or 400X magnification. Encourage students to take the time to carefully observe and record the specific shapes of several pollen grains from each slide.

3. Once students have identified the pollen from the key, discuss how the placement of each sample in the small and large intestine can be used to determine the sequence of the meals.

Slide #1 = Large Intestine/Rectum – ingested 14-55 hours before death

Slide #2 = Large Intestine – ingested 9-12 hours before death

Slide #3 = Small Intestine – ingested 4-5 hours before death

4. By combining the digestive timing with the pollen analysis, students should be able to piece together the general geographic locations of the Iceman that correspond with each meal in his intestines.