Pre-Lab, Skills, and Standards Alignments

ÖTZI FURENSICS

This lab investigation highlights how forensic scientists analyze materials to understand ancient life, with a focus on the 5,300-year-old mummy, Ötzi the Iceman. Using compound microscopes to analyze fabric, hair, and fur from different animals, students will identify which materials the Iceman sourced for his Neolithic wardrobe and toolkit.

Lab Length: 1 hour

Suggested Pre-Lab Teaching

- Parts of the compound microscope, and microscope use
- Introduction to the technology and apparel of the Neolithic

Lab Skills

- Use compound microscopes to view hair samples.

Conceptual Knowledge/Skills

- Compare known hair-types to those from Ötzi's clothing.
- Interpret class data to determine the origin of Ötzi's clothing.
- Describe the anatomy and characteristics of hair.
- Explain how hair or fiber analysis could be used in another branch of forensic science.

New York State Science Learning Standards/NGSS

Science and Engineering Practices	Disciplinary Core Ideas	Cross Cutting Concepts
Engaging in Argument from Evidence Make and defend a claim based on evidence about the natural world that reflects scientific knowledge, and student-generated evidence. Analyzing and Interpreting Data Analyze and interpret data to determine similarities and differences in findings.	LS1.A: Structure and Function In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (MS-LS1-3)	Patterns Similarities and differences in patterns can be used to sort and classify organisms. Macroscopic patterns are related to the nature of microscopic and atomic-level structure. Scientific Knowledge Assumes an Order and Consistency in Natural Systems Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation.