



Pre-Lab, Skills, and Standards Alignments

FINGERPRINT ANALYSIS: DUST AWAY CRIME

In the late 1800s, anthropologist Francis Galton established that the microscopic ridges and valleys on the pads of our fingers make uniquely identifiable patterns. In the early 1900s, scientists and criminologists began to realize that fingerprints could be used in criminal investigation, linking evidence to suspects. In this lab, students will learn more about fingerprint collection, differentiation and analysis.

Lab Length: 2 hours

Suggested Pre-Lab Teaching

- Difference between genetic and acquired traits
- Variation of traits in humans (all humans are unique)

Lab Skills

- Compare general classifications of different patent (visible) prints.
- Develop latent (invisible) prints on surfaces.
- Lift and analyze latent fingerprints to identify class characteristics.
- Classify minutiae of fingerprints.

Conceptual Knowledge/Skills

- Explain how fingerprints are useful for identification.
- Describe the methods used to develop latent fingerprints.
- Examine and compare fingerprints to solve a "crime."

New York State Science Learning Standards/NGSS

Science and Engineering Practices	Disciplinary Core Ideas	Cross Cutting Concepts
<p><u>Engaging in Argument from Evidence</u> Make and defend a claim based on evidence about the natural world that reflects scientific knowledge, and student-generated evidence.</p> <p><u>Planning and Carrying Out Investigations</u> Conduct an investigation to produce data to serve as the basis for evidence that meets the goal of the investigation.</p> <p><u>Analyzing and Interpreting Data</u> Analyze and interpret data to provide evidence for phenomena.</p>	<p><u>LS3.B: Variation of Traits</u> Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1)</p> <p>The environment also affects the traits that an organism develops. (3-LS3-2)</p>	<p><u>Patterns</u> Macroscopic patterns are related to the nature of microscopic and atomic-level structure.</p> <p><u>Scale, Proportion, and Quantity</u> Phenomena that can be observed at one scale may not be observable at another scale.</p>