



Course: Public Safety
Section: Law & Public Safety



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DNA Evidence Simulation

What You Will Do

Use DNA evidence to compare samples and identify possible matches in criminal investigations.

Materials You Will Need

- Colored beads, buttons, cereal pieces, or paper squares (2 colors minimum)
- Small cups or bags
- Paper and pencil
- Tweezers or spoon (optional)

What is DNA?

DNA is the genetic code found in nearly every cell of the body. It is unique to each person (except identical twins), so it can be used to help identify individuals.

Investigators may collect DNA from:

- Hair roots
- Saliva
- Blood
- Skin cells
- Sweat

Important Terms

- **DNA Marker** – Specific, identifiable DNA sequence used to track inheritance, map genomes, or identify individuals. They act as “flags” for nearby traits or genes, frequently utilized in research, agriculture, and forensics.
- **False Positive** – An error in data modeling or testing where a result incorrectly indicates the presence of a specific attribute when it is actually absent.
- **DNA contamination** – Occurs when foreign DNA is introduced into evidence during collection, handling, or analysis, potentially leading to false results or wrongful convictions

Part 1: Create DNA Profiles

Each color represents a DNA marker.

Example:

- Red = Marker A
- Blue = Marker B
- Green = Marker C
- Yellow = Marker D

Make profiles for 4 suspects and 1 crime scene sample.

Example:

Sample	DNA Pattern
Suspect 1	Red, Blue, Green
Suspect 2	Red, Yellow, Green
Suspect 3	Blue, Green, Yellow
Suspect 4	Red, Blue, Yellow
Crime Scene	Red, Blue, Green

Place matching colored pieces into the cups.

Part 2: Investigate the Evidence

1. Dump out the crime scene sample.
2. Compare it to each suspect sample.
3. Record which suspect matches all markers.

Part 3: Report Findings

- Which suspect matched?
- Which suspects were eliminated?
- Why must investigators test carefully?

Reflection Questions

- Why is DNA useful evidence?
- Why should one marker alone not decide guilt?
- Why must evidence be handled carefully?
- Why can DNA exclude innocent people?