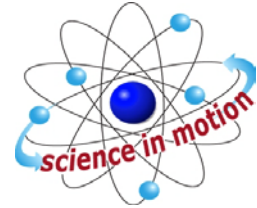


DETECTIVE LAB

From *Science in a Nutshell*



Westminster College

OBJECTIVE:

As you work through the activities in this kit, you will begin to understand how the methods used by both police and scientists are very similar. You will learn how to lift and match fingerprints and how to identify which marker was used to write a mystery note. You will also analyze and compare handwriting, fabrics, inks, powders, and shoe prints. After you master these detective skills, you will be ready to solve your own mysteries.

BACKGROUND:

Long ago, before the invention of computers, telephones and television, law enforcement officials had serious problems identifying criminals correctly. By giving false names to the police, criminals could hide who they really were, and what they really had done.

In the early 1800s, policemen with excellent memories would visit prisons. They would closely observe the faces of newly arrived convicts to see if any of the faces were familiar and to memorize new faces for possible use in the future. To help in the identification process, police began keeping detailed descriptions and drawings of each criminal.

In the 1840s, shortly after the invention of cameras, criminals were photographed. However, at that point in time, it was not possible to duplicate photographs for distribution to other police stations.

There were other problems with these methods of identification. Criminals could easily alter their appearance by simply growing a beard or changing their hair color or style. Also, it was not possible to sort through the thousands of criminals on file to make an identification quickly.

In 1879, a French police clerk realized that appearances can be changed but that body measurements and facial features do not change during adult life. He invented a method called a *portrait parle*, which means *talking picture* in French.

A talking picture included a photograph and detailed descriptions and measurements of the body of the criminal. This method was an improvement, but it was not foolproof—mistakes in identification could still be made.

Have you ever heard of Sherlock Holmes? He is not a real person, but he is a famous character in a series of popular detective stories. In the stories, Holmes often works in his laboratory with his test tubes, hand lenses, microscopes and other scientific equipment to solve a mystery.

He observed and tested evidence—hairs, scraps of fabric, soils, and poisons—in an effort to determine who committed a crime. Before these stories were published in the 1890s, science did not play an important role in solving crimes.

In 1894, the scientific process was applied to police work when detectives in Great Britain began using fingerprints to identify people. In 1910, the world's first science laboratory designed to solve crimes was established in France.

The scientific process and police work have a great deal in common. The methods used by scientists to explore the mysteries of science are very similar to the methods used by police to investigate crimes.

In search to find the cure to a disease, the scientist—just like the detective—collects and analyzes evidence. The scientists and the detective then ask questions, make careful observations, draw conclusions, and develop theories as they each seek to solve their mysteries.

A criminal almost always leaves something behind at the scene of a crime: a fingerprint, a scrap of fabric, footprints, etc. The job of the detective is to identify, collect, preserve, and then analyze the evidence found at the crime scene to help solve the crime.

As you work through the activities in this mini-kit, you will be following in the footsteps of the great detectives. You will also be developing and using scientific skills to solve problems that detectives call mysteries.