READING PASSAGE

A Look inside the Lab: PCR
An Incriminating Sip

A drink of soda proved to be his downfall.

In January 1992, Marlene Kilpatrick was murdered in her Maryland home. While her body was lying in the bedroom, a lot of blood was found in the kitchen. Also, in the kitchen — a cup of coffee and a partially consumed bottle of soda. According to her children, Marlene never drank the brand of soda sitting on the table.

Because evidence suggested that the victim knew her killer, police looked to those around her, including Albert G. Givens. Givens was friends with one of Kilpatrick's sons, and he had done some home repair jobs for the Kilpatrick family. Givens was eventually arrested and found guilty of murdering Marlene Kilpatrick. He was sentenced to life in prison.

One important piece of evidence was the soda bottle found in the kitchen. Forensic scientists were able to use saliva from the bottle to get a sample of DNA and show that it matched Givens' DNA. So, how were they able to do this?

Scientists used a technique called polymerase chain reaction, or PCR. PCR has been described as a photocopier for DNA. This is a good way to think about it because PCR is a method in which very small amounts of DNA can be "amplified," or made into millions of copies in a short time. This amplification provides scientists with a larger sample size, so they can do the types of testing needed for DNA matching. In the Givens case, this meant that the very small amount of DNA in saliva that remained on the soda bottle was able to be amplified, so that it could be compared with the DNA of suspects in the case. Unfortunately, for Givens, it was a match with his. Givens' case was the first in Maryland to include evidence determined using PCR technology.

PCR was developed by Kary Mullis, a biochemist working in California, in the early 1980s. Mullis received the Nobel Prize in chemistry for his work in 1993 — the same year that Givens was convicted of Marlene Kilpatrick's murder.