

## Middle School Career Investigations

### DNA Technology in Crime Labs

#### Introduction

# DNA TECHNOLOGY IN CRIME LABS

In this interactivity, complete a simple form of DNA comparison to see if a sample collected at a crime scene matches a suspect's DNA. Follow each of the steps provided to you to uncover the truth. Click **NEXT** to begin.

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#### Importance



**WHY IS DNA TECHNOLOGY IMPORTANT?**

Can be used to create DNA fingerprints to identify victims and suspects in criminal investigations

Found in hair, skin cells, cheek cells, and body fluids

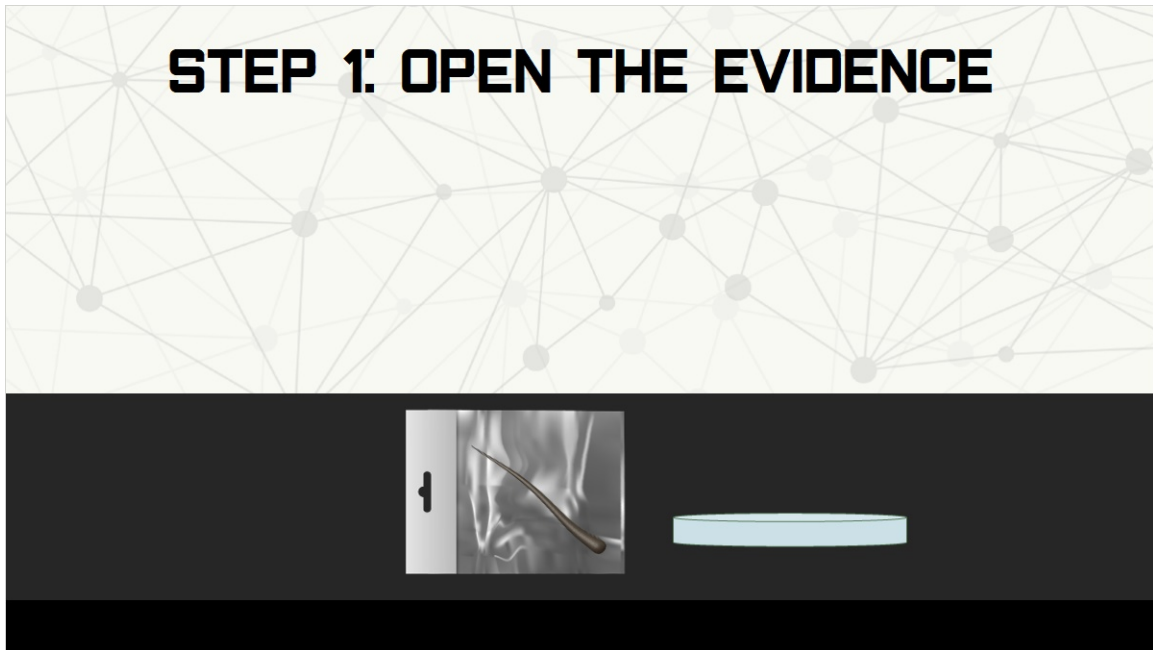
DNA technology is important because it can be used to create DNA fingerprints to identify victims and suspects in criminal investigations.

DNA samples are readily available in humans. Law enforcement officials can get DNA samples from hair, skin cells, cheek cells, and many kinds of bodily fluids.

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### Open the Evidence

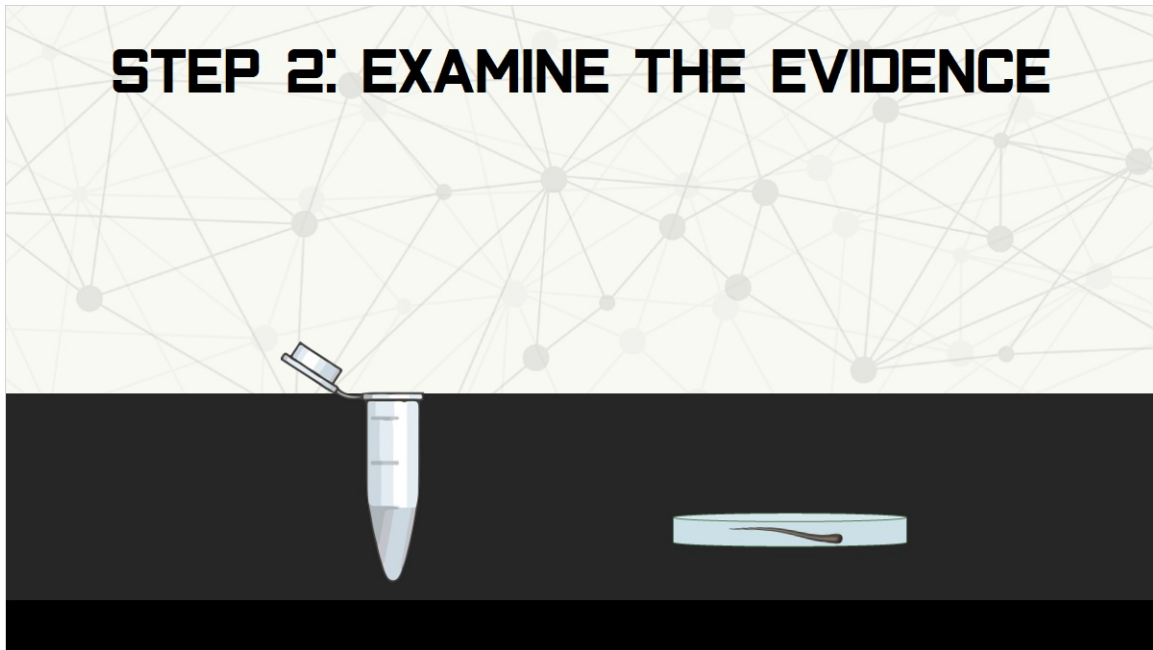


Notice the packaged evidence in front of you. It was collected from a crime scene. Click on the bag to open it and place the evidence in a petri dish.

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#### Place in Tube



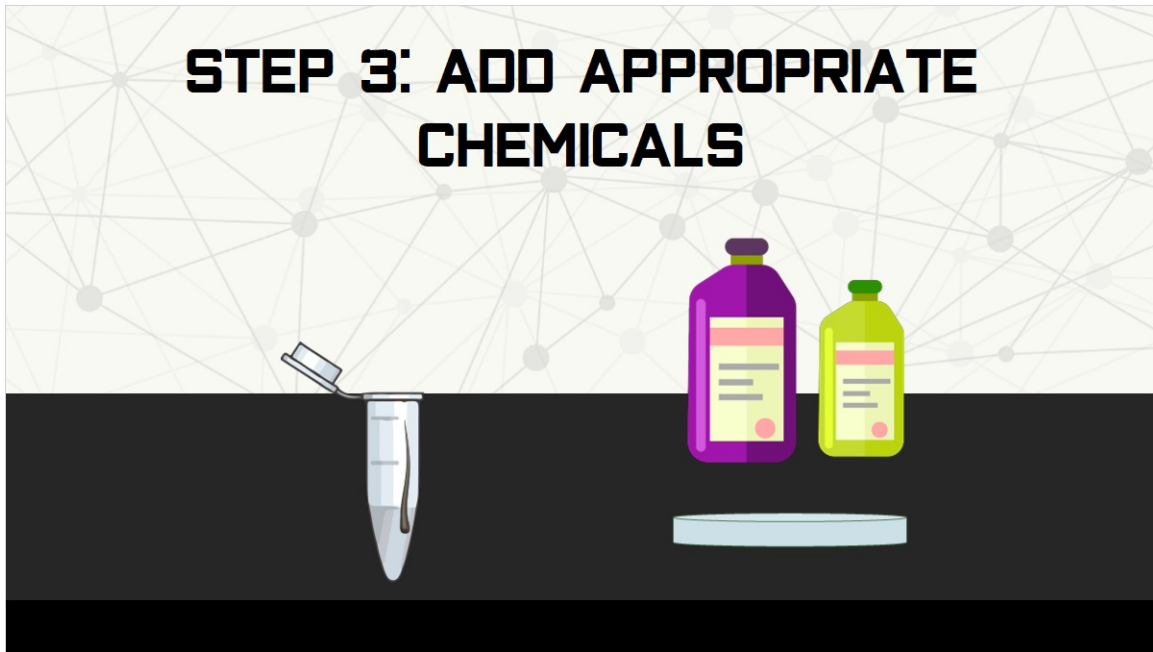
Visually examine the evidence. What does it look like?

It is a piece of hair taken from a crime scene. Now, you need to separate the DNA from other materials, like proteins and other cellular components. Drag and drop the hair sample into the tube.

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#### Add Chemicals

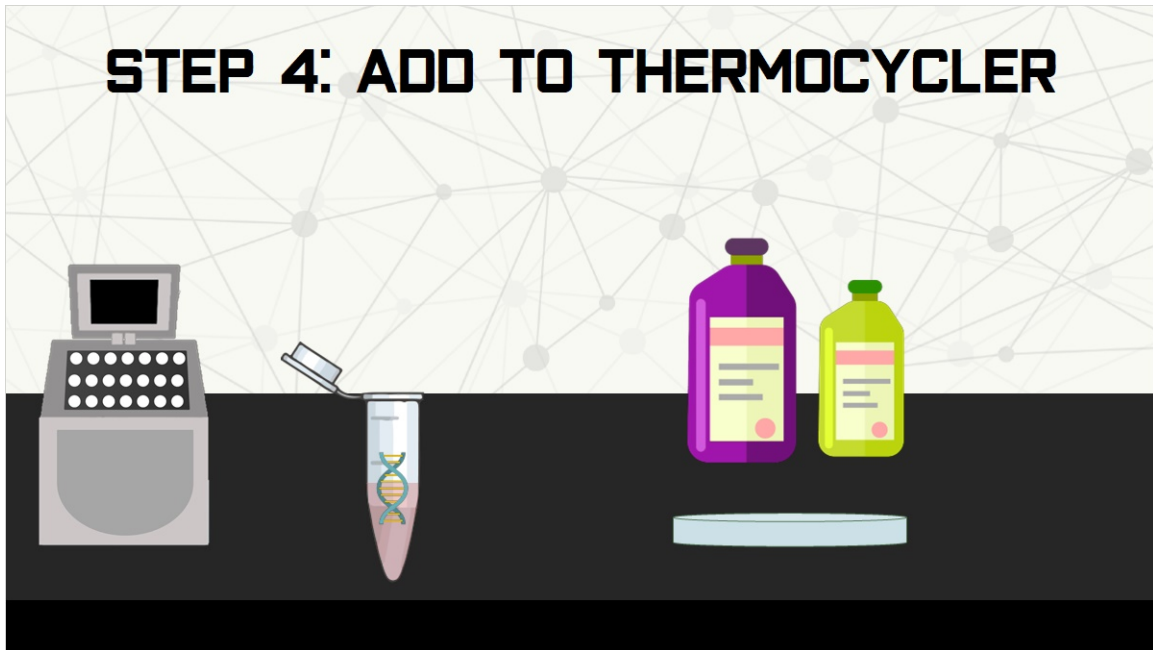


The two chemicals shown here will help separate the DNA from the other materials. Add the two chemicals to the tube by waving the tube over the tops of the chemical bottles.

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#### Add to Thermocycler

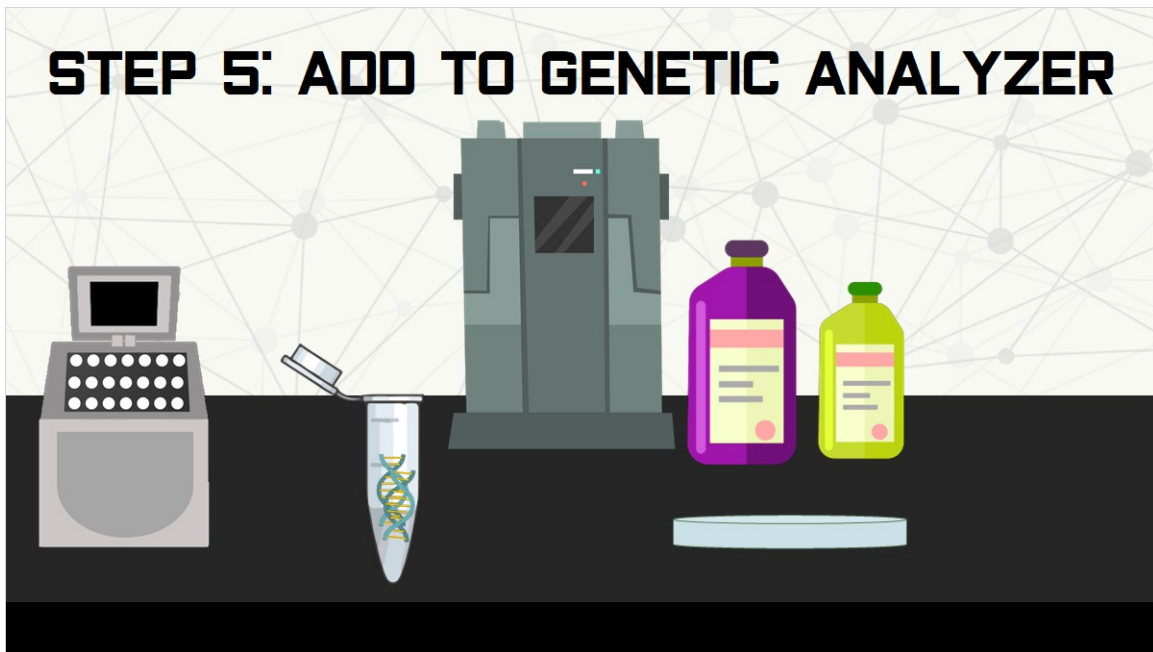


Now that the DNA has been isolated, use a thermocycler, which is a machine that will help create copies of the DNA through heating and cooling. Drag and drop the tube over the thermocycler.

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#### Add to Genetic Analyzer

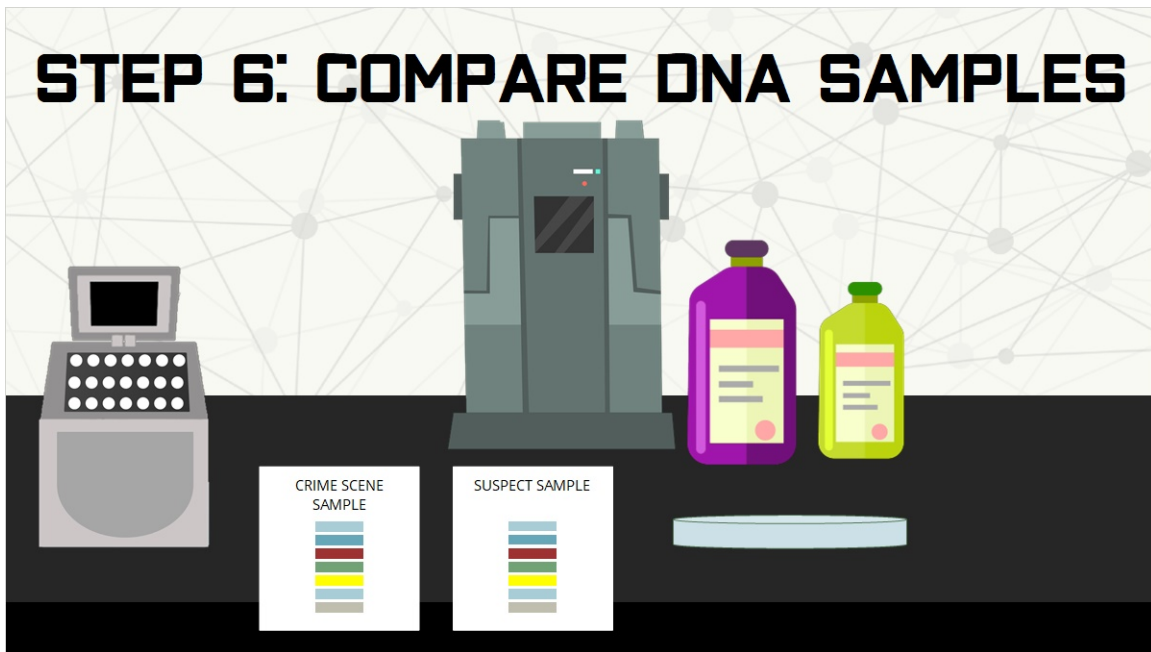


Now, add the samples to the genetic analyzer. This machine will create profiles of your DNA sample, as well as the DNA sample of the suspect. Drag and drop the tube onto the genetic analyzer.

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### Compare Samples



The genetic analyzer creates print outs of the DNA sequences. Compare the two samples - one is from the crime scene, the other is from the suspect. Do they match? Click on one of the samples to find out the results.



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### Results



The Crime Scene Sample and the Suspect Sample match, which places the suspect at the crime scene. Along with other evidence collected by law enforcement, this will help an attorney convict a criminal.