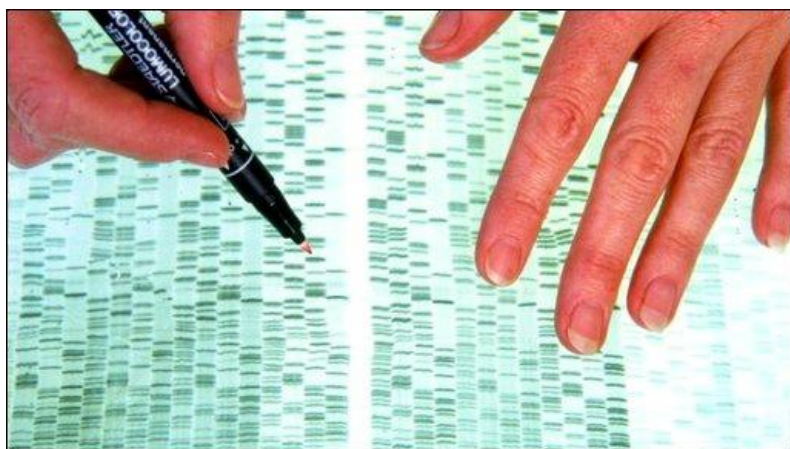


DNA FINGERPRINTING

You have probably all seen or heard of something like DNA finger printing before on shows like *CSI*. DNA fingerprinting is looking at a **SMALL** part of a person's DNA. Just like police can use finger prints to identify a person without looking at their whole body scientists can identify a person using DNA finger prints without looking at every base pair of a person's whole DNA sequence. To make a DNA finger print scientists look at a part of the human genome that is very different for every person.



DNA fingerprinting has 2 main uses.

1. DNA fingerprints can be used to identify DNA from a crime scene to see if it matches a suspect's DNA.
2. DNA fingerprints can be used to determine the paternity of a baby (who's your daddy :-).

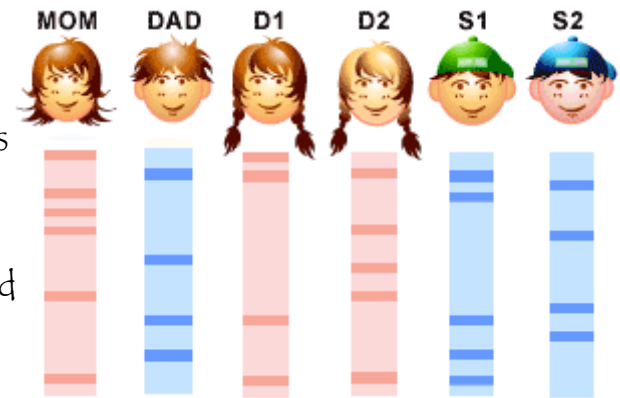
HOW DOES IT WORK?

Once DNA is extracted from an individual then enzymes, called restriction enzymes, act like microscopic scissors to cut up the DNA to make the "fingerprint." Since DNA is too small to see even under very powerful microscopes, scientists stain the DNA and place the DNA in a gel. Once the gel is run scientists can look at the different banding patterns of the gel to see a person's DNA fingerprint.



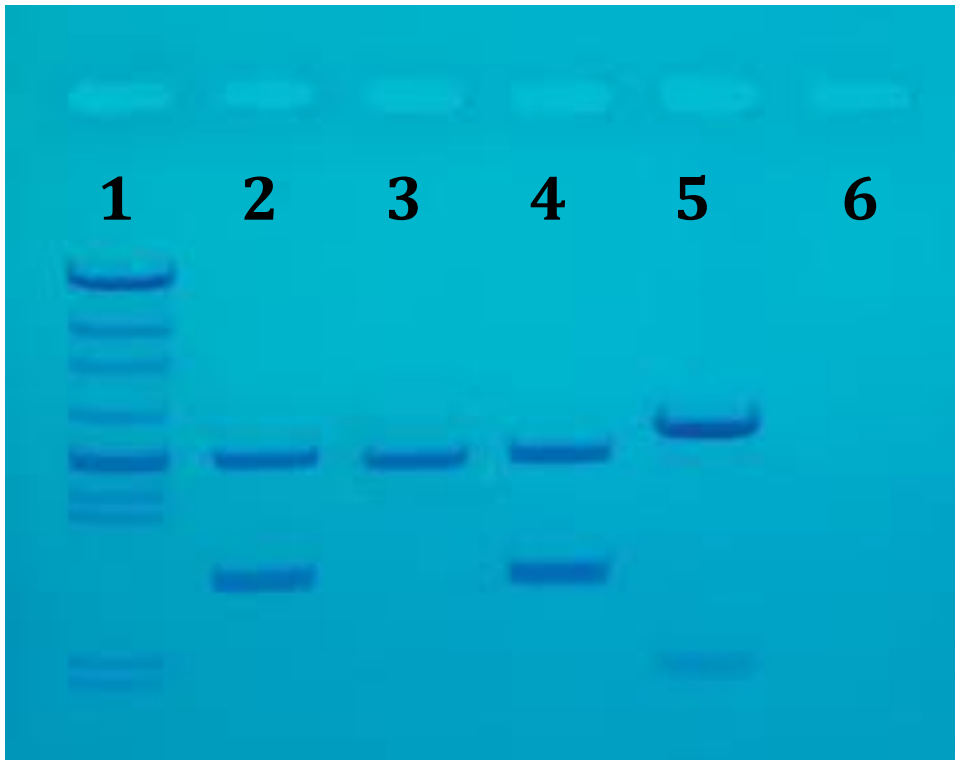
WHO'S THE DADDY?

Look at the picture on the right. This mom and dad have 2 daughters and 2 sons as shown in the picture. Study the banding of the mom and the dad. Match the mom and dad's banding to the children's banding. You should notice that a couple of the kids do not match their parents. One of the kids is the mom's child from a previous marriage. Another one of the kids is adopted.



WHO WAS AT THE CRIME SCENE?

Below is the picture of a gel run to look at different DNA fingerprints. Police are trying to match the DNA fingerprint found at a crime scene with one of their suspects. They currently have 3 suspects. Look at the gel below to help police figure out which suspect's DNA matches the DNA at the crime scene. Record your findings.



Answer the questions on your lab sheet. Be sure to ask any questions (even out of curiosity)!

What is in each number/lane of the gel?

1. Reference to determine the length of other samples
2. Crime Scene DNA
3. DNA from Suspect A
4. DNA from Suspect B
5. DNA from Suspect C
6. Empty lane to check for contamination