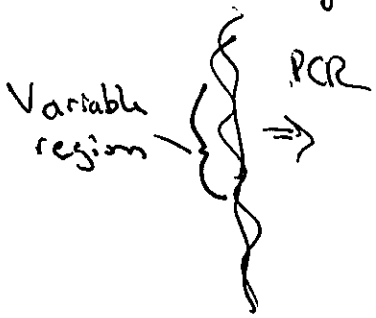
DNA fingerprinting

Purpose: To identify individuals & to show genetic relationships.

Steps:

1. Extract the DNA from cells.
   - Saliva (cheek cells)
   - Semen & vaginal fluid.
   - Blood (white blood cells)
   - hair follicles (need the root)

2. Amplify (copy) your DNA sample using PCR (Polymerase Chain Reaction)
   - Highly variable regions of DNA are copied.

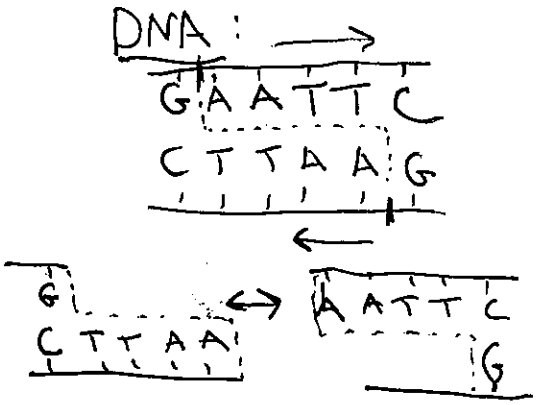


3. Add a restriction enzyme to cut the DNA at a specific palindrome sequence.
   ↳ reads the same forward & backward

Ex:

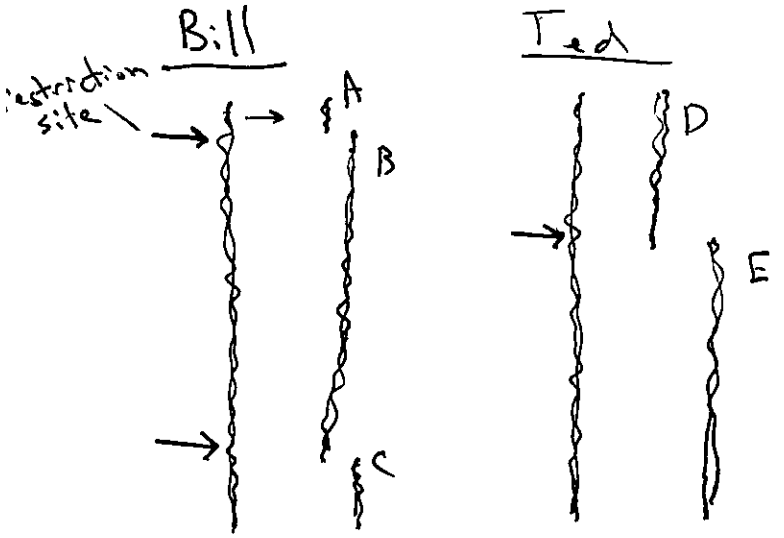
Words:

RACE CAR

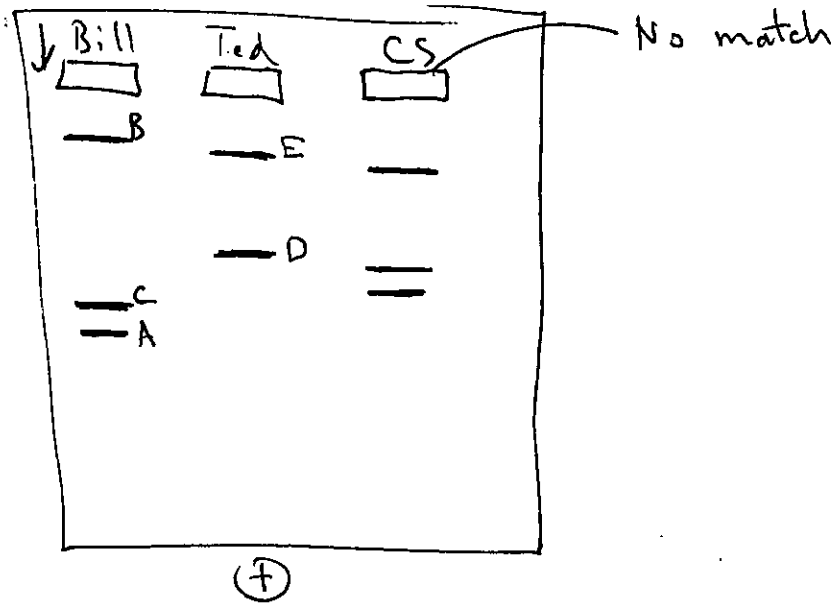


③ continued ... Different size fragments are created due to difference base sequences in the variable DNA. Each DNA sample will have different locations where the restriction enzyme cuts. (restriction sites)

Ex:



④ Run the DNA fragments through gel electrophoresis to separate the fragments based on size. Larger fragments run slower than smaller ones.



⑤ Look for matches in fragments.

Exact match - their DNA

Some fragments - Could be related