

Name _____

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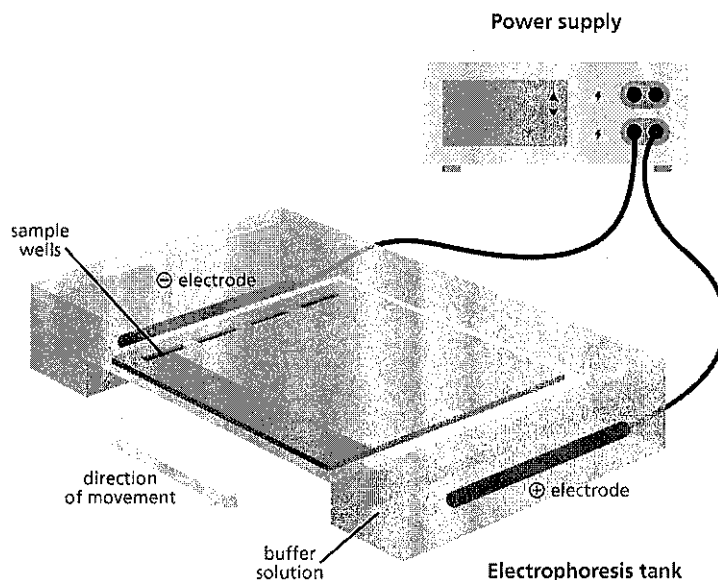
Due date _____

DNA Fingerprinting

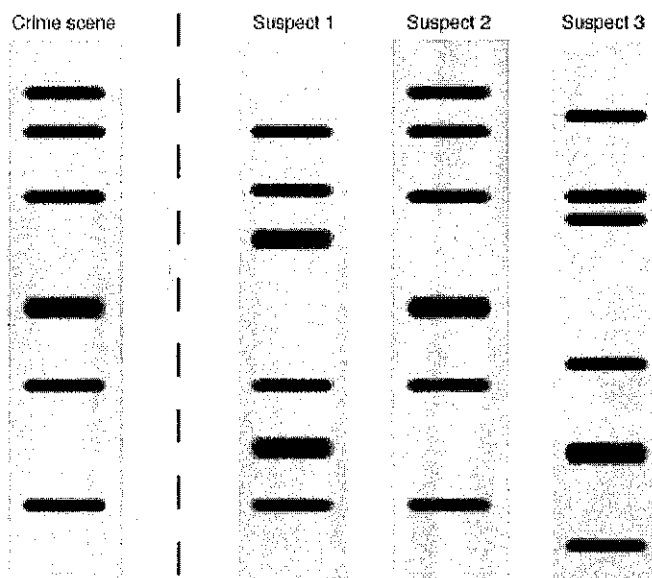
Guilty or innocent? How can DNA found at a crime scene help answer this question? A technique developed in the 1980's called DNA profiling, or "fingerprinting" has added a new strategy to help solve crimes. From blood, hair, skin, saliva, and other body tissues left at a crime scene, scientists can produce a DNA fingerprint of a person's DNA. This fingerprint can then be compared to the suspect's to see if it is a match.

In this laboratory activity, you will watch several videos on DNA fingerprinting technology and its applications.

GEL ELECTROPHORESIS



DNA FINGERPRINT



DIRECTIONS: Go to YOUTUBE and watch the following videos. Answer each question as you watch.

VIDEO #1: Gel Electrophoresis 6:11 (MITK12Videos)

- _____ 1. What was left at the crime scene of the theft of the Mona Lisa?
- A. Blood B. Skin cells C. Hair
- _____ 2. What is the technical term for “DNA Fingerprinting?”
- A. Karyotyping B. Gel electrophoresis C. Amniocentesis
- _____ 3. What moves the DNA pieces?
- A. Gravity B. Electricity C. Air flow
4. TRUE or FALSE: Smaller pieces of DNA move faster & farther through the gel _____
- _____ 5. Whose DNA matches the “Mystery DNA” from the hair at the crime scene?
- A. Suspect #1 B. Suspect #2 C. Suspect #3

VIDEO #2: DNA Fingerprinting 6:09 (Bozeman Science)

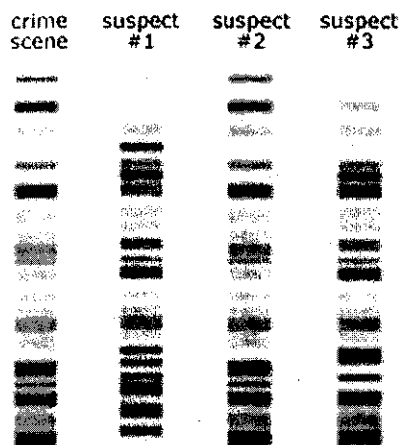
- _____ 1. What year was DNA fingerprinting invented?
- A. 1964 B. 1984 C. 1994 D. 2014
- _____ 2. What percent of DNA is similar in all humans?
- A. 11.1% B. 33.3% C. 66.6% D. 99.9%
- _____ 3. What do you call letters of DNA that repeat over, and over, and over?
- A. Short Tandem Repeats
B. Highly Repetitive DNA
C. Redundant Sequences
D. Long Adjacent Repeats

- _____ 4. What causes DNA fragments to migrate in the gel?
- A. Electricity B. Water flow C. Gravity D. Air flow
- _____ 5. How many sections of highly variable DNA are used in a gel electrophoresis?
- A. 3 B. 7 C. 13 D. 21
- _____ 6. Who was guilty of the crime?
- A. Mr. Blonde B. Mrs. Red C. Mr. Mustache

**VIDEO #3: What is Gel Electrophoresis? 7:30 (watch 1st 6:15)
(miniPCRBio)**

- _____ 1. What does "Electrophoresis" mean?
- A. High Electric voltage B. Static electricity C. Carried by electricity
2. TRUE or FALSE: There is an electric current that runs through the agarose gel _____
- _____ 3. DNA fragments are separated in the gel according to their
- A. Size B. Base sequence C. Mass
4. TRUE or FALSE: Short pieces of DNA move more quickly through the gel _____
- _____ 5. What are the little holes or pockets in the gel called?
- A. Wells B. Tunnels C. Bowls
- _____ 6. What are the stripes of DNA called
- A. Strings B. Bands C. Filaments
- _____ 7. Which length of base pairs move farther through the gel?
- A. 1200 B. 100 C. 250

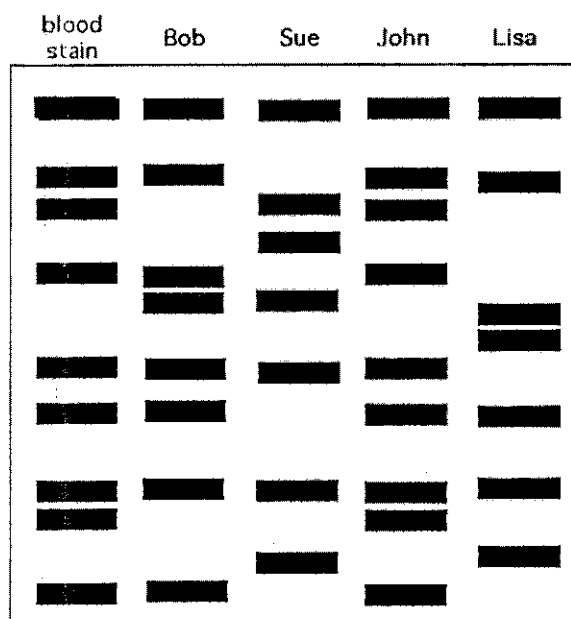
DNA samples from:



A. Suspect #1

B. Suspect #2

C. Suspect #3



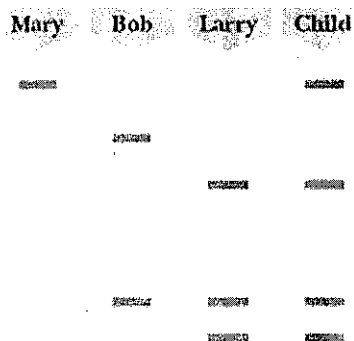
2. Who left the blood stain at the crime scene?

A. Bob

B. Sue

C. John

D. Lisa



3. Who is the child's father?
(circle one)

BOB

LARRY