Name_____ Period_____

DNA fingerprinting

What exactly is a DNA fingerprint? Well, it certainly isn't an inky impression of a DNA strand. Compared to unimaginably small DNA, a fingerprint is HUGE. So what is it that we're looking at, and how is one of these fingerprints made? The answer lies in the process of Gel Electrophoresis.

Visit the Gel Electrophoresis link off the assignments page to see how a DNA fingerprint is made.

As you work through the virtual lab, answer the following questions.

1. How does the structure of the gel help to separate the DNA strands?

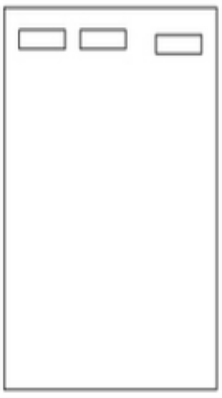
2. Why is an electrical current added and in what direction does the DNA move (positive to negative or negative to positive)?

3. How are the DNA strands organized in the gel after it is run?

4. What makes the "fingerprint" or the dark bands shown in the gel?

5. Draw a picture of the gel after you complete your electrophoresis, make sure to label the

- starting point (where you put the DNA at the start)
- where the smallest & largest DNA fragments would be found
- unknown and known samples



6. The estimates for your DNA band sizes were:

Band 1 _____

Band 2 _____

Band 3 _____

Turtle Fingerprints! Data & Analysis

Number of bases in fragments	Example	San Diego Turtle	Hawaiian Turtle Subspecies	Mexican Turtle Subspecies
28				
27				
26				
25				
24				
23				
22				
21				
20				
19				
18				
17				
16				
15				
14				
13				
12				
11				
10				
9				
8				
7				
6				
5				
4				
3				
2				
1				

Questions:

1. Which subspecies was the turtle from San Diego? _____
2. How do you know this? _____
3. Write a conclusion (at least 6 sentences) describing your techniques and results. (how, why, what etc.) _____ *(use your own paper for the conclusion)*
4. What experiment would you perform next with these turtles? What other things could you learn about the different species? _____
5. In what ways has this technique been used for humans? _____

Staple your paper strip DNA to the back of this sheet before turning it in.