Name_____ Period _____ Date _____

⚗DNA Fingerprinting

STEM Sims

Lesson 2: Crime Scene Investigation
At a crime scene, it is up to criminal investigators to analyze the evidence and deduce what has happened. For bloodstains, it is hard to determine if the blood came from the same person or multiple people just by sight. It is your job to collect the DNA from the crime scene and determine whose blood it is. Are you ready for this crime scene investigation?

Doing the Science
1.   Start the DNA Fingerprinting Simulation by clicking on the "Sim" tab.
2.   Drag a swab to a bloodstain and write down the bloodstain's location into Table 1 below.
3.   Repeat step 2 for the other bloodstains in the crime scene.
4.   Click on "Analysis Lab" to analyze the DNA samples.
5.   Drag the bottle labeled "Gel Buffer" onto the top of the gel electrophoresis tray.
6.   Drag the pipette to the box of "Clean Tips" (make sure that the end of the pipette is on top of the box).
7.   Drag the pipette from the box of clean tips to the first test tube that holds the DNA sample.
8.   From the test tube, drag the pipette to the well near the left side of the gel electrophoresis tray.
9.   Drag the pipette from the tray to the box labeled "Used Tips".
10.   Repeat steps 6-9 for the remaining five DNA samples.
11.   Correctly connect the black and red wires from the power supply to the gel electrophoresis tray.
12.   Click on the switch of the black box to give power to the gel electrophoresis tray.
13.   Click on "DNA Results" to view the results of the electrophoresis.
14.   Drag the ruler to each of the bands and measure the locations of the purple bands. Record these locations into the table.
15.   Using the "Suspect DNA Profile Database" table, identify the ID number of the blood for each of the DNA samples and record the ID number into the table.
16.   Lastly, record in Table 1 the DNA Results Code shown in the simulation.

Table 1.

	Swab 1	Swab 2	Swab 3	Swab 4	Swab 5	Swab 6
Location of DNA at the crime scene						
Location of the purple bands						
ID Number						
DNA Results Code:						

Do You Understand?
1. Were the bloodstains that were close to each other in the crime scene from the same person or multiple people? Please explain your response.

2. Assuming all of the bloodstains were from victims, how many total victims were there?