

Name: _____ **Answer Key** _____ Date: _____ Class: _____

Gel Electrophoresis Virtual Lab Worksheet

Instructions

Go to the following link and complete the gel electrophoresis virtual lab:

https://www.classzone.com/books/hs/ca/sc/bio_07/virtual_labs/virtualLabs.html

Select “Gel Electrophoresis” from the list and start the virtual lab.

The lab is based on using gel electrophoresis for DNA fingerprinting. In our lesson, we discussed using gel electrophoresis for nanotechnology, specifically determining if the PEG molecule has been attached to the quantum dot. Even though this lab presents a different application for gel electrophoresis, the lab helps you to understand how this method works!

Questions

1. Gel electrophoresis a technique used for separating molecules, such as DNA strands and proteins, according to their lengths.
2. What is the purpose of the power supply? The power supply is used to produce an electric current in the electrophoresis chamber.
3. The TBE buffer solution is used to help carry an electric current.
4. Shorter strands of DNA travel more easily and over time, farther on the agarose gel than do larger strands.
5. Once an electric current is applied, notice that the negative electrode is closest to the wells, and the positive electrode is farthest from the wells.
6. Which suspect is the victim? Suspect 2.
How do you know? Suspect 2’s DNA matches the evidence DNA.
7. Do you think you would find the largest or the smallest fragment of DNA closest to the well? Explain. The largest fragment will be found closest to the well where it began because it will move slower than the smaller fragments, which can move through the gel easier.