

LT: I can describe the process of gel electrophoresis and how it can be used in science.

Standards: Appendix A; 2.2c

1. Visit the following link to engage in a simulated lab: <http://learn.genetics.utah.edu/content/labs/gel/>
 - a. Write down the procedure (in your own words). Also, record any questions you may have along the way.
2. Visit the following link and watch the video: https://www.youtube.com/watch?time_continue=392&v=pXWf8r-V6ns

Answer the following questions:

- b. How can biotechnology tools such as gel electrophoresis help us to compare relationships between organisms?
- c. What is the purpose of the power supply?
- d. Why do DNA strands appear to be in different locations after the procedure is complete?
- e. Do you think you would find the largest or the smallest fragment of DNA closest to the well? Explain.
- f. The segments of DNA below were extracted from two different species of plants. The segments represent the same region of DNA that codes for a particular pigment in the species.

Plant Species A: A C C G C A G G A T T C G C

Plant Species B: A C C G G A G C G A T T C G C

A restriction enzyme is used to cut the DNA from species A and B. The enzyme binds to the sequence G G G A T T and cuts between G and A.

- Show how many cuts will be made in the DNA sequences of each species when the enzyme is used.
- Show how the DNA would be presented after gel electrophoresis is complete.