

Virtual DNA Extraction Lab

Objective: This virtual lab will help you to gain knowledge on how to perform a cheek swab and extract DNA from human cells.

Directions: Go to the following website <http://learn.genetics.utah.edu/content/labs/extraction/> click the double arrow in bottom right corner, go through the simulation, and answer the questions below.

- 1) What are some reasons for extracting DNA from human cells?
- 2) Click on **Start Lab** in the right hand corner.
 - a. What are 3 reasons why scientists isolate DNA?
- 3) **Click slide 3.**
 - a. What structure is found in each of our cells?
 - b. Which macromolecule is found inside this structure?
- 4) **Click to slide 4.**
 - a. What is the X shaped structure inside the nucleus called?
 - b. What macromolecule does it contain?
- 5) **Click to next slide.** Which cells are being removed from the man?
- 6) List the 4 steps that you will use to purify the DNA from the cheek cells.
- 7) Click through to the next steps. Look closely at the cotton swab, what do you see covered in it?
- 8) Click to the next step. What is the purpose of the **lysis** solution?
- 9) The lysis solution contains detergent. What does the detergent cause cell to do?

- 10) Click through to the next steps. What does the salt solution do?
- 11) Click through to the next steps. What does the centrifuge do?
- 12) Click through to the next steps. What is the purpose of adding the isopropyl alcohol to the tube?
- 13) The white stuff left in the bottom of the tube is the DNA. This DNA could have been removed from the scene of a crime or from a possible suspect. The DNA then would be placed in an electrophoresis chamber, so that the DNA separates out into bands, like the one shown below. **Which suspect is guilty? Explain.**

