

ABE, Differentiation & Low Socioeconomic Communities

Dr. Urlette Reyes *B.S.Ed.D*

PBL: Engagement, Skill Building and an introduction to Rigor.

**CSI Case:
Which Dog Ate
Jane's Homework?**



A blue rectangular graphic with a black border and several white bubble-like shapes. It features the text "CSI Case: Which Dog Ate Jane's Homework?" in a bold, black, sans-serif font. Surrounding the text are four small photographs of dogs: a black dog with red eyes, a tan dog, a black and white dog, and a black dog with a white patch on its face.

Your Case: Kitten Paternity

In your detective notebook jot down the information that seems most important to solving the case.

Mary's white cat "Honey" was lost for 2 days about three months ago. She now has 4 kittens (see photo 1). Mary wants to know if the two neighboring cats ("Tom" in photo 2 and "Butch" in photo 3) could be the father. Mary has collected hair follicles from each adult cat and kitten. To analyze their DNA fingerprints, Mary has extracted DNA, amplified DNA using polymerase chain reaction.

You will be running the agarose gel electrophoresis on these "DNA" samples to determine the genetic father of each kitten.



Photo 1. Honey and kittens Cream, Mooses, Ginger, Sugar

Photo 2. Tom (male)

Photo 3. Butch (male)

A white rectangular graphic with a black border, tilted at an angle. It contains the title "Your Case: Kitten Paternity" and a paragraph of text. Below the text are three photographs: a white cat with four kittens, an orange cat, and a ginger and white cat. The photos are labeled "Photo 1. Honey and kittens Cream, Mooses, Ginger, Sugar", "Photo 2. Tom (male)", and "Photo 3. Butch (male)".

College Board



Pre-AP[®]



**Close Observation
and Analysis**



**SHARED
PRINCIPLES**



**Higher-Order
Questioning**



**Evidence-Based
Writing**



**Academic
Conversation**

Viral Variants

Prior
Knowledge
Bacteria
Vs. Viruses

A bit of
History

Rate
Review

Microbe
Fact Sheet
Project

Vaccine
Development

Amgen Lab 1
Viral Variants
Edition



<https://bit.ly/PBLViralVariants>

Dr. Urlette Reyes B.S.Ed.D



Lesson 6

PBL: Viral Variants

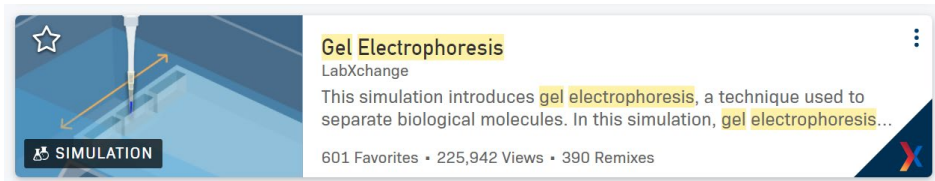
(Hands-on or Virtual Time commitment = 1-2 class sessions)

(Hands-on AND Virtual Time commitment = 3-4 class sessions)

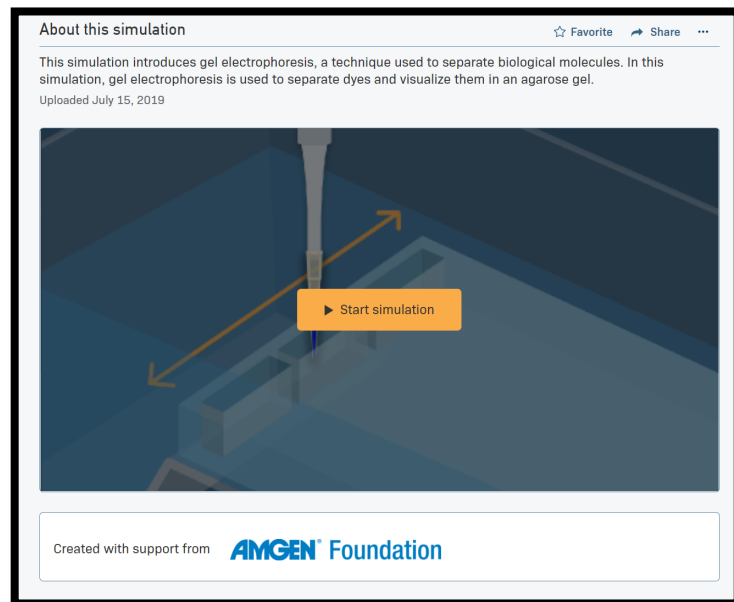
Introduction to Gel Electrophoresis – LabXChange

Log into your LabXChange Account We will get familiar with the process of Gel Electrophoresis with a lab simulation.

We will use the lab book within the simulation in addition to writing up our own lab report. Click the image below to access the activity write up and simulation guide.



Gel Electrophoresis
LabXchange
This simulation introduces gel electrophoresis, a technique used to separate biological molecules. In this simulation, gel electrophoresis...
601 Favorites • 225,942 Views • 390 Remixes

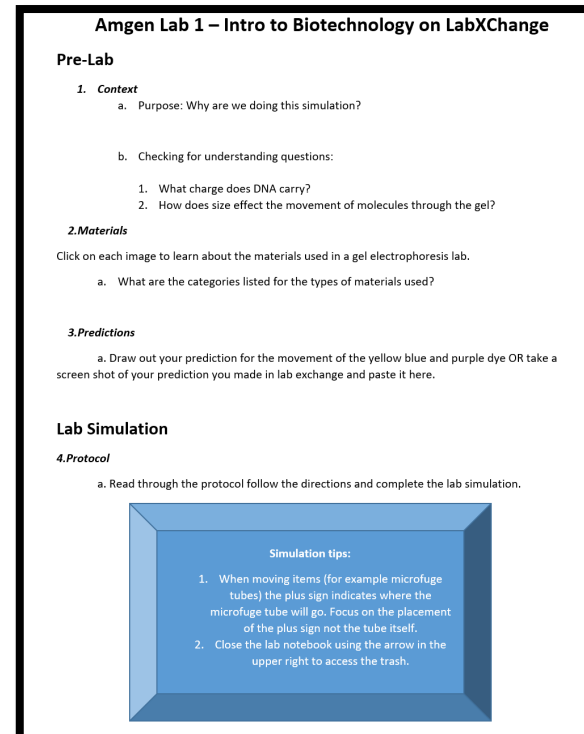


About this simulation ☆ Favorite ↗ Share ⋮

This simulation introduces gel electrophoresis, a technique used to separate biological molecules. In this simulation, gel electrophoresis is used to separate dyes and visualize them in an agarose gel.
Uploaded July 15, 2019

[▶ Start simulation](#)

Created with support from **AMGEN** Foundation



Amgen Lab 1 – Intro to Biotechnology on LabXChange

Pre-Lab

1. Context

a. Purpose: Why are we doing this simulation?

b. Checking for understanding questions:

1. What charge does DNA carry?
2. How does size effect the movement of molecules through the gel?

2. Materials

Click on each image to learn about the materials used in a gel electrophoresis lab.

a. What are the categories listed for the types of materials used?

3. Predictions

a. Draw out your prediction for the movement of the yellow blue and purple dye OR take a screen shot of your prediction you made in lab exchange and paste it here.

Lab Simulation

4. Protocol

a. Read through the protocol follow the directions and complete the lab simulation.

Simulation tips:

1. When moving items (for example microfuge tubes) the plus sign indicates where the microfuge tube will go. Focus on the placement of the plus sign not the tube itself.
2. Close the lab notebook using the arrow in the upper right to access the trash.



The End



<https://bit.ly/PBLViralVariants>

