8. Place extracted DNA in a clean beaker with cold alcohol. Your teacher may want to observe your stringy DNA product.

Part II Agarose Gel Electrophoresis Background: In Gel electrophoresis, an electric current is used to separate out different lengths of fragments of DNA on a gel agarose medium. Gel agarose is placed into an electrophoresis chamber. The DNA is loaded into wells in the gel. When the current is turned on, the naturally negatively charged DNA is drawn to the positive pole. Shorter fragments travel farther than longer ones. This part of the lab will be done in the front of the room. Materials: Electrophoresis chamber, gel, buffer, food coloring specimens

Procedure: In this simulation of gel electrophoresis, the teacher will substitute several food colors for different DNA samples. First, a gel is placed into the electrophoresis chamber. Different food colors will be loaded in the wells. Several students may assist with this process. Finally, the box lid is closed and current is turned on for 5 minutes to allow the gel to run. Observations: Observe the gel before and after the

electrophoresis is run. · Record your results of the separated food colors on the lab sheet (Section B- Part II) A Case Study: Murder!

Ms. Scarlet has been brutally murdered in the Library!! She put up a tremendous fight but was stabbed numerous times by her assailant. The police suspect that the assailant had also been injured - remember Ms. Scarlet's fingernails!! The crime scene investigator has collected a number of blood samples from the Library and from the victim for further testing. A few of the normal suspects have been conclusively eliminated leaving only Mr. Green, Col. Mustard and MS Peacock. Police have obtained a warrant requiring each of them to give samples for DNA analysis.

You will use the DNA analysis to see if one of the suspects can be placed at the scene of the crime.

Suggest the name of the perpetrator to the police.

Y=YELLOW (MUSTARD)

Pert III RFLP Analysis: Genetic Fingerprints: A Paternity Case

Procedure: Refer to A Paternity Case. Using the diagrammed results of an electrophoresis of DNA samples, you will solve a "parental suit". 

AS PIRETED

Complete 1,2, and 3 listed on the bottom of the sheet.

Part IV -Recombinant DNA or "Gene Splicing"

Solve problem 6 on page 255 in your textbook, Then, complete A Case Study: Murder. You Modern Biology and attach: will use your observations to solve the murder YOU HAVE mystery or use the gel results diagrammed below. ANALYSIS CRIB: SWITCHED GREEN-F PERIOUS TANDARD (Bue) KNOW UN 1 = unknown A Red 2 = unknown B Red 3 = unknown C Real+ Yeller 4 = unknown D Ridge 5 = Victim (Ms. Scarlett) 6 = Suspect - S1(Mr. Green) Green) 7 = Suspect - S2(Ms. Peacock) Blue 8 = Suspect - S3 (Col. Mustard) Yellio cowes 1 drap food coloring 0.5 mL of TBE NOTE TO BE R = REO (SCAPLET TRUE TO ABOVE -G=GREEN ABOVE THIS IS B = BLUE (PEACOCK)

"MIXED BLOOD"

SUGLESTS 2 PEPB.

4 , 5 CONSISTENT WITH 1"PERP"