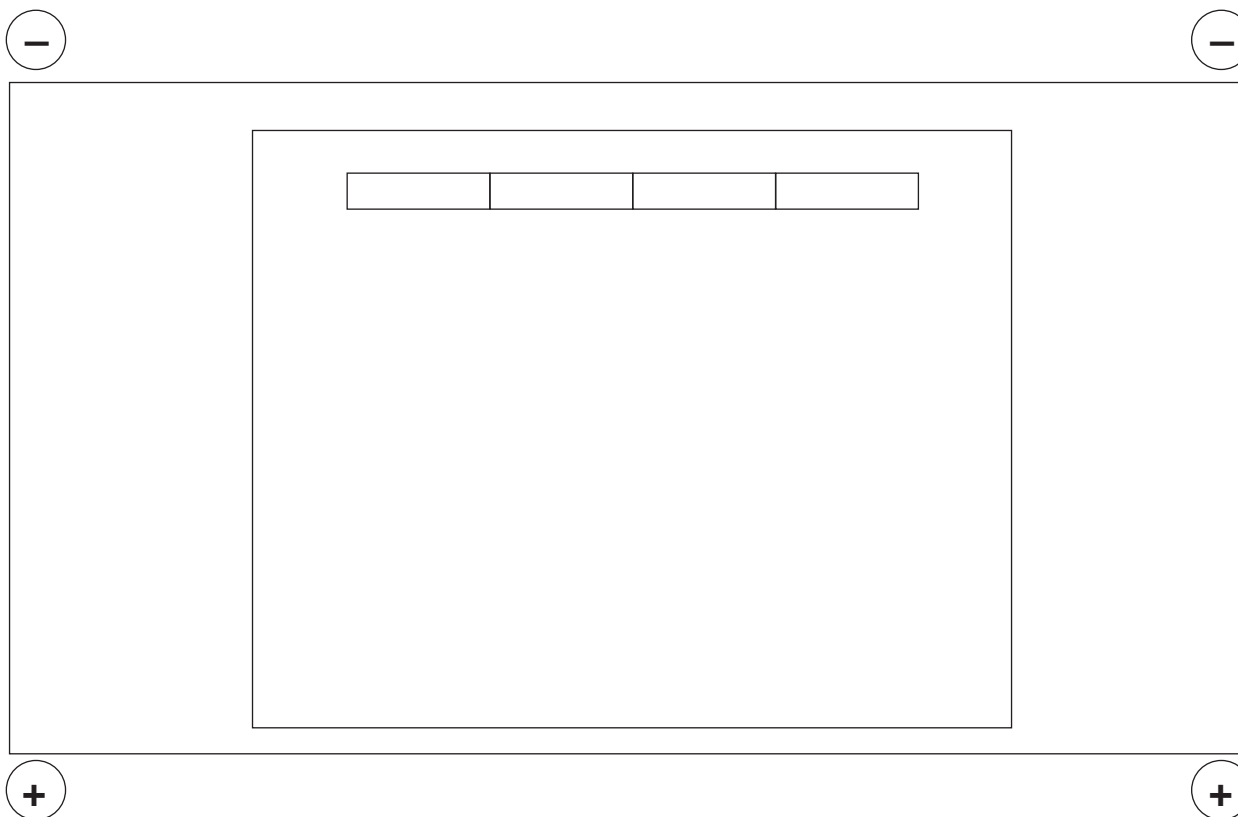


DNA Banding Worksheet

Observations and Analysis

- Using a metric ruler, measure the migration distance in millimeters for each DNA fragment band on the gel and sketch the observed DNA banding patterns on the DNA Banding Worksheet.



- Complete the Data Table.

Data Table

DNA Sample 1		DNA Sample 2		DNA Sample 3		DNA Sample 4	
DNA Fragment No.	Migration Distance (mm)	DNA Fragment No.	Migration Distance (mm)	DNA Fragment No.	Migration Distance (mm)	DNA Fragment No.	Migration Distance (mm)

Genetics of Cancer Worksheet

Questions

1. Why are germline mutations of particular concern to geneticists?
2. Why are colored tracking dyes used when running the DNA fragments through the gel?
3. When analyzing the DNA banding pattern, where would you expect to find the largest fragments produced by the restriction enzyme?
4. Read the “Genetics of Cancer Scenario” and evaluate the banding pattern results obtained by electrophoresis of the DNA samples. Do the results suggest that anyone is a carrier of the BRCA1 and BARD1 mutations carried by Mary? Explain your analysis of the results and your conclusion.
5. List three errors that could affect the outcome of any gel electrophoresis procedure.
6. Summarize the steps involved in predictive genetic testing.