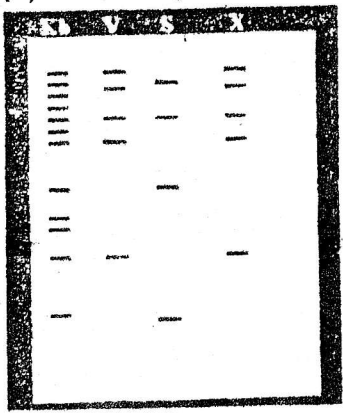


To determine the paternity of the child the attached DNA was combined with the restriction enzyme **ECOR I**. This restriction enzyme recognizes and cuts the sequence: **GAT/ATC**. Cut the DNA into the appropriate fragments and place them on your gel electrophoresis model. Use the model to answer the conclusion questions.

1. Who is the father of the child? Explain how your group came to this conclusion.
2. What size DNA fragment does the child have in common with her mother?
3. What size DNA fragment does the child have in common with her father?
4. If we did not have a sample of John's DNA could you be certain that Bob is not the father? Explain your answer.
5. Creating DNA fingerprints with gel electrophoresis is also used to solve crimes. Below is a picture of a DNA fingerprint that could be used to solve a crime. If a skin cells were found on a victim at the crime scene (V) and skin samples were taken from two suspects (X and S), who committed the crime?



**Paternity DNA Samples**

MOTHER - ATGATATCCCGTCAATTGATATC

CHILD - ATCAAAGATATCCCGTCAATTGAT

BOB - GCCTTACAAGAACCGATATCCCA

JOHN - GATATCAAGATATCAGATATCCC

Mother

Child

John

Bob

