

Gel Electrophoresis Worksheet

- 1) A certain restriction enzyme seeks out the base sequence AATT and cuts between the 2 A's. In the grid below, draw a row of 20 nucleotide base pairs and include this sequence randomly throughout as often as you wish.
- 2) Whenever you have the sequence AATT in the template strand, use a pencil to lightly shade in the sequence. This is known as a restriction site.
- 3) Now, for each restriction site, draw a thick line between the 2 A's. This indicates where the restriction enzyme will cut the DNA.
- 4) Indicate the total number of restriction sites you have in your entire DNA sequence: ____
- 5) Cut out your entire DNA sequence from the middle of this page so that it is one long rectangle. Then, following the lines you drew in for each restriction site, cut your DNA into the fragments created by the restriction enzyme.
- 6) Indicate the total number of fragments created by the restriction enzyme: ____
- 7) On the back of each fragment, write your name and the number of base pairs the fragment has.

DNA Fragment

Questions for Discussion:

- Is the perpetrator of the crime scene present in the classroom? How do you know?
- Ignoring the crime scene lane, are there any two banding patterns that are exactly alike?
- If no two banding patterns are alike, how would you explain this?
- If there are banding patterns that are alike, how would you explain this?
- Why was the Simulated Gel numbered in descending order starting from the top?
- What do the positive (+) and negative (-) signs represent, and why was the positive placed at the bottom of the gel?