DNA technology

Bacteria aren't eukaryotes
Other than chromosome DNA, circular DNA (plasmids) that is one big double stranded ring of gene without an end.
You can insert a gene into the plasmid and put it back into the bacteria, will begin to clone recombinant plasmid DNA.

Gel electrophoresis

1. Separates DNA based on size (molecular weight, measured by number of base pairs). *ignore charge and conformation, applies to RNA and proteins respectively.*
2. DNA ladder added in the first well as a basis of comparison, as it contains DNA fragments of different size and weight, measured as 500bp. bp info given as reference to find out size of DNA samples
3. Load sample into well by angling pipette at an angle
4. DNA has negative charge and will be attracted to anode under electric current. Agarose gel serves as molecular sieve to separate DNA based on size. DNA fragments which are longer/heavier will migrate slower and hence travel a shorter distance than those which are shorter/lighter. (goes from cathode to anode)
5. Larger DNA are much better separated, while smaller DNA fragments poorly separated (the further away, the lighter)
6. Load with **well towards negative charge**

"brief" explanation of transformation: bacteria's cell wall is fluid and it is subjected to heat shock (heating and rapid cooling) so the membrane (phospholipid layer) will move and the plasmid quickly goes in

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