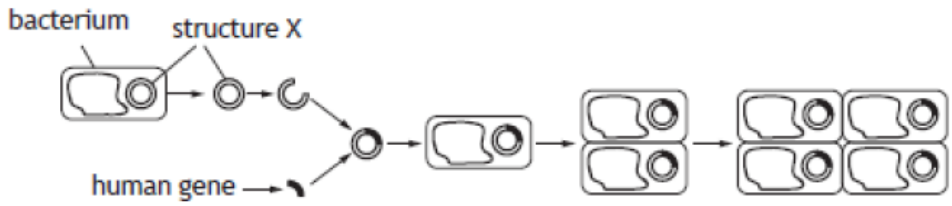
Unit 1 Key Area 5 Genetic Engineering

Genetic information can be transferred from one cell to another by genetic engineering.

Stages of Genetic Engineering:



In the diagram above Structure X is the bacterial plasmid.

1. Identify the section of DNA that contains the required gene from source chromosome (e.g. human insulin gene)

2. Extract the required gene

3. Extract the plasmid from a bacterial cell

4. Insert the required gene into the bacterial plasmid

5. Insert the plasmid into the host bacterial cell to produce a genetically modified(GM) organism.

Enzymes are used in genetic engineering to:

remove the required gene from the source chromosome ,

cut open the bacterial plasmid,

seal the required gene into the plasmid