Human Genome Project

Finding the complete sequence of HUMAN DNA.

Identifying all genes and their sequence and what protein they code for.

Identifying on which chromosome each GENE is located on and where on the chromosome

Recombinant DNA

Finding a specific gene that makes a specific protein

(example the gene to make insulin)

Taking the gene and inserting it into another organism

The organism will produce that protein for you

You collect it and give it to people who need it

Genetically modified crops

Changing the DNA of plants

We can make them produce more/bigger/juicier/more vitamins etc

We can make them resistant to disease or drought or insects

Genetically modified animals

Changing the DNA of animals

We can make them produce more/bigger/meatier/more protein/more vitamins etc

We can make them resistant to disease or drought or insects/need less food and water

Gene therapy

Using recombinant DNA to put unmutated genes in animals to cure disease

Example is cystic fibrosis

Bioremediation

Using transgenic organisms that can do specific tasks for us

Example – oil eating bacteria to clean oil spills

Cloning

Making an exact copy of a whole organism

Example – Dolly the sheep

Stem cells

Cells that when they divide can become different kind of cells that an organism needs

Used in cloning

In vitro fertilization

Combining egg and sperm in a test tube

Human genome project

Sequencing human DNA. Knowing all the genes and what chromosome they are on

Helps identify genetic diseases