

Molecular Genetics- Chromosomes and Gene Function

LO:

- To introduce genetics
- Encourage critical thinking
- Introduce the scientific method
- To understand the relationship between inherited human diseases, protein structure and function, and changes in DNA sequences (mutations).

General Notes

- Clones- one or more organisms with genetically identical *data(not information)*
- Sex creates diversity
- Cloning does not create diversity
- Identical twins are examples of clones but remember they are also individual organisms with their own interests etc
- Remember that identical twins must be the same sex, whereas non-identical twins can be the same sex or different sex to each other

What is a gene?

- There are a number of definitions of what a gene is. For example, some say it is a sequence of DNA that codes for a protein / characteristic.
- BUT REALLY THERE ISN'T A DEFINITION OF A GENE
- There are no 'units' of inheritance that many definitions refer to

Wondrously made

Before;

There were many misconceptions. Two were particularly misleading; Hartsoeker- argued it was a fully formed male inside a sperm that they saw under a microscope- what he called a 'homunculus'. Another idea was that parents' characteristics mixed and forever changed into the child like how two paint colours mix to make a new one- this was known as the idea of 'blended inheritance'.

Now we know;

- It all starts from an egg and sperm
- You divide to become multicellular
- It is cell specialisation and co-operation that allows this
- You become complex beings
- Cells get nutrients from the environment