Foxford Learning Plan

KS4

Biology

Inheritance, variation, and evolution

Key Vocabulary

Variation	The differences between individuals due to genes, the environment or a combination of both.
Sex chromosomes	A pair of chromosomes responsible for the determination of gender. XY in males. XX in females.
Selective breeding	The process by which humans artificially select organisms with desirable characteristics and breed them to produce offspring with desirable phenotypes.
Phenotype	An organism's observable characteristics. Due to interactions of the genotype and the environment.
Nucleotide	The monomers of DNA consisting of a common sugar, a phosphate group and one of four chemical bases (A, T, C, G) attached to the sugar.
Meiosis	A form of cell division that produces gametes, non-identical cells with half the usual number of chromosomes.
Mitosis	A form of cell division that produces two genetically identical daughter cells (with a full set of chromosomes) from one parent cell.
Heterozygous	When someone has two different alleles of a gene e.g. Ff. www.pmt.education www.pmt.education
Homozygous	When someone has two identical alleles of a gene e.g. ff.
Gametes:	Sex cells (sperm and egg cells) with half the usual number of chromosomes
Gene:	A section of DNA that codes for a specific sequence of amino acids which undergo polymerisation to form a protein

Key Skills

Over the course of the topic, I will be able to: -

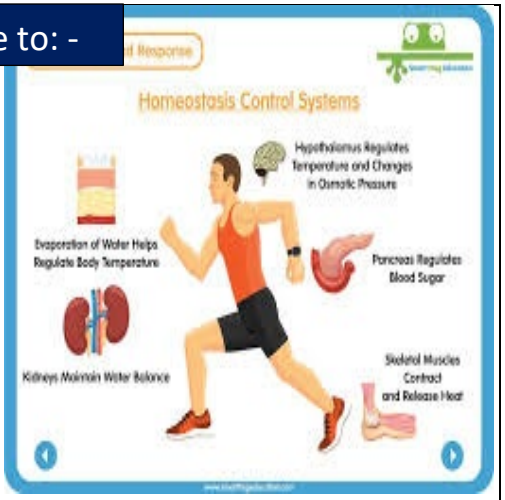
Debate: research and discuss 'DNA profiling' for health.

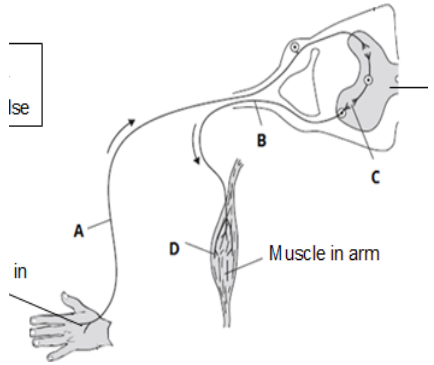
Debate whether human cloning should be allowed.

Complete Punnett squares and genetic crosses. Interpret the results and describe the offspring.

Role play – choices for parents of a cystic fibrosis sufferer who would like another child.

Interpret genetic diagrams of Mendel's experiments.





I will Understand

1. Describe the difference between Sexual and Asexual reproduction.
2. Carefully and accurately compare mitosis and meiosis
3. Explain using a Punnett square and genetic diagram how sex is determined in humans.
4. Describe the structure of DNA using diagrams and models.