

Subject	Year	Term
Biology	12	2
Topic		
Cell Division & Genetic Diversity		
Content (Intent)		
Prior Learning (Topic) B2b – Organisation (enzymes); B1 – Cell Biology		
<ul style="list-style-type: none"> • The events of the cell cycle. • Mitosis as cell division that produces 2 genetically identical daughter cells. • Process and purpose of mitosis. • Uncontrolled cell division leads to the formation of cancer. Treatments often involve controlling the rate of cell division. • The process of binary fission in prokaryotes. • The process of replication in viruses involving host cells. • Gene mutations are changes in the DNA base sequence that arise spontaneously. They can affect the structure of a polypeptide if they occur in exons, however not all mutations do affect polypeptide structure. • Mutagenic agents can increase the rate of gene mutation. • The process and purpose of meiosis, a cell division that produces 4 genetically different haploid daughter cells. • How meiosis and fertilisation introduce/maintain variation in a population. 		
Future Learning (Topic) Year 13 topics: Mutations & Gene expression; Gene Technologies		
How will knowledge and skills be taught? (Implementation)	How will your understanding be assessed & recorded (Impact)	
<p><i>Demos</i> Modelling of chromosome behaviour in mitosis and meiosis</p> <p><i>Practical work</i> Required practical 2 – preparation of stained root tip squashes to view stages of mitosis</p> <p><i>Written</i> Class notes Past paper questions in class Past paper questions in homeworks</p>	<p>- 5 x standard homeworks (Grade given. Written & verbal feedback. Response expected.)</p> <p>-1 x end of topic test (Level given. Verbal feedback to class and individuals.)</p>	
How can parents help at home?		
<p>Look at the topic specific resources on the VLE</p> <p>Use appropriate youtube channels: cognito, freesciencelessons, Crash Course Biology.</p> <p>Encourage students to use the textbook issued.</p>		

Take an interest! Ask your children what they have learnt and be curious about their learning.

Helpful further reading/discussion

Reading

New Scientist
The Biologist Magazine –
Royal Society of Biology
Royal Society of Biology blog
The Double Helix – James
Watson

Vocabulary Lists

*Mitosis, meiosis,
homologous chromosomes,
chromatids, spindle fibres,
centrioles, centromeres,
interphase, prophase,
metaphase, anaphase,
telophase, benign,
malignant, haploid, diploid,
crossing over, independent
segregation, variation.*

Careers Links

Biochemistry
Biomedical science
Biological sciences
Medicine
Veterinary medicine
Bioveterinary science
Healthcare science
Radiology
Genetics
Oncology