

Subject	Year	Term
Biology	13	2
Topic		
Mutations & Gene Expression		
Content (Intent)		
Prior Learning (Topic) Year 12: Proteins, Enzymes & Digestion; Nucleic acids, DNA, protein synthesis; Cell Division & Genetic Diversity		
<ul style="list-style-type: none"> • Gene mutations that arise during DNA replication – addition, deletion, substitution, inversion, duplication and translocation • Gene mutations are random but mutation rate is increased by mutagenic agents • The role of gene mutations in cancer • Transcriptional factors • Totipotent cells can divide and produce any type of body cell. The specialise by only translating part of their DNA during development. • Differences between totipotent cells and pluripotent, multipotent and unipotent cells. • Evaluating use of different stem cell types in treating human disorders. • Epigenetics and the role of acetylation and methylations in DNA as causes of cancer 		
Future Learning (Topic) Year 13 – Gene Technologies		
How will knowledge and skills be taught? (Implementation)	How will your understanding be assessed & recorded (Impact)	
<p><i>Demos</i> How different mutations change the DNA base sequence</p> <p><i>Practical work</i> None in this topic</p> <p><i>Written</i> Class notes Past paper questions in class Past paper questions in homeworks</p>	<p>- 4 x assessed homeworks (Grade given. Written & verbal feedback. Response expected.)</p> <p>-1 x end of topic test (Grade 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> <p>Take an interest! Ask your children what they have learnt and be curious about their learning.</p>		
Helpful further reading/discussion		
<p>Reading New Scientist Biological Science Review Magazine</p>	<p>Vocabulary Lists <i>Mutation, tumour suppressor gene, proto-oncogene, oncogene,</i></p>	<p>Careers Links Biochemistry Biomedical science Biological sciences</p>

<p>The Biologist Magazine – Royal Society of Biology Royal Society of Biology blog A Life Decoded – Craig Venter The Immortal Life of Henrietta Lacks – Rebecca Skloot Genome – Matt Ridley</p>	<p><i>epigenome, histone, acetylation, methylation, transcriptional factor, promoter region, stem cells, totipotent, pluripotent, multipotent, unipotent, induced pluripotent stem cells.</i></p>	<p>Medicine Veterinary medicine Bioveterinary science Healthcare science Radiology Geneticist Oncologist Cancer research</p>
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