Edexcel International GCSE Biology 4BI1 Learning Plan

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|  **Unit: 5. Variation and Selection** | **Chapter: 16. Chromosomes, Genes and DNA** | **Hours: 5** |
| Content coverage | Learning outcomes | Resources | Assessment |
| **Section 3: Reproduction and inheritance****b)** Inheritance | **3.14** understand that the genome is the entire DNA of an organism and that a gene is a section of a molecule of DNA that codes for a specific protein**3.15** understand that the nucleus of a cell contains chromosomes on which genes are located**3.16B describe a DNA molecule as two strands coiled to form a double helix, the strands being linked by a series of paired bases: adenine (A) with thymine (T), and cytosine (C) with guanine (G).****3.18B describe the stages of protein synthesis including transcription and translation, including the role of mRNA, ribosomes, tRNA, codons and anticodons****3.19** understand how genes exist in alternative forms called alleles which give rise to differences in inherited characteristics**3.32** know that in human cells the diploid number of chromosomes is 46 and the haploid number is 23. **3.34** understand that mutation is a rare, random change in genetic material that can be inherited**3.35B understand how a change in DNA can affect the phenotype by altering the****sequence of amino acids in a protein****3.36B understand how most genetic mutations have no effect on the phenotype, some have a small effect and rarely do they have a significant effect****3.37B understand that the incidence of mutations can be increased by exposure to ionising radiation (for example, gamma rays, x-rays and ultraviolet rays) and some chemical mutagens (for example, chemicals in tobacco).** | Video: Biology Section 3 – Lesson 3 Genetics and Inheritance (part 1) – beginning to 08:20. Biology Section 3 – Lesson 4 – Genetics and Inheritance (part 2) – 12.05 to end.Powerpoint: Biology Section 3 Lesson 3 – slides 1 to 35. Biology Section 3 Lesson 4 – slides 51 to end.Textbook pages:228 – The Structure of DNA229 – The Genetic Code230 – The stages of protein synthesis234 – The structure of chromosomes | Page 238 – 239 Qs 1 to 8Textbook Answers (PDF)Chapter 16 - exam question - pdfChapter 16 - exam question mark scheme – pdfChapter 16 - Talking paper video  |

Videos – [www.igcsesciencecourses.com](http://www.igcsesciencecourses.com)

Textbook Ref: Edexcel International GCSE (9-1) Biology Student Book - Pearson (Bradfield and Potter)