

## Year 11 Biology (Triple) Learning Programme 2

<p>The LORIC skill focus for his LP is: ORGANISATION The Moral Virtues focus for this LP are: COMPASSION and HONESTY Compassion - the quality of feeling pity and concern for the sufferings or misfortunes of others. Honesty - the quality of being truthful.</p> <p><b>What will I be learning about in this Learning Programme?</b> You are learning about DNA and its role in controlling the characteristics of an organism.</p> <p><b>Where have I seen this learning before?</b> You have learnt about the structure of DNA and sexual reproduction at KS3.</p> <p><b>What could I use it for?</b> You will use this again if you study A-level Biology or pursue a BSc in Genetics.</p>		<p><b>Literacy:</b></p> <ul style="list-style-type: none"> <li>• Capital letters must be used at the start of sentences and for the first letter of proper nouns</li> <li>• Full stops must be used at the end of a sentence</li> <li>• Question marks must be used at the end of a question</li> <li>• Apostrophes should only be used for possession or omission</li> <li>• Days of the week and months must be spelled correctly</li> <li>• Key words must be spelled correctly</li> </ul>
<p><b>In LP2.1, I will know:</b> 21/10/24 - (WK 2)</p> <p>that genes work by coding for the production of a particular protein, and non-coding genes switch genes on and off; and be able to explain the importance of understanding the human genome in understanding historical human migration; and be able to describe the structure of DNA as repeating nucleotide units, identify the four bases in DNA and explain that the bases A and T, and C and G, are complementary.</p>	<p><b>Key Vocabulary</b></p> <p>Genome</p>	<p><b>Homework</b></p> <p>Short questions on DNA</p>
<p><b>In LP2.2, I will know:</b> 04/11/24 - (WK 1)</p> <p>how proteins are synthesised according to the DNA template of a gene and EXPLAIN that the genetic code of a gene specifies the protein to be made; mutations as changes to the base sequence of DNA, and explain that their effects can be positive or negative and DESCRIBE how mutations can affect protein function.</p>	<p><b>Key Vocabulary</b></p> <p>Nucleotide</p>	<p><b>Homework</b></p> <p>Exam question on mutations</p>
<p><b>LP2 RLW, I will:</b> 11/11/24 - (WK 2)</p> <p>review my learning, recalling and applying key knowledge, and focus on closing any gaps in my knowledge.</p>		
<p><b>In LP2.3, I will know:</b> 18/11/24 - (WK 1)</p> <p>the events of the cell cycle and explain the synthesis of new sub-cellular components and DNA; that the four gametes produced by meiosis are genetically different; that sexual reproduction leads to variety in the offspring.</p> <p>Extended Task.</p>	<p><b>Key Vocabulary</b></p> <p>Variation</p>	<p><b>Homework</b></p> <p>Short questions on sexual and asexual reproduction</p>
<p><b>In LP2.4, I will know:</b> 25/11/24 - (WK 2)</p> <p>how selective breeding can lead to inbreeding and evaluate the benefits and risks of selective breeding in plants; how to revise for summative assessment; how to complete a summative assessment.</p>	<p><b>Key Vocabulary</b></p> <p>Selective breeding</p>	<p><b>Homework</b></p> <p>Exam question on selective breeding</p>
<p><b>In LP2.5, I will know:</b> 02/12/24 - (WK 1)</p> <p>how genetic engineering works and introduce applications of the process; the benefits of genetic modification in a range of crops and how cuttings and tissue culture are used to produce new plants; the use of embryo transplants and adult cell cloning in animals.</p>	<p><b>Key Vocabulary</b></p> <p>Genetic modification</p>	<p><b>Homework</b></p> <p>Short questions on genetic engineering</p>
<p><b>In LP2.6, I will know:</b> 09/12/24 - (WK 2)</p> <p>and understand the search for genes that are linked to disease and understand and use probability when predicting the outcomes of genetic crosses; how to construct Punnett squares to predict the outcome of genetic crosses for inheritance of recessive (CF) and dominant (Polydactyly) disorders; Extended Task.</p>	<p><b>Key Vocabulary</b></p> <p>Gene</p>	<p><b>Homework</b></p> <p>Exam question on genetic diseases</p>
<p><b>In LP2.7, I will know:</b> 16/12/24 - (WK 1)</p> <p>the mechanism of genetic variation; how microscopic examination, fossils and biochemistry have led to modern evolutionary trees- Woese and Linnaeus; my strengths and developments so far.</p>	<p><b>Key Vocabulary</b></p> <p>Inheritance</p>	<p><b>Homework</b></p> <p>Short questions on genetic crosses</p>
<p><b>Resources to support learning:</b> Knowledge organiser, BBC GCSE bitesize, science booklet on synergy, Cognito videos</p>		
<p><b>FFET Award Challenge for this Learning Programme:</b> Complete a practice paper independently.</p>		

