

# Yr13 Biology – Unit 3.7

## MAGHULL HIGH SCHOOL – CURRICULUM MAP



| Sequence   |  |                                |   |   |                  |
|--|--|--------------------------------|---|---|------------------|
| <b>TOPIC (S)</b><br><b>Genetics, populations, evolution &amp; ecosystems</b> | 1. Inheritance<br>2. Populations   |                                | 3. Evolution may lead to speciation<br>4. Populations in ecosystems |   |                  |
|  | <b>Knowledge &amp; Skills development</b> <ul style="list-style-type: none"> <li>Define genotype, phenotype, heterozygous and homozygous</li> <li>Use fully labelled monohybrid and dihybrid crosses to predict the results of dominant, recessive and codominant.</li> <li>Use a chi square test.</li> <li>Use the hardy-weinberg principle</li> <li>Describe how mutations occur</li> <li>Define interspecific, intraspecific, abiotic and biotic.</li> <li>Describe and calculate population sizes of immobile organisms using quadrats.</li> <li>Describe the mark-release-recapture method to calculate the number of a species.</li> <li>Describe and explain succession</li> <li>Show understanding of the need to manage the conflict between human needs and conservation in order to maintain the sustainability of natural resources</li> <li>Evaluate evidence and data concerning issues relating to the conservation of species and habitats and consider conflicting evidence</li> <li>Use given data to calculate the size of a population estimated using the mark-release-recapture method.</li> </ul> |                                |   | <ul style="list-style-type: none"> <li>Describe and explain the effects of stabilising, directional and disruptive selection.</li> <li>Explain the stages that lead to speciation</li> <li>Define allopatric and sympatric speciation</li> <li>explain why individuals within a population of a species may show a wide range of variation in phenotype</li> <li>Explain why genetic drift is important only in small populations</li> <li>Explain how natural selection and isolation may result in change in the allele and phenotype frequency and lead to the formation of a new species</li> <li>Explain how evolutionary change over a long period of time has resulted in a great diversity of species.</li> </ul> |                  |
| <b>Assessment / Feedback Opportunities</b>                                   | Exam questions – teacher assessed  | Exam questions – self assessed | Extended writing task – teacher assessed                            | Deep marking of required practical in lab books   | Topic assessment |
| <b>Cultural Capital</b>  | <ul style="list-style-type: none"> <li>Chester Zoo Visit</li> </ul>  |                                |   |   |                  |

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| <b>SMSC / Promoting British Values</b><br>(Democracy, Liberty, Rule of Law, Tolerance & Respect) | <ul style="list-style-type: none"> <li>• Discuss issues relating to conservation of species and habitats.</li> <li>• understanding of the need to manage the conflict between human needs and conservation in order to maintain the sustainability of natural resources</li> </ul>   |
| <b>Reading opportunities</b>   | <ul style="list-style-type: none"> <li>• Recommended Read: Richard Leaky: The Origin of Humankind</li> </ul>   |
| <b>Key Vocabulary</b>  | Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest, Absolute, Uncertainty, Error, Gene, Locus, Alleles, Homozygous, Heterozygous, Dominant, Recessive, Codominant, Monohybrid, Dihybrid, Haploid, Diploid, Phenotype, Genotype, Heritable, Epistasis, Autosomal linkage, Autosome, Epistasis, Speciation, Sympatric, Allopatric, Niche, Abiotic, biotic, Interspecific, Intraspecific, Succession, Conservation |
| <b>Digital Literacy</b>  | The use of excel to plot graphs and analyse data<br>MSOffice35 apps including SharePoint   |
| <b>Cross-Curricular Links</b>  | Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators  |
| <b>Careers</b>   | Zoologist, Wildlife conservationist, wildlife management,  |