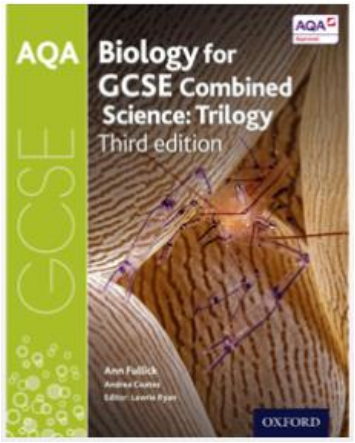
Year 10 Combined Biology (Trilogy) Instructions for Summer Term

Double Science: Trilogy Biology for 10S3, 10S4, 10S5 and 10S6. The Topics covered will be B12 Reproduction and B13 Variation and Evolution. Please note: B12 and B13 refer to the sections in the Digital Trilogy Biology e-book on Kerboodle which students can access when they log into their account on www.kerboodle.com. Students can read the double page spreads, in the digital e-books, for each topic covered below to support their learning alongside the work set from www.theeverlearner.com.



Enquiry Questions:

1. ***What is DNA, what is a genome, and why is it so important to be able to analyse the genome of an organism?***
2. ***How are characteristics passed on from parents to offspring?***
3. ***What is genetic engineering and what are the potential benefits and disadvantages of this technology?***
4. ***How does evolution by natural selection take place and why are mutations important?***

Week	Title	Success checklist	Work to submit	Date due
1	**B12 Reproduction** B12.1 Types of reproduction B12.2 Cell division in sexual reproduction	I can describe the differences between asexual and sexual reproduction. I can describe the advantages and disadvantages of sexual and asexual reproduction I can describe the processes of mitosis and meiosis. I can explain how meiosis halves the number of chromosomes in gametes and fertilisation restores the full number.	Students will watch two teaching videos (covering both lessons B12.1 and B12.2), and will make notes in the 'notes' section. Students will use the Test practice area to review knowledge – while using their notes taken whilst watching the video. Automatic feedback will be given to address misconceptions or incorrect answers. Students will complete and submit the **TEST YOURSELF** which will be monitored by the class teacher.	27th April 2020
2	**B12 Reproduction** B12.3 DNA and the genome B12.4 Inheritance in Action	I can describe the relationship between DNA, genes and chromosomes. I can describe how the four bases make up a code. I can use the terms allele, dominant, recessive, homozygous and heterozygous correctly.	Students will watch the two videos – DNA and the Genome and Genetic inheritance (covering both lessons B12.3 and B12.4), and will make notes in the 'notes' section. Students will use the Test practice area to review knowledge – while using their notes taken whilst	4th May 2020

		I can describe a phenotype when given the genotype. I can use a Punnett square diagram to predict the outcome of a monohybrid cross using the theory of probability	watching the video. Automatic feedback will be given to address misconceptions or incorrect answers. Students will complete and submit the **TEST YOURSELF** which will be monitored by the class teacher.	
3	**B12 Reproduction** B12.5 More about genetics	I can carry out a genetic cross to show sex inheritance. I can use direct proportion and simple ratios to express the outcome of a genetic cross.	Read pages 170 -171 of the Kerboodle digital Trilogy Biology textbook. 10S3 and 10S4 complete summary questions 1 to 4. 10S5 and 10S6 compete summary questions 1 to 3. Students should complete the questions and then mark their answers using the markschemes which will be provided. Work does not have to be submitted but students should contact their teacher about any work they do not understand.	11th May 2020
4	**B12 Reproduction** B12.6 Inherited disorders B12.7 Screening for genetic disorders	I can name examples of inherited disorders, such as cystic fibrosis and polydactyly. I can use a genetic cross to explain how inherited disorders are passed on. I can outline the methods used to screen embryos. I can state advantages and disadvantages of embryo screening.	Students will watch the teaching video – The influence of genes (covering both lessons B12.6 and B12.7), and will make notes in the 'notes' section. Students will use the Test practice area to review knowledge – while using their notes taken whilst watching the video. Automatic feedback will be given to address misconceptions or incorrect answers.	18th May 2020

			Students will complete and submit the **TEST YOURSELF** which will be monitored by the class teacher.	
5	**B12 Reproduction** B12 Topic Review B12 Assessment task		Re-watch any of the videos in this section. Students may want to read through pages 162 to 175 of the Trilogy Biology digital textbook on Kerboodle. Students should feel confident with the content covered. Complete Check point 4 to the best of your ability and submit by the due date	25th May 2020
6	**B12 Reproduction** B12 GCSE Exam questions		Students complete self-assessment of GCSE Style questions, which will be green-penned and self-assessed using markscheme answers. No submission required here, as students will be monitored by their teacher from the test questions and Checkpoint activity previously done.	8th June 2020
7	**B13 Variation and Evolution** B13.1 Variation B13.2 Evolution by Natural Selection	I can list some examples of variation in plants and categorise as being due to genetic, environmental causes or both. I can suggest reasons why identical twins will start to show variation as they get older. I can explain how a mutation may lead to a new phenotype. I can describe the steps that take place during evolution by natural selection.	Students will watch two teaching videos (covering both lessons B13.1 and B13.2), and will make notes in the 'notes' section. Students will use Test practice area to review knowledge – while using their notes taken whilst watching the video. Automatic feedback will be given to address misconceptions or incorrect answers. Students will complete and submit the **TEST YOURSELF** which will be monitored by the class teacher.	15th June 2020

8	**B13 Variation and Evolution** B13.3 Selective breeding B13.4 Genetic engineering	I can explain the process of selective breeding. I can explain why humans have used selective breeding. I can explain what inbreeding is and why it is a problem in dog breeding. I can describe the steps used in genetic engineering to produce GM organisms. I can analyse data to describe why growing GM crops maybe be beneficial to a farmer.	Students will watch two teaching videos (covering both lessons B13.3 and B13.4), and will make notes in the 'notes' section. Students will use Test practice area to review knowledge – while using their notes taken whilst watching the video. Automatic feedback will be given to address misconceptions or incorrect answers. Students will complete and submit the **TEST YOURSELF** which will be monitored by the class teacher.	22nd June 2020
9	**B13 Variation and Evolution** B13.5 Ethics of genetic technologies Checkpoint assessment	I can outline the potential benefits and risks of genetic engineering. I can describe economic and ethical concerns that people may have about cloning animals	Read pages 186 -187 of the Kerboodle digital Trilogy Biology textbook. 10S3 and 10S4 complete summary questions 1 to 3. 10S5 and 10S6 complete summary questions 1 and 2. Students should complete the questions and then mark their answers using the markschemes which will be provided. Complete Check point 5 to the best of your ability and submit by the due date	6th July 2020
10	Evidence of evolution		Students will watch the teaching video (Evidence of evolution), and will make notes in the 'notes' section. Students will use the Test practice area to review	13th July 2020

			knowledge – while using their notes taken whilst watching the video. Automatic feedback will be given to address misconceptions or incorrect answers. Students will complete and submit the **TEST YOURSELF** which will be monitored by the class teacher.	
11	Classification of living organisms		Students will watch the teaching video (Classification of living organisms), and will make notes in the 'notes' section. Students will use the Test practice area to review knowledge – while using their notes taken whilst watching the video. Automatic feedback will be given to address misconceptions or incorrect answers. Students will complete and submit the **TEST YOURSELF** which will be monitored by the class teacher.	20th July 2020
12	Review of topics: • Evidence of evolution • Classification of living organisms		Re-watch the videos on the topics: • Evidence of evolution • Classification of living organisms Review the notes that you made whilst you first watched the video. Complete CheckPoint 6.	22nd July