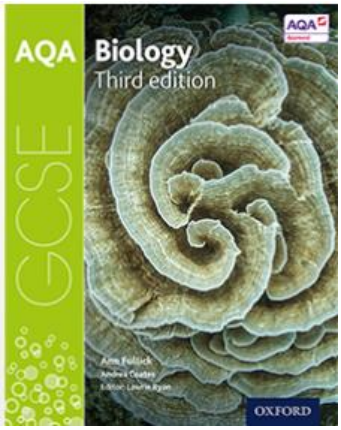
Triple Science: Biology for 10S1 and 10S2. The Topics covered will be B13 Reproduction and B14 Variation and Evolution. Please note: B13 and B14 refer to the sections in the Digital Biology e-book on Kerboodle which students can access when they log into their account on www.kerboodle.com. Students can 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	**B13 Reproduction** B13.1 Types of reproduction B13.2 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 B13.1 and B13.2), 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	**B13 Reproduction** B13.3 The best of both worlds	I can describe how malarial parasites and fungi reproduce both asexually and sexually. I can list the ways plants can reproduce asexually I can explain in detail how plants reproduce sexually.	. Read pages 200 -201 of the Kerboodle digital Biology textbook. B13.3 The best of both worlds Complete summary questions 1 to 3.	4th May 2020

	B13.4 DNA and the genome	I can describe the relationship between DNA, genes and chromosomes. I can describe how the four bases make up a code.	Students should complete the questions and then mark their answers using the markschemes which will be provided. Students will watch the teaching video – DNA and the genome, 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.	
3	**B13 Reproduction** B13.5 DNA structure and protein synthesis B13.6 Gene expression and mutation	I can describe how proteins are synthesised on ribosomes I can explain how proteins fold so that they are able to carry out their function I can describe that a gene is made of section of DNA. I can explain what mutations are and the possible effects of mutations.	Students will watch the teaching video – Protein synthesis (covering both lessons B13.5 and B13.6), 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.	11th May 2020

4	**B13 Reproduction** Review Protein synthesis B13.7 Inheritance in action	I can describe how proteins are synthesised on ribosomes I can explain how proteins fold so that they are able to carry out their function I can use the terms allele, dominant, recessive, homozygous and heterozygous correctly. 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	Read pages 204 -205 of the Kerboodle digital Biology textbook. B13.5 DNA structure and protein synthesis Complete summary questions 1 to 3. Students should complete the questions and then mark their answers using the markschemes which will be provided. Students will watch the teaching video – Genetic inheritance 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.	18th May 2020
5	**B13 Reproduction** B13.8 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 210 -211 of the Kerboodle digital Biology textbook. Complete summary questions 1 to 4. Students should complete the questions and then mark their answers using the markschemes which will be provided.	25th May 2020

			Students should spend some time now reviewing the topic content covered so far and get in touch with their teacher about any aspect of the work that they do not fully understand.	
6	**B13 Reproduction** B13.9 Inherited disorders **B13 Reproduction** B13.10 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 B13.9 and B13.10), 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.	8th June 2020
7	**B13 Reproduction** B13 Topic review B13 GCSE Exam questions		Re-watch any of the videos in this section. Students may want to read through pages 196 to 215 of the Biology digital textbook on Kerboodle. Students should feel confident with the content covered. Complete Check point 5 to the best of your ability and submit by the due date	15th June 2020

8	**B14 Variation and Evolution** B14.1 Variation B14.2 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 B14.1 and B14.2), 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.	22nd June 2020
9	**B14 Variation and Evolution** B14.3 Selective breeding B14.4 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 B14.3 and B14.4), 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.	6th July 2020

10	Cloning		Students will watch the teaching video (Cloning), 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.	13th July 2020
11	Review of variation and Evolution topic		Re-watch the videos on the topics: • Variation • Evolution by natural selection • Selective breeding • Genetic engineering • Cloning Review the notes that you made whilst you first watched the video.	20th July 2020
12	CheckPoint assessment on Variation and Evolution topic		Complete CheckPoint 6 and submit by the due date.	22nd July

Year 10 S1 and 10S2 – Summer term 1 overview