Subject: Biology

Exam details: OCR Biology A

Assessment:
A Level Biology consists of 3 papers, assessed at the end of Y13:
Paper 1 Biological processes (2hr 15 min (37%)), Paper 2 Biological diversity (2hr 15 min (37%)), Paper 3 Unified biology (1 Hr 30 min (26%)) and Practical endorsement (Internally assessed)

Course structure:
Year 12
Cell structure; Biological molecules; Exchange and transport; Biodiversity, evolution and disease.
Year 13
Communication, homeostasis and energy; Genetics, evolution and ecosystems.

Additional information: The practical endorsement involves all the practical skills developed over the 2 years.

You will need to keep a book of all practical work completed as part of your evidence for the Practical Endorsement for both Years 12 and 13. This work should be completed as you carry out each practical and will not need writing up, although there will be additional research questions to complete to extend your knowledge.

Book Recommendations

It is vital that you are accustomed to completing wider reading around topics you will cover during your A levels. As a starting point, we recommend the following titles:

You will need to purchase your own textbook which follows the OCR Biology "A" specification. Our preferred book is endorsed by OCR;

OCR AS Biology A Student Book

(Sue Hocking ,Frank Sochacki and Mark Winterbottom) published by Pearson, ISBN 9781447990796.

You can find a copy of the book at the link below:
http://www.amazon.co.uk/Level-Biology-Student-Activebook-Science/dp/144799079X/ref=sr_1_1?ie=UTF8&qid=1435156865&sr=8-1&keywords=OCR+AS%2FA+level+Biology+A%2C+by+Sue+Hocking+%2CFrank+Sochacki+and+Mark+Winterbottom%2C+published+by+Pearson%2C+ISBN+9781447990796

Biology Summer Task

Please ensure you complete the following task in preparation for your September start. Preferably, email it to Mrs Loveday (cloveday@emmbrook.wokingham.sch.uk) when it is completed, or bring it in to the first lesson

The first two units you will be studying are Cell Biology, starting with microscopes, and Biological Molecules. Your task is to complete the following as fully as you can using resources available to you:

Cell Biology

Answer the following

1. Describe the light microscope and the electron microscope (diagrams may help). List the similarities and differences.

(6)

2. Define the terms 'resolution' and 'magnification'

(2)

3. Copy and complete the following table:

Feature	Light microscope	Transmission electron microscope	Scanning electron microscope
Wavelength			
Resolution			
Maximum useful magnification			
Description of image			
Specimens (living or non-living)			
Ease of use			
Advantages	(2)	(2)	
Disadvantages	(2)	(2)	

(22)

4. Staining and sectioning are used in the preparation of slides. Briefly explain what is involved in each process. (2)

Total /32

Biological molecules

1. Define the terms:
   - Metabolism
   - Monomer
   - Polymer
   - Carbohydrate
   - Protein
   - Lipid
   - Nucleic acid

(7)

2. Copy and complete the table below to summarise the monomers used to form the polymers of carbohydrate, protein, lipid and nucleic acids

Type of molecule	Monomer(s)	Polymer(s)	Bond used to form polymer
Carbohydrate	(3)	(3)	
Protein			
Lipid	(2)	Not applicable	
Nucleic acid	(3)	(2)	

(19)

3. Describe and draw a diagram to illustrate both a condensation and hydrolysis reaction using glucose as an example.

(4)

Total /30

Useful Websites

Useful Web Sites for Advanced Level Biology

https://www.physicsandmathstutor.com/ (a good revision site)

http://www.biozone.co.uk/biolinks/ (links to overs 500 sites of biological interest)

http://www.kscience.co.uk/as/index.htm (revision card style site - click on various topics to find summary notes and multiple choice quizzes)

http://www.ocr.org.uk (for information on your course)

https://spolem.co.uk/subjects (more activities)