Course:	 **Biology**
Specification and code:	**OCR Biology A H420**
Exam Board website:	http://www.ocr.org.uk/qualifications/as-a-level-gce-biology-a-h020-h420-from-2015/
Course outline:	You will be studying a broad biology curriculum through both years. In your first year you will study cells & microscopy, including biological membranes & the cell cycle. You will also cover a module on exchange & transport in animals & plants & a module on biodiversity, evolution & disease, finishing with several days of practical field work. Throughout the course you will develop practical skills & keep a record of your practical work in order to complete your practical endorsement.
Essential Reading:	This will be your textbook, which we will issue when you start the course in September
Background reading:	Reading widely around the subject e.g. periodicals such as Nature, or New Scientist & popular science books will give rounded view and help develop understanding. Biological Sciences Review is a magazine produced by Manchester University aimed at Alevel & first year university students. https://www.hoddereducation.co.uk/science?type=5,2 The Guardian produced a list of Popular Science Biology books in 2014: https://www.theguardian.com/science/grrlscientist/2014/dec/17/the-best-science-booksof-2014-biological-sciences

Summer Task:	**Revise key skills from maths GCSE** You need to be able to use key mathematical formulae. Calculate the circumference and area of a circle Calculate the surface area & volume of rectangular prisms, of cylindrical prisms & of spheres e.g. calculate the surface area or volume of a cell Key formulae can be found in the mathematical skills handbook https://www.ocr.org.uk/qualifications/as-and-a-level/biology-a-h020-h420-from2015/planning-and-teaching/ on page 58 **Microscopes & Cells ICT Independent Learning Task** You need to do some background reading about each of the following areas. You may choose to make notes, produce a poster or record your learning in some other way. You will be expected to demonstrate your understanding in the first week of term. Images of light & electron microscopes The difference between magnification & resolution The 2 types of electron microscope, how they work and the images they produce. (Transmission electron microscope & scanning electron microscope) The maximum resolution & magnification that can be achieved with a) light microscopes b) electron microscopes (TEM, SEM, LSCM) Advantages & limitations of using a) light microscopes b) electron microscopes How to use an eye piece graticule & calibrate it with a stage micrometer Recognise cell structures in eukaryotic cells How cell structures are represented as seen with a light microscope using drawings & annotated diagrams Using & re-arranging the magnification formula *magnification = image size x object size* The similarities & differences in the structure & ultrastructure of prokaryotic & eukaryotic cells Here are some suggested websites: https://alevelnotes.com/Magnification/106 http://www.biologymad.com/cells/microscopy.htm https://www.ocr.org.uk/qualifications/as-and-a-level/biology-a-h020-h420-from-2015/planning-and-teaching/ The Biology drawing skills handbook
	https://www.slideshare.net/MrOakes/as-biology-lesson-2-measuring-cells http://www.s-cool.co.uk/a-level/biology/cells-and-organelles/revise-it/introduction-tocells http://www.biologymad.com/resources/AS%20Cells.pdf https://alevelnotes.com/Cell-Structure/6 https://www.youtube.com/watch?v=xTnNv7YplSo https://www.youtube.com/watch?v=cj8dDTHGJBY https://www.youtube.com/watch?v=9UvlqAVCoqY