

Year 11 into 12 Summer Transition Task

Subject	Biology
----------------	----------------

Qualification/Level: A LEVEL

Examination Board: OCR

The following tasks are to be completed over the summer break and handed in to the sixth form leaders on your first day of sixth form. Please clearly label work with your name and subject. If you have one, please place work in a clear plastic wallet.

Watch the two video clips below. You do not need to make any notes, but the information in the second video may be used in the assignment below.

<https://www.youtube.com/watch?v=7L7x0BAqWis>

<https://www.youtube.com/watch?v=URUJD5NEXC8>

A recurring theme in Biology is the idea of form and function – the structure of almost anything is the way it is because of the purpose that it has. You have already covered lots of examples of this in GCSE Science / Biology. For example, the heart has a particular structure that means it is good at pumping blood around the body – its form or structure suits its function. This idea extends down to even the most basic of levels – cells, the organelles that make up cells, and even the molecules of life themselves.

Your task is to produce a report that will inform the reader about the structure of the organelles that are found in eukaryotic cells and how these structures relate to the function, both of the organelles and of the cell that they are in.

You will then apply that knowledge and understanding to example cells and explain how the relative proportions of the organelles they contain vary because of the purpose of the cell.

The organelles you must include in your report are

- Nucleus
- Nucleolus
- Nuclear envelope
- Rough and smooth endoplasmic reticulum
- Ribosome
- Mitochondria
- Centriole
- Lysosome
- Golgi apparatus
- Cell wall
- Chloroplast
- Plasma membrane
- Flagella
- Cilia

Suggested Layout

1. Produce a large, labelled, hand drawn diagram of an animal cell and a plant cell showing all of the organelles in the list above that are in that cell type.
2. Provide an explanation of what we mean by the term 'cell organelles' and what we mean by the idea that their structure is related to their function.
3. Produce a hand drawn and labelled diagram of each of the organelles in the list above as they would be seen under an electron microscope.
4. Provide an explanation of the structure and function of each of the organelles in the list above.
5. Extension – provide a clear explanation to show how the structure of each organelle supports its function (i.e. link together the structure and function)

The work should be presented as a hand-written report that includes hand drawn labelled diagrams, descriptions and explanations. It must not contain any material that is directly copied from books or the internet.

The work will be assessed under Assessment Objective 1 and 2 as shown in the table below.

Students must:		% in GCE
AO1	Demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures.	35-37
AO2	Apply knowledge and understanding of scientific ideas, processes, techniques and procedures: <ul style="list-style-type: none">• in a theoretical context• in a practical context• when handling qualitative data• when handling quantitative data.	41-43

Success criteria

A successful piece of work will meet the following criteria

- The scientific information it contains is accurate
- It provides a suitable resource to revise the structure and function of cell organelles
- It is hand-written with hand drawn diagrams
- It is presented in continuous prose
- It includes a list of references to show the books and websites used for research
- It does **not** include any work copied from books or the internet

If you have any questions, please email science@manor.school