St Paul's Catholic School and Sixth Form

Transition Work for Sixth Form

"Let your light shine before others." – Matthew 5:16

Sixth Form, the St Paul's way — with Christ at the heart of it all.

AQA Biology at St Paul's Catholic School and Sixth Form

The purpose of completing the task below is to re-visit your GCSE knowledge of Cell structure and function.

After completing the task, you will be able to:

• explain what is meant by a eukaryotic cell and the defining characteristics.

• explain the roles of different components and organelles within eukaryotic cells

• interpret pictures, diagrams and electron micrographs to identify cell organelles

FINAL OUTCOME: A word-processed report of up to 4 sides of A4, including images.

Due date: Monday 1st September 2025

Task 1	Task 1 will include Researching the ultrastructure of a eukaryotic cell.
Task 2	In Task 2 you are expected to find four diagrams of specialised cells that have structural adaptations.
Task 3	Finally in Task 3, Using the evidence that you have collected, identify an organelle other than the cell nucleus that you feel is the next most critical in the functioning of a cell.

Specification: AQA Biology

Links to website: AQA | Biology | A-Level | A-level Biology

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Task 1

Research the ultrastructure of a eukaryotic cell.

Use three sources of research including a relevant Biology article/journal.

Find a labelled diagram of the ultrastructure of a cell.

Also include labelled diagrams of all the organelles mentioned in the specification details below.

Write a detailed description of the function of each of the cell organelles that you are studying.

The structure of eukaryotic cells, restricted to the structure and function of:

•• cell-surface membrane
•• nucleus (containing chromosomes, consisting of protein-bound, linear DNA, and one or more nucleoli)
•• mitochondria
•• chloroplasts (in plants and algae)
•• Golgi apparatus and Golgi vesicles
•• lysosomes (a type of Golgi vesicle that releases lysozymes)
•• ribosomes
•• rough endoplasmic reticulum and smooth endoplasmic reticulum
•• cell wall (in plants, algae and fungi)
•• cell vacuole (in plants).

In complex multicellular organisms, eukaryotic cells become specialised for specific functions. Specialised cells are organised into tissues, tissues into organs and organs into systems.

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Task 2

Find four diagrams of specialised cells that have structural adaptations.

Look at the type and number of organelles found within each cell.

Explain how variation in organelle number and type can be used to indicate the function of the cell.

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Task 3

Using the evidence that you have collected, identify an organelle other than the cell nucleus that you feel is the next most critical in the functioning of a cell.

Construct an argument supporting your view of the importance of your chosen organelle.

KEY WORDS (find the definition of each of these and include it in your report) : ultrastructure, organelle, eukaryotic