# A-Level Biology OCR (A) – Summer Transition Work

## Introduction

Welcome to A-Level Biology! Over the next two years, you'll dive deeper into how life works – from molecules and cells to ecosystems and evolution. This summer work is designed to:

* Reinforce key GCSE concepts
* Introducing foundational A-level content
* Build study skills for success at A-Level

Complete all tasks before the start of term.

## 1. Key GCSE Knowledge Review

a. Cell Biology

* Draw and label an animal and plant cell.
* List the differences between prokaryotic and eukaryotic cells.
* Define diffusion, osmosis, and active transport. Provide real biological examples.

b. Biological Molecules

* State the elements present in carbohydrates, proteins, and lipids.
* Complete the following:  
   - What is the monomer of a protein?  
   - What is the structure of a DNA nucleotide?  
   - What test is used for glucose? For starch?

c. Enzymes

* Describe how enzymes work using the lock-and-key model.
* Explain how temperature and pH affect enzyme activity.

## 2. Core A-Level Concepts Preview (optional to get ahead)

Familiarise yourself with the following key ideas (summarise each in 3–5 bullet points):

a. DNA, RNA and Protein Synthesis

* The structure and function of DNA and RNA
* The role of mRNA, tRNA, and ribosomes in translation

b. Cell Structure (A-level depth)

* Compare the resolution and magnification of light vs electron microscopes
* Functions of nucleus, mitochondria, Golgi, rough ER, smooth ER

c. Biological Molecules

Structure and bonding in:

* Monosaccharides (e.g., glucose)
* Disaccharides (e.g., maltose)
* Polysaccharides (e.g., starch, glycogen, cellulose)
* Amino acids and peptide bonds

## 3. Recommended Resources

Use these to support your transition work:

* Textbook: OCR Biology A Level (A) by Oxford
* YouTube Channels: Amoeba Sisters, Seneca Learning, A-Level Biology Tutor
* Websites:  
   - www.s-cool.co.uk  
   - www.physicsandmathstutor.com  
   - www.biozone.co.uk  
   - [www.ocr.org.uk](http://www.ocr.org.uk)

## 4. Equipment

This following is a list of equipment you will need to study A-level Biology:

* Scientific calculator
* A laptop (recommended) /tablet / paper for taking notes and accessing resources
* A4 lever-arch folder
* Pencil, 30cm ruler, Black/Blue pen, a coloured pen of your choice for corrections (purple etc.) and highlighters (recommended)