# Biology (OCR A)
# A Level Preparation Work

**Welcome to A Level Biology!** The tasks below are designed to support and prepare you to start the course.

## Folder Preparation

So that you are ready for September, please get yourself three folders and divide into sections as below. One smaller ring binder, this will be your day-to-day folder that you must bring to each lesson, and two larger A4 lever arch files, these will be for the long term storage of your notes. Please bring all these folders to the first lesson.

**Day-to-day folder:**
- Teacher 1
- Teacher 2
- Progress booklet
- Assessments

**Year 12 Lever Arch Folder (1)**

**Module 2.1:**
- 2.1.1 - Cell Biology
- 2.1.2 - Biological Molecules
- 2.1.3 - Nucleotides & Nucleic Acids
- 2.1.4 - Biological Membranes
- 2.1.5 - Enzymes
- 2.1.6 - Cell Division

**Module 3.1:**
- 3.1.1 - Exchange surfaces
- 3.1.2 - Animal Transport
- 3.1.4 - Plant Transport

**Module 4.1:**
- 4.1.1 - Communicable disease
- 4.2.1 - Biodiversity
- 4.2.2 - Classification & Evolution

**Year 13 Lever Arch Folder (2)**

**Module 5.1:**
- 5.1.1 - Communication &Homeostasis
- 5.1.2 - Excretion
- 5.1.3 - Neuronal Communication
- 5.1.4 - Hormonal Communication
- 5.1.5 - Plant & Animal Responses
- 5.2.1 - Photosynthesis
- 5.2.2 - Respiration

**Module 6.1:**
- 6.1.1 - Cellular Control
- 6.1.2 - Patterns of Inheritance
- 6.1.3 - Manipulating Genomes
- 6.2.1 - Cloning and Biotechnology
- 6.3.1 - Ecosystems
- 6.3.2 - Populations & Sustainability

## Enzymes Research

Your work for this task will prepare you for our first topic and series of practicals on enzymes; you will present and use your research in class. Based on your knowledge from GCSE and wider reading, give a written account and include graphs and diagrams of:

- An overview of the role and action of enzymes including the lock and key and the induced fit theories. **Challenge** – how are these theories different and which one is more accepted and why?
- What factors can change the rate of enzyme controlled reactions? Try to describe and explain the effect each factor has. This could include, but not be limited to, temperature, pH and substrate concentration.
- Research Information about the action of trypsin, a specific enzyme you will use, and casein, the substrate, which is a protein found in milk.

If you are unsure, use this link (pages 5, 6 and 7) for help. Alternatively scan this QR code

## Enzymes Quiz and Exam Questions

Use this QR code, or follow this link to answer a some questions which relate to your enzymes research. (**N.B.** you can only complete this in one go.)

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## Consolidation of GCSE

Use the information below to guide your revision around key topics from GCSE. **The list below identifies topics that may not have been revised in the same way this year due to the advance information for exams.**

| Topic for Separate Students | Link | Topic for Combined Students | Link |
|---|---|---|---|
| Blood | Link | Monoclonal antibodies | Link |
| Antibiotics and pain killers | Link | Plant disease | Link |
| Development of drugs | Link | Culturing microorganisms | Link |
| Respiration and response to exercise | Link | The brain | Link |
| Nervous system | Link | Control of body temperature | Link |
| The brain | Link | Maintaining water & nitrogen balance | Link |
| Plant Hormones | Link | Plant hormones | Link |
| Variation | Link | DNA structure and protein synthesis | Link |
| Evolution | Link | Cloning | Link |
| Biodiversity & sustainability | Link | Theory of evolution and speciation | Link |
| Biotechnology | Link | Pathogens and the body's defence | Link |
| | | Microscopes | Link |
| | | Nervous system | Link |
| | | Genetic Inheritance | Link |

## Knowledge Quiz

Use this QR code or follow this link to complete the self-marking knowledge quiz (**N.B.** you can only complete this in one go.)

## Wider Reading

Use the links below, or your own resources, to read around biology. This skill is what helps students get top grades!

Link - Is a virus causing multiple sclerosis?

Link - What is Biodiversity and why does it matter?

Link - Matching Drugs to DNA – a new science


Link – TED Talks are great!
Wider reading can be watching! Look at some interesting talks…

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