

O Level Biology (5090)

Scheme of Work : Overview

Recommended Prior Knowledge

Since this syllabus involves a consideration of its topics very largely from first principles, very little prior knowledge is required. The course has been divided into 9 Units, with each Unit having a common thread and following the sequence presented in the syllabus. The order of topics as presented gives a logical order for teaching. Teachers may however wish to alter the suggested sequence, particularly in regions where marked seasonal variations restrict the availability of specimens at certain times of the year.

Recommended Resources

A) Online resources

Online resources directed specifically at the O Level examination are extremely rare. The suggested references are intended to provide support students and teachers following the course. Some resources directly support the suggested teaching activities whilst others provide more general reference, background and extension material. All resources have been checked to ensure their relevance and academic level is suitable for the O Level syllabus. All references are to specific web pages rather than to the general site URL and may be followed directly from the electronic scheme or work or typed directly into the address bar of any web browser. A number of animation and video resources rely on the correct plug-in software being installed on the user's computer (e.g. Quicktime and Flash) – all of which are freely available for download via the internet.

B) Other resources

The text books referenced have been written to accommodate this O Level Biology syllabus (though it is advisable to check text book content with the syllabus before each Unit, since the text may also contain some material relevant to other CIE syllabuses). The three texts have been chosen since they each carry endorsement by CIE for use with the O Level syllabus. References are given at specific stages in each Unit which are then relevant to all subsequent learning objectives within that topic.

Details of the text books:

Jones, G. & Jones, M. (2002). *Biology International Edition for IGCSE and O Level*. Cambridge, Cambridge University Press.

Burton, I. J. (2000). *The Cambridge Revision Guide GCE O Level Biology*. Cambridge, Cambridge University Press.

Jones, M. (2003). *O Level Biology*. Karachi, Oxford University Press.

Teachers may also wish to be aware of a further CIE-endorsed text in the Cambridge University Press 'Professional Development for Teachers' series: Hayward, D. (2003). *Teaching and Assessing Practical Skills in Science*. Cambridge: Cambridge University Press.

CIE produces both a CD and a book of past examination papers (**GCE O Level Examinations Past Papers with Answer Guides Biology Foundation Books** ISBN 81-7596-178-3).

Also a CD of prepared microscope slides is produced by CIE, called **BIOSCOPE**, to which resource references appear in the scheme of work.

Suggested proportion of teaching time to be spent on each Unit

Unit number	Topics	Content (syllabus reference)	% of Teaching Time
Unit 1	Cells and Cell Processes	1. Cell Structure and Organisation 1.1 Plant and animal cells 1.2 Specialised cells, tissues and organs 2. Diffusion and Osmosis 2.1 Diffusion 2.2 Osmosis 2.3 Active transport 3. Enzymes 3.1 Enzyme action 3.2 Effects of temperature and pH	15 %
Unit 2	Plant Nutrition and Transport	4. Plant Nutrition 6. Transport in Flowering Plants	15 %
Unit 3	Animal Nutrition	5. Animal Nutrition	15 %
Unit 4	Human Transport and Respiration	7. Transport in Humans 8. Respiration	11 %
Unit 5	Coordination, Response, Movement and Homeostasis	9. Excretion 10. Homeostasis 11. Coordination and Response 12. Support Movement and Locomotion	11 %

Unit number	Topics	Content (syllabus reference)	% of Teaching Time
Unit 6	Drugs, Microorganisms and Biotechnology	13. The Use and Abuse of Drugs 14. Microorganisms and Biotechnology	8 %
Unit 7	Organisms and the Environment	15. Relationships of Organisms with One Another and with the Environment	8 %
Unit 8	The Continuity of Life: Reproduction	16. Development of Organisms and Continuity of Life	9%
Unit 9	The Continuity of Life: Inheritance and Evolution	17. Inheritance	8 %