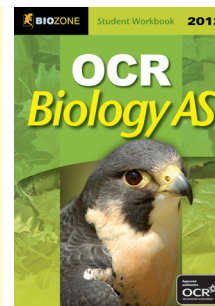


2012: What's New in OCR Biology AS

Thank you for purchasing the *OCR Biology AS Student Workbook*. This edition is endorsed by OCR for use with the OCR Advanced Subsidiary GCE in Biology. BIOZONE is committed to providing an up-to-date resource catering for OCR Biology students and teachers. The current edition of this workbook expands on the material developed in earlier editions. This summary provides a record of changes since the previous edition. A guide to using BIOZONE's workbooks and ancillary products is provided in the Teacher's Guide, which is provided free with every order of workbooks. It provides suggested teaching strategies and the rationale for changes in the this year's edition. We are keen for any constructive criticism and feedback from our users regarding content revisions. Please let us know so that we can improve our products to better meet your needs.

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General changes

OCR Biology AS 2012 builds on the successful features of previous editions. It is endorsed by OCR for use with the OCR Advanced Subsidiary GCE in Biology. This edition also includes a new chapter, *Enzymes*. Material in this chapter was previously located in *Biological Molecules*. Several chapters have been renamed for better alignment with the OCR AS scheme; this should make it easier to locate specific material. As was the case last year, additional material to supplement the core content has been provided on the Teacher Resource CD-ROM (TRC).

☆ New activities in this edition

Page Activity and description

- 11 Accuracy and Precision**
Students often have trouble distinguishing accuracy and precision. This activity provides a clear visual explanation of the difference, and explains the importance of each within a scientific context.
- 40 Calculating Linear Magnification**
A step by step guide to performing a range of basic microscopy calculations. Examples include how to calculate linear magnification, and how to determine to the actual (real) size of an object (1.1.1 d).
- 166 Meselson and Stahl's Experiment**
An account of the Meselson-Stahl experiment that proved the nature of DNA replication.
- 169 Key Terms: Mix and Match**
A new literacy activity has been generated for *Nucleic Acids*, reflecting the updated content within the chapter.
- 214 Drug Resistance in HIV**
This activity describes some causes of drug resistance in general, and the specific mechanism of drug resistance in HIV. Information on the consequences of drug resistance in HIV (including superinfection) and development of an effective HIV vaccine are presented (2.3.3 j).
- 218 The Influenza Threat**
An introduction to the WHO's coordination of the development of new influenza vaccines. A comparison between the seasonal influenza vaccine and a pandemic influenza vaccine is given (2.2.2 n).
- 314 Chloroquine Resistance in Protozoa**
Discusses the development and consequences of chloroquine resistance in *Plasmodium falciparum*. Summarises the link between chloroquine resistance developing and the PfcRT gene, and looks at new research describing how reintroduction of chloroquine treatment in some African countries has proved successful for treating malaria (2.3.3 j).

△ Existing material revised this edition

Activity and account of change

Objectives and Key Concepts in all topics

The objectives and key term lists for each chapter have been revised to reflect the alignment to the OCR Biology AS course and the introduction of new or changed material within each chapter.

15 Recording Results

The results table has been altered so that processed data are no longer presented with raw data. The intention of the activity and the questions remain unchanged.

35 Terms and Notation

Information presented in the expression of units box has been altered to clarify its meaning.

64 Passive Transport Processes

Terminology referring to the hypertonic or hypotonic status of a plant cell has been replaced with terminology appropriate to the OCR course document.

85 The Need for Gas Exchange

This page has been changed so that the properties of gas exchange surfaces are clearly separated from information detailing factors affecting rates of gas exchange.

172 How Enzymes Work

The information explaining how enzymes work has been updated to better demonstrate the process of an enzyme substrate being converted into an enzyme product.

179 A Balanced Diet

Information regarding DRVs have been removed from this activity and replaced with more relevant information looking at the link between obesity and malnutrition. The questions have been altered to reflect these changes.

184 Malnutrition and Obesity

New information documenting obesity levels in England has been added into this activity. The information presenting dietary composition versus cost can now be found in the activity '*A Balanced Diet*'. The questions have been updated to reflect these changes.

189 Selective Breeding in Crop Plants

Greater detail has been provided on how selective breeding is used to increase yields of crop plants. The information provided on selective breeding in bread wheat has been substantially revised and provides information on the modern techniques in use to promote hybrid vigour. The questions have been revised accordingly.

191 Selective Breeding in Animals

The second page of this activity has been revised, and now focuses on how selective breeding techniques have been successfully used to improve desirable qualities in domestic sheep and cattle breeds. The questions have also been updated.

211 Epidemiology of AIDS

The regional HIV statistics have been updated with the most recent data available from the WHO.

217 Antigenic Variability in Pathogens

Additional information has been provided comparing the three *Influenzavirus* strains. In particular, rates of antigenic shift and its influence on human populations is presented.

221 Key Terms: Crossword

This literacy activity has been updated to reflect the new and changed content within the chapter.

247 Smoking and the Cardiovascular System

The cholesterol units on the table on the second page have been changed from $\text{mg } 100 \text{ cm}^3$ to mg dL^{-1} .

259 Features of Taxonomic Groups

Prokaryotae and Eukaryotae have been renamed as superkingdoms to bring them in line with some of the more current taxonomic conventions.

We hope that you enjoy using OCR Biology AS.

We always welcome comments and constructive criticism, and will endeavour to implement suggestions where possible.

The staff at BIOZONE

