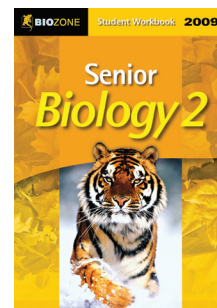


2009: What's New in Senior Biology 2

Thank you for purchasing the 2009 edition of *Senior Biology 2, Student Workbook*. Biozone is committed to providing an up-to-date resource that caters for the requirements of students and teachers of biology at senior level (particularly International Baccalaureate (IB), and AP and Honors Biology courses). After last year's substantial revisions to accommodate changes to the **IB Biology program**, there are only minor alterations to this year's edition. New material has been written for the following chapters; "*Human Evolution*", "*Nerves, Muscles and Movement*", "*Animal Behavior*", and "*Microbes and Biotechnology*". Updated or altered activities occur throughout the workbook and are clearly identified as such. This summary provides a record of changes since the previous edition in order to help teachers pinpoint new material.



Organizational and General Changes

Organizational changes: There have been no organizational changes in this year's edition although some material has shifted from one activity to another without upsetting the flow of information. As is the case every year, many activities have been enhanced and updated, these are specified below.

☆ New activities in this edition

Page Activity and description

- 153 Bipedalism and Nakedness**
A new activity which focuses on reasons why hominins developed an upright bipedal mode of locomotion. The activity also explains reasons for body hair reduction amongst hominins.
- 154 Social Development**
This new activity provides an overview of how the development of the hominin brain aided social development. The impact of natural history intelligence, social intelligence, and technical intelligence on hominin development is discussed.
- 309 Muscle Fatigue**
An overview of how exercise affects muscle metabolism and the factors that contribute to muscle fatigue. Complements the activities *Muscle Physiology and Performance*, and *Effects of Training*.
- 311 Effects of Training**
A introduction to how sustained, regular exercise (training) affects the physiology of the pulmonary, muscular, and cardiovascular systems.
- 321 Learning to Sing**
An introduction of the role of inheritance and learning in song development in birds. Spectrographs are provided for analysis.
- 382 Uses of Microorganisms**
A two page activity discussing the range of biotechnologies in which microorganisms are used. Examples feature the uses of microorganisms within the food industry, as well as medicinal and environmental applications.
- 391 Sewage Treatment**
A summary of the major steps in waste water treatment (mechanical, biological, and chemical processes).
- 392 Biofuels**
This activity covers the nature and importance of alternative energy sources such as gasohol and biogas. The advantages and disadvantages of biofuels and traditional fossil fuels are given.

△ Existing material upgraded this edition

Existing activities that have been revised in order to clarify ideas and improve the questions, format, or general content:

Page Activity and description

- Objectives and Resources in all topics**
Texts and periodicals have been updated. Objectives have been revised as required to accommodate changes.
- 20 Patterns of Disease**
The HIV pandemic information has been updated to

include the most recently available data from UNAIDS.

- 27 Epidemiology of AIDS**
The global HIV statistics have been updated to the most recently available data (2007).
- 37 Prion Disease**
Data for the number of prion related deaths in the UK have been updated to include 2008 figures (year to date).
- 39 Emerging Diseases**
Disease information has been updated with latest available figures.
- 75 Fossil Formation**
The graphic has undergone a minor update, but the nature of the activity and the questions remain unchanged.
- 137 Artificial Selection**
The domestication of *Brassica* graphic has been updated to a more visually engaging formation. The intent of the activity and associated questions remain unchanged.
- 246 The Hormones of Pregnancy**
The graphics on the page have been reorganized. No content has been lost.
- 279 The Physiology of the Kidney**
The second page of this activity has been revised to summarize the activities carried out in the kidney nephron. Students completing the mix and match activity should find this a good test of their understanding. The questions have been revised.
- 359 Adaptations of Xerophytes**
The first part of this activity has been altered to focus on xerophyte adaptations to two environments: the desert and the ocean margin. The purpose of the activity and questions remain unchanged.
- 390 Microbial Production of Chymosin**
Previously named *Using Recombinant Bacteria*, this activity has been renamed to better reflect its content. The activity and questions have not been altered.

Activities removed or shifted

Activity and account of change

The Vertebrate Brain

This activity has moved to the Teacher Resource CD-ROM.

Drugs at Synapses

This is now available on the Teacher Resource CD-ROM and as a web link.

Photosynthesis in C4 Plants

This activity has been removed from the workbook.

Using Recombinant Bacteria

This activity has been renamed *Microbial Production of Chymosin*. No information has been lost.

Gene Therapy/Vectors for Gene Therapy/ Gene Delivery Systems/Production of Human Proteins

These activities have been moved to the "*Aspects of Biotechnology*" section of Senior Biology 1.

We hope that you enjoy using Senior Biology 2. We always welcome comments and constructive criticism, and will endeavor to implement suggestions where possible....The staff at Biozone.

