Soar to New Heights with Campbell Biology!

Campbell Biology, Canadian Edition
Plus MasteringBiology

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Campbell BIOLOGY is the best-selling introductory biology resource in North America. Unparalleled in accuracy, depth of explanation, and art program, the Canadian edition maintains the integrity of the original textbook while integrating material relevant to studying the discipline in this country. Weaving examples of flora, fauna, and species found in Canada alongside global examples, integrating biological issues and data, and showcasing research conducted in Canada makes learning more meaningful.

Available Instructor Resources
- Case Studies
- TestGen and Test Item File
- Lecture PowerPoints
- Clicker Questions
- Image Libraries
- MasteringBiology
- LearningCatalysts

Available Student Resources
- Study on the Go
- A Short Guide to Writing About Biology, Seventh Edition
- Practicing Biology: A Student Workbook, Fourth Edition
- Into the Jungle: Great Adventures in the Search for Evolution
### Brief Contents

#### Unit 1: The Chemistry of Life
1. The Chemical Context of Life
2. Water and Life
3. Carbon and the Molecular Diversity of Life
4. The Structure and Function of Large Biological Molecules

#### Unit 2: The Cell
5. A Tour of the Cell
6. Membrane Structure and Function
7. An Introduction to Metabolism
8. Cellular Respiration and Fermentation
9. Photosynthesis
10. Cell Communication
11. The Cell Cycle

#### Unit 3: Genetics
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13. Mendel and the Gene Idea
14. The Chromosomal Basis of Inheritance
15. The Molecular Basis of Inheritance
16. From Gene to Protein
17. Regulation of Gene Expression
18. Viruses
19. DNA Tools and Biotechnology
20. Genomes and Their Evolution

#### Unit 4: Mechanisms of Evolution
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52. Community Ecology
53. Ecosystems and Restoration Ecology
54. Conservation Biology
Features

- **Key Concepts**: A manageable framework of 3 to 6 Key Concepts organize each chapter.
- **Numbered Concept Heads** keep students focused on main ideas and make it easy for professors to select and assign sections.
- **Concept Check Questions** at the end of each section provide opportunities for self-assessment.
- **Evolution: The Canadian Edition** emphasizes the core theme of evolution throughout. An Evolution Section in every chapter explicitly focuses on the evolutionary aspects of chapter material. Evolutionary mechanisms are covered in-depth in Unit 4. Evolutionary Framework and the diversity of life is explored in Unit 5.
- **Make Connections: The Canadian Edition** helps students make connections across biology topics. Make Connections Figures pull together content from different chapters and provide a visual representation of “big picture” relationships. Make Connections Questions ask students to relate the content of a chapter to what they learned earlier in the course.
- **Art**: Carefully crafted figures help all learners understand complex structures and processes.
- **Multipart figures** highlight hierarchy of information.
- **Exploring figures** help students access information efficiently by integrating text and visuals.
- **Online Tutorial, Homework, and Assessment System**: Designed to emulate the office-hour experience, MasteringBiology® helps students master concepts quickly through self-paced tutorials that feature immediate correct and wrong-answer feedback.
- **Assessment: Campbell Biology and MasteringBiology** work together to help students succeed.
- **Reading Quizzes** motivate students to read the text prior to lecture.
- **End-of-Chapter Text Questions** are assignable in MasteringBiology.
- **Tutorials and Activities** reinforce learning before and after lecture.
- **Interactive Lecture Opportunities: Learning Catalytics** allows students to use their smartphones, tablets, or computers to respond to questions in class.
About the Canadian Authors

Fiona Rawle (Units 1–4; editor Units 1–8) received her Ph.D. from Queen’s University in Kingston, Ontario. She is a teaching-stream faculty member at the University of Toronto at Mississauga, where she teaches Introduction to Evolution and Evolutionary Genetics, Introductory Genetics, and Molecular Basis of Disease. Fiona’s teaching and pedagogical research interests focus on several areas: (1) the development of case studies to immerse students in real-world biological challenges and allow students to connect with material from different perspectives; (2) the development of active learning techniques that can be used in large class settings. Active learning has been shown to increase student comprehension of complex biological topics; and (3) the development of scientific literacy interventions that can be used across the undergraduate biology curriculum. Fiona was the recipient of a 2010 Faculty Award for Teaching Excellence while at Wilfrid Laurier University.

Dion Durnford (Unit 5) is a professor at the University of New Brunswick, in Fredericton. He earned a B.Sc. in Biology from Dalhousie University and a Ph.D. in Botany from the University of British Columbia. His research has focused on the evolution of light-harvesting antenna systems and the role of these proteins in light-harvesting and photo-protection in microalgae. His recent work is examining how microalgae age and their strategies for increasing longevity. Dion was the recipient of the 2002 Faculty of Science Excellence in Teaching award and the 2010 Allan P. Stewart Award for Excellence in Teaching.

Chris Moyes (Unit 7) is a comparative physiologist, focusing on the muscle biochemistry and energetics. He received his Ph.D. in Zoology from the University of British Columbia (1991) and is currently a Professor in the Department of Biology, Queen’s University. He has published more than 100 research papers and contributed to four books. He is co-author of Principles of Animal Physiology, first published in 2006.

Sandra Walde (Unit 8) is a professor of biology and associate dean of science at Dalhousie University. She received her B.Sc. in Biology and Ph.D. in Ecology from the University of Calgary, and then went to the University of California, Santa Barbara, as a post-doctoral fellow. At Dalhousie, she teaches general ecology to first and second year students and population ecology to upper year students. Sandy’s research has focussed on dispersal and ecological interactions in aquatic and terrestrial communities. She feels lucky that her field work has taken her to some beautiful places, including studies of stream invertebrate communities in Alberta and Nova Scotia, and research on native fishes in the lakes of the Patagonian Andes.

Kenneth Wilson (Unit 6) is a professor in the Department of Biology at the University of Saskatchewan. He has a B.Sc. in Biochemistry from the University of Waterloo and a Ph.D. in Plant Sciences from the University of Western Ontario. His research focuses on the perception of environmental stresses in plant cells and the regulation of photosynthesis. However, he has published research papers on topics ranging from the acclimation of plants to ultraviolet light, to the identification of algal species for use as sources of biodiesel. He teaches Introductory Biology, Plant Physiology and Genetics, as well as supervising graduate student research projects. In 2010, he received the Provost’s Award for Outstanding Teaching and the College of Arts and Sciences Teaching Excellence Award from the University of Saskatchewan.