



BIOLOGY

by Miller & Levine

The "Dragonfly" Book

Five Other¹ Reasons why it is an Ideal Choice for Your Students

1) It's the first truly new Biology textbook of the new century.

Despite their copyright dates, every other textbook available today is nothing more than a revision of books that have been around for years. In 1999, however, Prentice Hall gave us a blank sheet of paper and asked us to organize and write an entirely new book, built around the revolutionary advances that are making Biology the dominant science of the 21st century. Compare this book to any of the five editions of our well-known "elephant book," and you will see just how dramatically different this book is. To make its content more manageable, it contains 19% fewer chapters (40 vs. 49), and its organization is completely different.

Ecology has been moved up front (in Unit 2) and, reflecting its importance, expanded to four chapters. Photosynthesis and respiration, two of the most difficult subjects for students, have been expanded so that each has a chapter of its own (Chapters 8 and 9). Our Genetics section (Unit 4) has been written from the ground up with the Human Genome Project in mind, incorporating the latest information on genetic engineering and biotechnology. No other high school textbook mentions stem cells or the controversies surrounding them (p. 253), and no other text provides students with such clear views pro and con on issues such as genetically-modified food (p. 330), antibiotics in animal feed (p. 403), and the privacy of DNA information (p. 354).

2) No other textbook matches the Dragonfly for clarity of illustrations that support student learning.

Take Chapter 9, Respiration, as an example. Because I developed the illustrations with Prentice Hall's art staff as I was writing the text, it was possible to coordinate text and art in a way that makes learning easy for your students. Figure 9-1 (p. 221) is an example of an illustration style found throughout the book. Not only does the step-by-step style of the illustration make clear the size and location of mitochondria within the cell, but also that *both* plants and animals contain mitochondria (students always seem to conclude that only animal cells have mitochondria). Figure 9-2 (p. 222) is an overview of the respiratory pathways, of course, but also take notice of the simplified version of the diagram in the upper left hand corner of the figure. Next, turn to page 227 (Figure 9-6) and you'll see that diagram again, now in the upper right hand corner, showing exactly how the Krebs Cycle fits into the overall pathway. Page 228 (Figure 9-7) does the same thing for electron transport, ensuring that students have a "road map" to these pathways that will help them understand where they are every step of the way. While you're on this page, notice that parts of the diagram of electron transport are labeled "A", "B," and "C." Now look at the text. You'll find the same A, B, C labels there, literally walking students through the diagram, making a perfect fit between text and illustration.

¹ Besides, of course, all those ones involving the iText, the Presentation Pro, and the other great ancillaries that Prentice Hall will tell you about.


3) The Writing Style.

Joe and I are experienced scientists, writers, and teachers. Sit down and actually read a few pages — *anywhere in the book* — and you'll begin to see the writing style that sets this book apart from any other text. Students tell us that they love to read this book, that they feel like the authors are talking directly to them, and that we make difficult topics easy to understand.

We also believe that all good teachers, first and foremost, are storytellers, and that one of the best ways to tell a story is by the use of analogies. We have written so many useful analogies into this book that it would take too long to list them all, but consider just a few that appear in a relatively short section of the text:

- 203: ADP / ATP compared to rechargeable batteries
- 209: The electron carrier NADPH compared to frying pan
- 222: ATP “investment” in glycolysis compared to deposit in savings account.
- 241: Effects of Cell Growth compared to small town too large for its library
- 267: Probability in genetics compared to results of coin flips
- 295: Complimentarity of DNA strands compared to torn dollar bill
- 306: RNA compared to blueprints at job site
- 322: Genetic engineering compared to changing the code for a computer game

4) Support for Learning and Understanding.

Woven throughout the text are features that help students to learn and understand the most important concepts of Biology. Each section, for example, includes a guide for reading that lists the Key Concepts of the section as well as Vocabulary and a Reading Strategy (p. 221 is a good example). Everytime a Key Concept is explained in the text, a distinctive Key Icon appears:  , tipping students off to the fact that this is important information. Checkpoints throughout the text (see bottom of p. 223) help students know if they are ready to move into the next section. Problem-Solving features (p. 224), Quick Labs (p. 231), and Section Assessments (p. 232) reinforce and expand student understanding.

5) Continuing Support from the Authors

Joe Levine and I actually wrote this book, and we stand behind it. That may not sound like much, but most textbooks are actually written by panels of editors and contributing writers. That means that we take personal responsibility for the book, and that we are available anytime to teachers and students who have questions, criticisms, and suggestions. We've even established our own, personal web site to help support the book, which we program and maintain ourselves:

<http://www.millerandlevine.com>

Visit the site, and you'll find unique resources like a Human Genome "Scavenger Hunt" that leads your students on a DNA hunt through human chromosomes, teaching resources for breaking news like anthrax and human cloning, as well as resources on the Issues features out our textbook. There's even an e-mail link to let you get in touch with the authors directly — and we return all of our e-mail! Joe and I are in this for the long term, and we have written this new book to serve you and your students. We'd love to hear from you!

Kenneth R. Miller, Professor of Biology, Brown University, Providence, RI 02912

e-mail: **Kenneth_Miller@Brown.edu** You may leave voice messages for me at the Prentice Hall voice mail site: Call **1-800-435-3499**, then enter my number: **5086**.