

# Biology

## Biology Curriculum Overview

The Biology curriculum is designed to provide students with a detailed understanding of living systems. Emphasis continues to be placed on the skills necessary to examine alternative scientific explanations, actively conduct controlled experiments, analyze and communicate information, and acquire and use scientific literature. The history of biological thought and the evidence that supports it are explored and provide the foundation for investigating biochemical life processes, cellular organization, mechanisms of inheritance, dynamic relationships among organisms, and the change in organisms through time. The importance of scientific research that validates or challenges ideas is emphasized at this level.

There is continued focus on student growth in understanding the nature of science. This scientific view defines the idea that explanations of nature are developed and tested using observation, experimentation, models, evidence, and systematic processes. The nature of science includes the concepts that scientific explanations are based on logical thinking; are subject to rules of evidence; are consistent with observational, inferential, and experimental evidence; are open to rational critique; and are subject to refinement and change with the addition of new scientific evidence. The nature of science includes the concept that science can provide explanations about nature, can predict potential consequences of actions, but cannot be used to answer all questions.

## Adopted Instructional Resources

The honors level textbook for Biology I is *Essential Biology* (2002) by Neil Campbell and Jane Reece. Dr. Campbell is widely known as the author of *Biology*, a textbook for biology majors that is now also co-authored with Dr. Reece. *Essential Biology* is a college textbook specifically designed for non majors. Additional support for both teachers and students is available for this textbook at the [companion web site](#).

Ask your teacher for the necessary access information. The alternate honors level textbook (used only at Monticello High School) for Biology I is *Inquiry into Life* (2008) by Sylvia Mader. Dr. Mader has written a number of Biology textbooks for secondary and higher education. Her textbooks are known for their explicit artwork and for the readability. *Inquiry into Life* was first published in 1976 and is now in its twelfth edition. Additional support for both teachers and students is available for this textbook at the ARIS maintained web site for [Inquiry into Life 12/e](#). Ask your teacher for the necessary access information.

Advanced Biology I students use Prentice Hall *Biology* as their primary text. *Biology* (Dragonfly) is a very popular high school Biology text written by Ken Miller and Joe Levine. Prentice Hall offers both [teacher](#) and [student](#) companion web sites in support of this textbook. In addition, Doctors Miller and Levine maintain their own impressive "[Dragonfly](#)" web site with additional support materials, links, and breaking Biology news.

Glencoe/McGraw-Hill's *Biology: The Dynamics of Life* (2002) is the primary text for the standard level Biology I classes. This is a top Biology textbook used widely throughout the country. Visit the [companion web site](#) for additional resources, links, and information.

Students enrolled in practical level Biology I use *Globe Biology* published by Globe-Fearon. This book is designed to present grade level appropriate content at a lower reading level (minus 2-3 grade levels).

The primary text for Biology II (Advanced Placement) is *Life: The Science of Biology*. The publisher maintains a beautiful and content rich web site that they entitle [LifeWire](#)