



# Course Overview

High School | Honors Biology - Last Updated on April 4, 2025

## DESCRIPTION

### K-12 Content Area | Mission & Philosophy Statement

- Young people are born investigators, with natural curiosities about the physical, biological, and social worlds they experience. Anchoring science learning in real-world phenomena connects curiosities to core conceptual understandings.
- Students actively construct understanding through inquiry, experimentation, and analysis to develop science and engineering practices such as asking questions, planning and carrying out investigations, and constructing explanations.
- Integration of crosscutting concepts such as patterns, cause and effect, and systems thinking promote interdisciplinary understanding and sense-making of the natural world.
- Science learning occurs alongside other disciplines to foster holistic understanding and application of knowledge.

### Course Description

Honors Biology is an in-depth approach to the study of structure and function of living organisms at the molecular and cellular level. Key concepts in biology are explored by fully integrating reading, technology and inquiry based labs and activities that emphasize independent research and analysis. This is a challenging course designed for students who anticipate a science-based career, desire an accelerated, comprehensive program and intend to take advanced courses in science. The course aligns with the Pennsylvania State Keystone Standards in Biology. Biology is a Keystone course where students are required to take the Keystone Biology exam at the end of the course.

## STANDARDS

### Pennsylvania - High School - Keystone Biology

- |             |             |             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| BIO.A.1.1.1 | BIO.A.1.2.1 | BIO.A.1.2.2 | BIO.A.2.1.1 | BIO.A.2.2.1 | BIO.A.2.2.2 | BIO.A.2.2.3 |
| BIO.A.2.3.1 | BIO.A.2.3.2 | BIO.A.3.1.1 | BIO.A.3.2.1 | BIO.A.3.2.2 | BIO.A.4.1.1 | BIO.A.4.1.2 |
| BIO.A.4.1.3 | BIO.A.4.2.1 | BIO.B.1.1.1 | BIO.B.1.1.2 | BIO.B.1.2.1 | BIO.B.1.2.2 | BIO.B.2.1.1 |
| BIO.B.2.1.2 | BIO.B.2.2.1 | BIO.B.2.2.2 | BIO.B.2.3.1 | BIO.B.2.4.1 | BIO.B.3.1.1 | BIO.B.3.1.2 |



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BIO.B.3.1.3

BIO.B.3.2.1

BIO.B.3.3.1

BIO.B.4.1.1

BIO.B.4.1.2

BIO.B.4.2.1

BIO.B.4.2.2

BIO.B.4.2.3

BIO.B.4.2.4

BIO.B.4.2.5

### COURSE OBJECTIVES

Specific objectives for this course are aligned to the Pennsylvania Academic Standards for Science and Technology and Engineering Education, the Pennsylvania Standards for Environment and Ecology, the Pennsylvania Standards for Keystone Biology and the Pennsylvania Core Standards for Reading and Writing in Science and the Technical Subjects.

### ASSESSMENT TYPES

The following assessment types will be used during the course:

- Curriculum-based measures
- Benchmark Assessments
- Formative Assessments
- Summative Assessments
- Performance-Based Assessments

### SUGGESTED METHODS OF INSTRUCTION

A science program demands the use of a variety of instructional strategies to foster scientific thinking. Below is a list of suggested strategies for high-quality instruction:

- Instructional components outlined in the *Framework for Teaching* by Charlotte Danielson
- Hands-on learning
- Posing questions for investigation
- Cooperative learning and collaboration
- Inquiry, engineering, and design



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## RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
<p>Student Text Resource: Campbell, Heyden, and Williamson (2009). <i>Biology: Exploring Life</i>. Prentice Hall</p> <ul style="list-style-type: none"><li>• Student Edition Printed Version</li></ul> <p>Teacher Text Resource: Campbell, Heyden, and Williamson (2009). <i>Biology: Exploring Life</i>. Prentice Hall</p> <ul style="list-style-type: none"><li>• Teacher Edition Printed Version</li></ul>	<ul style="list-style-type: none"><li>• Teacher Created Resources</li><li>• District approved supplemental resources and labs</li></ul>	<ul style="list-style-type: none"><li>• District approved supplemental technology</li><li>• Explore Learning Gizmo Virtual Labs</li></ul>