

Honors Biology Syllabus

Course Description/Goals:

Honors Biology builds on students' prior science knowledge through hands-on exploration and critical thinking as they investigate the living world from the molecular to the ecosystem level. Students engage in 3D science instruction, integrating science and engineering practices, crosscutting concepts, and disciplinary core ideas. Through the 5E instructional model, students ask questions, plan and conduct investigations, and design solutions to authentic biological problems. The honors course emphasizes student-led learning and inquiry, promoting higher-order thinking skills and deeper exploration of topics such as biochemistry, cell structure and function, genetics, evolution, and ecological interactions. Differentiated assessments and extended content provide students with the background knowledge and skills to excel in AP Biology and other advanced science courses.

Course TEKS/Objectives:

The Biology TEKS are organized into key concepts that support deep understanding of living systems: Biological Structures, Functions, and Processes; Mechanisms of Genetics; Biological Evolution; and Interdependence within Environmental Systems. Students explore topics such as biomolecules, cell structure, homeostasis, cellular reproduction, and body system interactions. Genetics instruction includes DNA, protein synthesis, inheritance patterns, and genetic technologies. Students investigate natural selection, evolutionary mechanisms, and evidence for common ancestry. Ecosystem concepts focus on energy flow, matter cycling, biodiversity, and ecological stability. Throughout the course, students apply scientific and engineering practices to model systems, conduct investigations, and analyze patterns and relationships in biological phenomena. Each category contains specific standards (TEKS) that students are expected to master and can be [referenced here](#).

Course Outline:

Semester 1	Semester 2
<ul style="list-style-type: none">-Biomolecules and Cells-Energy in Cells-Cell Growth and Differentiation-Inheritance and Variation of Traits-DNA, RNA, Gene Expression	<ul style="list-style-type: none">-The Challenge of Disease & Viruses-Mechanisms and Evidence of Evolution-Plant Systems-Animal Systems-Ecology-Biotechnology