

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT



AP Biology

Board Approval Date: April 18, 2024	Course Length: 2 Semesters
Grading: A-F	Credits: 5 Credits per Semester
Proposed Grade Level(s): 11, 12	Subject Area: Life Science Elective Area (if applicable):
Prerequisite(s): Successful completion of Biology and Chemistry with a C or better. Recommendations: Completion of Biology and Chemistry with a B or higher, and completion of Integrated Math 2.	Corequisite(s):
CTE Sector/Pathway:	
Intent to Pursue ‘A-G’ College Prep Status: Yes	
A-G Course Identifier: (d) Laboratory Science	
Graduation Requirement: No	
Course Intent: District Course Program (if applicable): AP	
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COURSE DESCRIPTION:

AP Biology is an introductory college-level biology course. Students cultivate their understanding of biology through inquiry-based investigations as they explore the following topics: evolution, cellular processes, energy and communication, genetics, information transfer, ecology, and interactions. This course requires that 25 percent of the instructional time will be spent in hands-on laboratory work, with an emphasis on inquiry-based investigations that provide students with opportunities to apply science practices. This course is equivalent to a two-semester college introductory biology course for biology majors. This course prepares students to pass the College Board AP Biology exam.

DETAILED UNITS OF INSTRUCTION:

Unit Number/Title	Unit Essential Questions	Examples of Formative Assessments	Examples of Summative Assessment
1. Chemistry of Life	What are the structure and chemical properties of water and properties of macromolecules? What is the structure of DNA and RNA?	*AP Classroom Progress Checks *Quizzes *Problem Sets *Worksheets *POGILs *Lab questions *Modeling Dehydration *Synthesis Reactions *Properties of Water Lab *Exploration	*Exam *Lab Reports *Project or other means of assessment
2. Cell Structure and Function	Cell Structure and Function	*AP Classroom Progress Checks *Quizzes *Problem Sets *Worksheets *POGILs *Lab questions	*Exam *Lab Reports *Project or other means of assessment
3. Cellular Energetics	What are the structure and function of enzymes? What is the role of energy in living systems? How do the processes of photosynthesis and cellular respiration function?	*AP Classroom Progress Checks *Quizzes *Problem Sets *Worksheets *POGILs *Peardeck *Lab questions *Enzyme Lab *Yeast Spheres Lab	*Exam *Lab Reports *Project or other means of assessment
4. Cell	What are the mechanisms	*AP Classroom Progress	*Exam

Communication and The Cell Cycle	of cell communication, signal transduction, cellular responses, and feedback mechanisms? What are the events in a cell cycle?	*Checks *Quizzes *Problem Sets *Worksheets *POGILs *Lab questions *Signaling of taste in humans lab *Mitosis Lab	*Lab Reports *Project or other means of assessment
5. Heredity	What is the process and function of meiosis in creating genetic diversity? What are the mechanisms of Mendelian and Non-mendelian Inheritance? What are the factors affecting inheritance and gene expression?	*AP Classroom Progress *Checks *Quizzes *Problem Sets *Worksheets *POGILs *Lab questions *Dihybrid corn analysis lab	*Exam *Lab Reports *Project or other means of assessment
6. Gene Expression and Regulation	What are the roles and functions of DNA and RNA and the mechanisms of gene expression? How does genotype affect phenotype, including the roles of mutations, genetic diversity, natural selection, and genetic engineering and biotechnology?	*Problem Sets *Worksheets *POGILs *Lab questions *pGLO lab	*Exam *Lab Reports *Project or other means of assessment
7. Natural Selection	What are the evidential support and mechanisms for evolution, common ancestry, extinction, and speciation; including environmental and human-caused factors? How can species' ancestry be represented through phylogenetic trees and cladograms? What are models for the origin of life on Earth?	*AP Classroom Progress *Checks *Quizzes *Problem Sets *Worksheets *POGILs *Lab questions *Population Genetics Lab	*Exam *Lab Reports *Project or other means of assessment
8. Ecology	What are the mechanisms by which organisms	*AP Classroom Progress Checks	*Exam *Lab Reports

	respond to environmental changes? How does energy flow within and across ecosystems? What are the factors that affect the growth, density, and success of populations and communities? In what ways do human interactions affect environmental changes?	*Quizzes *Problem Sets *Worksheets *POGILs *Lab questions *Insect Choice Chambers *Behavior Lab	*Project or other means of assessment
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ESSENTIAL STANDARDS:

<https://apcentral.collegeboard.org/media/pdf/ap-biology-course-and-exam-description.pdf>

RELEVANT STANDARDS AND FRAMEWORKS, CONTENT/PROGRAM SPECIFIC STANDARDS:

Link to Common Core Standards (if applicable):

Educational standards describe what students should know and be able to do in each subject in each grade. In California, the State Board of Education decides on the standards for all students, from kindergarten through high school.

<https://www.cde.ca.gov/be/st/ss/documents/finaelaccsstandards.pdf>

Link to Framework (if applicable):

Curriculum frameworks provide guidance for implementing the content standards adopted by the State Board of Education (SBE). Frameworks are developed by the Instructional Quality Commission, formerly known as the Curriculum Development and Supplemental Materials Commission, which also reviews and recommends textbooks and other instructional materials to be adopted by the SBE.

<https://apcentral.collegeboard.org/media/pdf/ap-biology-course-and-exam-description.pdf>

Link to Subject Area Content Standards (if applicable):

Content standards were designed to encourage the highest achievement of every student, by defining the knowledge, concepts, and skills that students should acquire at each grade level.

Link to Program Content Area Standards (if applicable):

Program Content Area Standards apply to programs such as International Baccalaureate, Advanced Placement, Career and Technical Education, etc.

<https://apcentral.collegeboard.org/media/pdf/ap-biology-course-and-exam-description.pdf>

TEXTBOOKS AND RESOURCE MATERIALS:

Textbooks

Board Approved	Pilot Completion Date (If applicable)	Textbook Title	Author(s)	Publisher	Edition	Date
<i>This text will be adopted with the approval of this outline.</i>		<i>Campbell Biology for AP 12th Edition</i>	Lisa A. Urry	Pearson	12th Edition	7/12/2021

Other Resource Materials

NCBI and NIH websites, YouTube, POGIL for AP Biology, online Drosophila Genetics Lab, National Center for Case Study Teaching in Science

Supplemental Materials

Board-approved supplemental materials (Including but not limited to Film Clips, Digital Resources, Supplemental texts, DVDs, and Programs (Pebble Creek, DBQ, etc.):

N/A