

Course at a Glance

Plan

The course at a glance provides a useful visual organization of the AP Biology curricular components, including:

- Sequence of units, along with approximate weighting and suggested pacing. Please note, pacing is based on 45-minute class periods, meeting five days each week for a full academic year
- Progression of topics within each unit
- Spiraling of the big ideas and science practices across units

Teach

SCIENCE PRACTICES

Science practices are spiraled throughout the course:

1 Concept Explanation	4 Representing and Describing Data
2 Visual Representations	5 Statistical Tests and Data Analysis
3 Questions and Methods	6 Argumentation

BIG IDEAS

The big ideas spiral across topics and units:

EVO Evolution	ENE Energetics
IST Information Storage and Transfer	SYI Systems Interactions

Assess

Assign the Personal Progress Checks—either as homework or in class—for each unit. Each Personal Progress Check contains formative multiple-choice and free-response questions. The feedback from the Personal Progress Checks shows students the areas where they need to focus.

UNIT
1

Chemistry of Life

~5-7 Class Periods

8-11% AP Exam Weighting

SYI	2	1.1 Structure of Water and Hydrogen Bonding
ENE	2	1.2 Elements of Life
SYI	2	1.3 Introduction to Biological Macromolecules
SYI	1	1.4 Properties of Biological Macromolecules
SYI	6	1.5 Structure and Function of Biological Macromolecules
IST	2	1.6 Nucleic Acids

UNIT
2

Cell Structure and Function

~11-13 Class Periods

10-13% AP Exam Weighting

SYI	1	2.1 Cell Structure: Subcellular Components
SYI	6	2.2 Cell Structure and Function
ENE	5	2.3 Cell Size
ENE	2	2.4 Plasma Membranes
ENE	2	2.5 Membrane Permeability
ENE	3	2.6 Membrane Transport
ENE	3	2.7 Facilitated Diffusion
ENE	6	2.8 Tonicity and Osmoregulation
ENE	4	2.9 Mechanisms of Transport
ENE	1	2.10 Cell Compartmentalization
ENE	6	2.11 Origins of Cell Compartmentalization
EVO	6	

Personal Progress Check 1

- Multiple-Choice: ~20 questions**
Free-Response: 2 questions
- Conceptual Analysis (partial)
 - Analyze Model or Visual Representation (partial)

Personal Progress Check 2

- Multiple-Choice: ~30 questions**
Free-Response: 2 questions
- Interpreting and Evaluating Experimental Results (partial)
 - Analyze Model or Visual Representation (partial)

NOTE: Partial versions of the free-response questions are provided to prepare students for more complex, full questions that they will encounter on the AP Exam.

**UNIT
3**

Cellular Energetics

~14-17 Class Periods

12-16% AP Exam Weighting

ENE	3.1 Enzyme Structure
1	
ENE	3.2 Enzyme Catalysis
3	
ENE	3.3 Environmental Impacts on Enzyme Function
6	
ENE	3.4 Cellular Energy
6	
ENE	3.5 Photosynthesis
6	
ENE	3.6 Cellular Respiration
4	
SYI	3.7 Fitness
6	

Personal Progress Check 3

Multiple-Choice: ~20 questions

Free-Response: 2 questions

- Interpreting and Evaluating Experimental Results with Graphing (partial)
- Scientific Investigation (partial)

**UNIT
4**

Cell Communication and Cell Cycle

~9-11 Class Periods

10-15% AP Exam Weighting

IST	4.1 Cell Communication
1	
IST	4.2 Introduction to Signal Transduction
1	
IST	4.3 Signal Transduction
6	
IST	4.4 Changes in Signal Transduction Pathways
6	
ENE	4.5 Feedback
6	
IST	4.6 Cell Cycle
4	
5	
IST	4.7 Regulation of Cell Cycle
6	

Personal Progress Check 4

Multiple-Choice: ~25 questions

Free-Response: 2 questions

- Interpreting and Evaluating Experimental Results (partial)
- Analyze Data

**UNIT
5**

Heredity

~9-11 Class Periods

8-11% AP Exam Weighting

IST	5.1 Meiosis
1	
IST	5.2 Meiosis and Genetic Diversity
3	
EVO	5.3 Mendelian Genetics
IST	
6	
5	
IST	5.4 Non-Mendelian Genetics
5	
SYI	5.5 Environmental Effects on Phenotype
1	
SYI	5.6 Chromosomal Inheritance
6	

Personal Progress Check 5

Multiple-Choice: ~25 questions

Free-Response: 2 questions

- Interpreting and Evaluating Experimental Results with Graphing
- Conceptual Analysis

NOTE: Partial versions of the free-response questions are provided to prepare students for more complex, full questions that they will encounter on the AP Exam.

UNIT 6

Gene Expression and Regulation

~18-21

Class Periods

12-16%

AP Exam Weighting

IST 1	6.1 DNA and RNA Structure
IST 2	6.2 Replication
IST 2	6.3 Transcription and RNA Processing
IST 6 2	6.4 Translation
IST 6	6.5 Regulation of Gene Expression
IST 6	6.6 Gene Expression and Cell Specialization
IST 2 3	6.7 Mutations
IST 6	6.8 Biotechnology

Personal Progress Check 6

Multiple-Choice: ~25 questions

Free-Response: 2 questions

- Interpreting and Evaluating Experimental Results
- Analyze Model or Visual Representation

UNIT 7

Natural Selection

~20-23

Class Periods

13-20%

AP Exam Weighting

EVO 2	7.1 Introduction to Natural Selection
EVO 1	7.2 Natural Selection
EVO 4	7.3 Artificial Selection
EVO 3	7.4 Population Genetics
EVO 5 1	7.5 Hardy-Weinberg Equilibrium
EVO 4	7.6 Evidence of Evolution
EVO 6	7.7 Common Ancestry
EVO 3	7.8 Continuing Evolution
EVO 2	7.9 Phylogeny
EVO 6 2	7.10 Speciation
EVO 3	7.11 Extinction
SYI 6	7.12 Variations in Populations
SYI 3	7.13 Origin of Life on Earth

Personal Progress Check 7

Multiple-Choice: ~40 questions

Free-Response: 2 questions

- Interpreting and Evaluating Experimental Results with Graphing
- Analyze Data

UNIT 8

Ecology

~18-21

Class Periods

10-15%

AP Exam Weighting

ENE IST 3	8.1 Responses to the Environment
ENE 6	8.2 Energy Flow Through Ecosystems
SYI 4	8.3 Population Ecology
SYI 5	8.4 Effect of Density of Populations
ENE 5	8.5 Community Ecology
SYI 6	8.6 Biodiversity
EVO SYI 5	8.7 Disruptions to Ecosystems

Personal Progress Check 8

Multiple-Choice: ~20 questions

Free-Response: 2 questions

- Interpreting and Evaluating Experimental Results with Graphing
- Scientific Investigation