Danville Area School District
Course Overview and Scope and Sequence

Course Title: Advanced Placement Biology
Content Area: Science
Grade Level: 10-12
Date Developed: 8/10/2023

COURSE OVERVIEW: 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.

Science Practices

1. Explain biological concepts, processes, and models presented in written format.
2. Analyze visual representations of biological concepts and processes.
3. Determine scientific questions and methods.
4. Represent and describe data.
5. Perform statistical tests and mathematical calculations to analyze and interpret data.
6. Develop and justify scientific arguments using evidence.

ANCHOR STANDARDS:
BIG IDEA 1: EVOLUTION (EVO) The process of evolution drives the diversity and unity of life.
BIG IDEA 2: ENERGETICS (ENE) Biological systems use energy and molecular building blocks to grow, reproduce, and maintain dynamic homeostasis.
BIG IDEA 3: INFORMATION STORAGE AND TRANSMISSION (IST) Living systems store, retrieve, transmit, and respond to information essential to life processes.
BIG IDEA 4: SYSTEMS INTERACTIONS (SYI) Biological systems interact, and these systems and their interactions exhibit complex properties.

KEY COURSE TEXT AND MATERIALS: College Board Materials; Miller Levine AP Biology
KEY ASSESSMENTS: Diagnostic: Keystone Biology Exam Formative: Unit Quizzes and Exams Summative: AP Biology Exam

SCOPE AND SEQUENCE					
Unit	PRIORITY STANDARDS	SUPPORTING STANDARDS	ASSESSMENT	MATERIALS	TIMEFRAME
Unit 1: Chemistry of Life	SYI-1 ENE-1 IST-1	2.A 1.A 6.E.b	Personal Progress Check; Quizzes, Unit Exam; Lab	Text; College Board Materials; Teacher-Created Supplemental Materials	5-7 Class Periods
Unit 2: Cell Structure and Function	SYI-1 ENE-1 ENE-2 EVO-1	1.A 6.A 2.D.a 5.A.d 2.A 3.D 5.D.b 3.E.b 6.E.b 4.A 1.B 6.E.a 6.B	Personal Progress Check; Quizzes, Unit Exam; Lab	Text; College Board Materials; Teacher-Created Supplemental Materials	11-13 Class Periods

Unit 3: Cellular Energetics	ENE-1 SYI-3	1.B 3.C.b 3.C.c 6.E.c 6.C 6.B 4.A 6.C	Personal Progress Check; Quizzes, Unit Exam; Lab	Text; College Board Materials; Teacher-Created Supplemental Materials	14-17 Class Periods
Unit 4: Cell Communication and Cell Cycle	IST-3 ENE-3 IST-1	1.B 1.A 6.C 6.E.b 4.B.b 5.A.e 6.E.a	Personal Progress Check; Quizzes, Unit Exam; Lab	Text; College Board Materials; Teacher-Created Supplemental Materials	9-11 Class Periods
Unit 5: Hereditary	IST-1 EVO-2 SYI-3	1.B 3.A 5.C 6.E.c 5.A.b 5.C 1.C 6.E.b	Personal Progress Check; Quizzes, Unit Exam; Lab	Text; College Board Materials; Teacher-Created Supplemental Materials	9-11 Class Periods
Unit 6: Gene Expression and Regulation	IST-1 IST-2 IST-4	1.C 2.B.b 2.D.b 6.E.a 6.A 6.B 2.C 3.D 6.D	Personal Progress Check; Quizzes, Unit Exam; Lab	Text; College Board Materials; Teacher-Created Supplemental Materials	18-21 Class Periods

Unit 7: Natural Selection	EVO-1 EVO-2 EVO-3 SYI-3	3.5.a 2.D.c 6.E.a 2.B.a 3.B 6.C	Personal Progress Check; Quizzes, Unit Exam; Lab	Text; College Board Materials; Teacher-Created Supplemental Materials	20-23 Class Periods
Unit 8: Ecology	ENE-3 IST-5 ENE-1 SYI-1 ENE-4 SYI-3 EVO-1 SYI-2	3.C.a 6.D 4.A 5.A.c 5.B 6.E.c 5.D.a 5.D.b	Personal Progress Check; Quizzes, Unit Exam; Lab	Text; College Board Materials; Teacher-Created Supplemental Materials	18-21 Class Periods