

**WARREN COUNTY SCHOOL DISTRICT**

PLANNED INSTRUCTION

**COURSE DESCRIPTION**

**Course Title:** AP Biology  
**Course Number:** 00316  
**Course Prerequisites:** Biology College Preparatory, Honors Biology, and Chemistry College Preparatory

**Course Description:** Advanced Placement Biology is offered to students who have completed Biology College Preparatory, Advanced Biology, and Chemistry College Preparatory. The College Board’s Advanced Placement (AP) program provides capable and motivated students with an opportunity to pursue college level biological studies with still in secondary school. This course is a college level laboratory program that enables students to receive college credit by passing a test with appropriate scores in May of the school year. This course is not taught to Pennsylvania standards, it is taught to college board standards.  
<https://apcentral.collegeboard.org/courses/ap-biology/course>

**Suggested Grade Level:** Grades 11-12

**Length of Course:** Two Semesters

**Units of Credit:** 1

**PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:**

CSPG 32 Biology

To find the CSPG information, go to <https://www.education.pa.gov/Educators/Certification/Staffing%20Guidelines/Pages/default.aspx>

**Certification verified by the WCSD Human Resources Department:** Yes No

**WCSD STUDENT DATA SYSTEM INFORMATION**

**Course Level:** AP (1) GPA +10%

**Mark Types:** Check all that apply.

F – Final Average MP – Marking Period EXM – Final Exam

**GPA Type:**  GPAEL-GPA Elementary  GPAML-GPA for Middle Level  NHS-National Honor Society

UGPA-Non-Weighted Grade Point Average  GPA-Weighted Grade Point Average

**State Course Code:** 03056

To find the State Course Code, go to <https://nces.ed.gov/forum/sced.asp>, download the Excel file for SCED, click on SCED 6.0 tab, and chose the correct code that corresponds with the course.

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**TEXTBOOKS AND SUPPLEMENTAL MATERIALS**

**Board Approved Textbooks, Software, and Materials:**

**Title:** Campbell Biology AP Edition 11th Edition + AP Test Prep  
**Publisher:** Pearson  
**ISBN #:** 10:0-13-443369-6  
**Copyright Date:** 2018  
**WCSD Board Approval Date:** 5/14/2018

**Supplemental Materials:** [Click or tap here to enter text.](#)

**Curriculum Document**

**WCSD Board Approval:**

**Date Finalized:** 2/28/2018  
**Date Approved:** 5/14/2018  
**Implementation Year:** 2018-2019

**SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS**

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

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## PLANNED INSTRUCTION

**SCOPE AND SEQUENCE OF CONTENT, CONCEPTS, AND SKILLS**

<b>Performance Indicator</b>	<b>PA Core Standard and/or Eligible Content</b>	<b>Month Taught and Assessed for Mastery</b>
Describe how atoms combine together to form molecules.	Click or tap here to enter text.	Choose an item. September
Explain how the properties of water make life on Earth possible.	Click or tap here to enter text.	Choose an item. September
Explain how the laws of thermodynamics relate to the biochemical processes that provide energy to living systems.	Click or tap here to enter text.	Choose an item. September
Describe the role of carbon in the molecular diversity of life.	Click or tap here to enter text.	Choose an item. September
Identify the chemical properties of macromolecules.	Click or tap here to enter text.	Choose an item. September
Describe Stanley Miller's experiment and explain how organic molecules may have synthesized abiotically on the early Earth.	Click or tap here to enter text.	Choose an item. September
Describe several properties of prokaryotic and eukaryotic cells.	Click or tap here to enter text.	October Choose an item.
Explain how the cell membrane helps to maintain homeostasis.	Click or tap here to enter text.	October Choose an item.
Model the cell cycle.	Click or tap here to enter text.	October Choose an item.
Identify the regulatory factors that control the cell cycle.	Click or tap here to enter text.	October Choose an item.
Use representations or models to describe features of a cell signaling pathway.	Click or tap here to enter text.	October Choose an item.
Describe the role of ATP in cells.	Click or tap here to enter text.	November Choose an item.

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Explain how the energy produced in the light reaction is coupled to the Calvin cycle, thus producing carbohydrates.	Click or tap here to enter text.	<b>November</b> Choose an item.
Explain how some plants have adapted to hot, dry climates.	Click or tap here to enter text.	<b>November</b> Choose an item.
Explain the major steps of cellular respiration in terms of reactants, products and the energy they generate.	Click or tap here to enter text.	<b>November</b> Choose an item.
Compare and contrast Mendelian and non-Mendelian patterns of inheritance.	Click or tap here to enter text.	<b>December</b> Choose an item.
Construct and analyze normal and abnormal karyotypes and explain how a chromosomal mutation could lead to change in a population over time.	Click or tap here to enter text.	<b>December</b> Choose an item.
Compare and contrast the processes of mitosis and meiosis.	Click or tap here to enter text.	<b>January</b> Choose an item.
Explain the structure of DNA.	Click or tap here to enter text.	<b>February</b> Choose an item.
Model the process of protein synthesis.	Click or tap here to enter text.	<b>February</b> Choose an item.
Contrast prokaryotic and eukaryotic gene regulation.	Click or tap here to enter text.	<b>February</b> Choose an item.
Explain how viruses transmit genetic information.	Click or tap here to enter text.	<b>March</b> Choose an item.
Predict how a change in a specific DNA sequence can result in changes in gene expression.	Click or tap here to enter text.	<b>March</b> Choose an item.
Justify the claim that humans can manipulate heritable information by identifying at least two commonly used technologies.	Click or tap here to enter text.	<b>March</b> Choose an item.
Explain how humans influence genetic variation.	Click or tap here to enter text.	<b>April</b> Choose an item.
Explain Charles Darwin's contribution to science.	Click or tap here to enter text.	<b>April</b> Choose an item.

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Evaluate data-based evidence that describes evolutionary changes in the genetic makeup of a population over time.	Click or tap here to enter text.	April Choose an item.
Apply mathematical methods to data from a real or simulated population to predict what will happen to the population in the future.	Click or tap here to enter text.	April Choose an item.
Describe specific examples of conserved core biological processes and features shared by all domains or within one domain of life, and how these shared conserved core processes and features support the concept of common ancestry for all organisms.	Click or tap here to enter text.	April Choose an item.

**ASSESSMENTS**

**PSSA Academic Standards, Assessment Anchors, and Eligible Content:** The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

**Formative Assessments:** The teacher will utilize a variety of assessment methods to conduct in-process evaluations of student learning.

**Effective formative assessments for this course include:** Click or tap here to enter text.

**Summative Assessments:** The teacher will utilize a variety of assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

**Effective summative assessments for this course include:** Click or tap here to enter text.