

**CP Biology Syllabus 2017-18**

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**Texts and Other Materials:**

*Miller & Levine Biology*

Notebook or binder for class notes and class work, book cover, writing utensils, colored pencils, and 1 box of tissues or 1 roll of paper towels (to be turned in the first week of school with student's name written on the item)

**Course Description:**

Biology is a high school level course, which satisfies the Ohio Core science graduation requirements. It is a course with inquiry-based laboratory experiences that engage students in asking valid scientific questions and gathering and analyzing information.

This course investigates the composition, diversity, complexity and interconnectedness of life on Earth. Fundamental concepts of heredity and evolution provide a framework through inquiry-based instruction to explore the living world, the physical environment and the interactions within and between them.

Students engage in investigations to understand and explain the behavior of living things in a variety of scenarios that incorporate scientific reasoning, analysis, communication skills and real-world applications.

**Course Content:**

**Heredity**

- Cellular genetics
- Structure and function of DNA in cells
- Genetic mechanisms and inheritance
- Mutations
- Modern genetics

**Evolution**

- Mechanisms of Evolution
  - Natural selection
  - Mutation
  - Genetic drift
  - Gene flow (immigration, emigration)
  - Sexual selection
  - History of life on Earth
- Diversity of Life
  - Speciation and biological classification based on molecular evidence
  - Variation of organisms within a species due to population genetics and gene frequency

**Diversity and Interdependence of Life**

- Classification systems are frameworks created by scientists for describing the vast diversity of organisms indicating the degree of relatedness between organisms.
- Ecosystems
- Homeostasis
- Carrying capacity
- Equilibrium and disequilibrium

**Cells**

- Cell structure and function
- Structure, function and interrelatedness of cell organelles
- Eukaryotic cells and prokaryotic cells
- Cellular processes
- Characteristics of life regulated by cellular processes
- Photosynthesis, chemosynthesis, cellular respiration
- Cell division and differentiation

## Course Outcomes:

After completing the high school science curriculum, students will be able to:

- Identify questions and concepts that guide scientific investigations;
- Design and conduct scientific investigations;
- Use technology and mathematics to improve investigations and communications;
- Formulate and revise explanations and models using logic and evidence (critical thinking);
- Recognize and analyze explanations and models; and
- Communicate and support a scientific argument.

## Course Calendar:

There will typically be a test consisting of multiple choice, matching, document/graphical analysis, and essay after every chapter. There may also be one reflection paper assigned during each quarter over various topics. Labs and lab activities will be done in class, the purpose of which will be to demonstrate or investigate material being studied in class. There will be a comprehensive semester and final exam. There will also be regular reading and other assignments as well as quizzes deriving from the text and class discussion. All assignments will be posted in class and on Progress Book. Projects, such as development of cell models and/or DNA models, will be assigned. Instructions for projects will be posted online and distributed to students when appropriate. Study may also include dissection of fetal pigs following the investigation of structure and function of organ systems in living organisms.

## Course Strategies:

To be successful in this class, students need to attend class daily bringing all required materials and having completed the reading assignments and/or homework. Students will succeed if they take good notes, ask questions, and display necessary effort in learning. Biology students are successful because they read the text when assigned, complete their work on time, prepare well in advance for tests/quizzes, and, most of all, put forth effort every day in class by paying attention and being actively involved in class work. ***When absent, it is the student's responsibility to make up work. By using their iPad to search on Progress Book, students can find what was done in class and what work is due upon their return to school.***

***Excessive absences are detrimental to the learning process.*** Students miss explanations and reinforcement of material covered in class that they do not receive by simply making up their homework. Regular attendance is very important to academic success.

## Class Expectations:

1. All students are required to bring all materials, including a **notebook/binder, text, their iPad, and writing utensils** every class period.
  - Students **will NOT** be allowed to go to lockers to get materials they did not bring to class. This includes work that is due at the beginning of class.
2. Assignments will be due at the beginning of class. All work should be turned in to the designated turn-in tray after the tardy bell rings. **Students are allowed 1 late assignment without consequence each quarter. In general, late work is not accepted.**
  - Absence – work due the day the student is absent is due the day he/she returns to school. Students need to check Progress Book for assignments and work done in class when they are absent.
    - All work will be posted on Progress Book. It is the student's responsibility to find out what was done in class, what work is due, and when it is due.
    - iPads should go home with the student each day. If they are absent, they can still keep up with assignments at home and nothing should be late when they return to school.
    - Students should meet with the teacher the day they return to be sure they receive any instructional materials they may have missed during their absence.
3. There will be a **semester exam** and **end-of-year exam** as well as several quizzes and smaller tests throughout the course. Students will be informed of a test a few days prior to its administration. Pop Quizzes are rare but possible. Quizzes will usually be administered after a lesson, and a test will normally be given after a chapter.
  - Absence – if a student is absent on the day of a test or quiz, they will be expected to make up the test or quiz the day they return to school; study hall, before or after school works best.
    - Students must make it a habit to see all teachers to make arrangements to take make-up tests/quizzes the day they return to school and, if necessary, prepare to stay after school to complete this work.
    - If more than one day is missed, other arrangements will be made, but the student must see the teacher the day they return to school to make these arrangements.
4. Students will be respectful of all school property and the property of other students at all times.
  - If a student damages school property, they will be financially responsible for its replacement and may have disciplinary consequences as well.
  - If a student damages another student's property, they will be financially responsible for its replacement and there will be disciplinary consequences.
    - Disciplinary measures taken could include demerits, detention, and/or removal from class.

5. Students will be silent during announcements, when others are speaking, and during prayer at the beginning of each class.
- Talking during announcements, when others are speaking, or during prayer will result in disciplinary action that could include loss of participation points, demerits, detentions, and/or removal from class.
6. Students will actively participate in all class work without being disruptive and will follow lab safety rules when participating in labs.
- Non-participation will result in loss of participation points and/or demerits.
  - **Sleeping in class will result in detention and/or removal from class.**
  - Breaching lab safety rules or lab instructions will result in expulsion from the lab and a 0 grade for that lab.
    - If this occurs more than once, the student will not be allowed to participate in class labs and will have to make up work as assigned.
  - Students are expected to remain attentive in class. **Working on other assignments / preparing for other classes will not be tolerated during Biology class.**
    - Loss of participation points, demerits, detentions, loss of work (for the other class) may result.

### **Grade Components:**

I will be using the Lima Central Catholic grading scale (found in the student handbook) to determine grades and grades will be weighted as follows:

Tests / projects = 50%

Quizzes / labs = 30%

Assignments = 15%

Pop quizzes / participation / in class work / completion = 5%

**Extra credit will NOT be given to “boost” grades. Extra / optional assignments may be given, but will be offered to the entire class and graded as any other assignment. There is no guarantee that a completed extra assignment will receive an “A”.**

Please let me know if you are struggling in the class...before material is tested. Use study halls to get help when you struggle. National Honor Society students are generally available on Wednesdays after school for tutoring. I will also be available before and after school and by appointment. Please feel free to approach me if/when you have a problem. My door is always open and I urge that you come and see me with any concerns. I am looking forward to a great year. Let's work together to make your year in Biology an enjoyable experience!!

--Ms. Schenk