

# Welcome to AP Biology!

The AP Biology course is designed by the College Board to represent a two semester college level biology course for biology majors. The course requires students to have successfully completed a high school level biology and chemistry class prior to this course. Students are expected to study a minimum of one hour outside of class for every hour of class time. (The College Board recommends 2-3 hours.) Parkland's AP biology course is heavily weighted in the first semester to help students complete the content before the AP Exam in May. Students will meet for a double period 5 days of the 6 day cycle in the first semester. Classes will then meet every other day in the second semester.

Course materials & resources:

- Information regarding the AP courses, requirements, and exams are available at [www.collegeboard.com](http://www.collegeboard.com)
- Test preparation books are recommended but not required. They may be purchased at any local bookstore as well as online. (Ex. Princeton Review, Kaplan, Barrow...etc)
- Students will also receive an online access to the text's supplementary material for labs, tutorials, simulations, and quizzes.

Summer Assignment:

The summer assignment is designed to 1) help review essential chemistry concepts, and 2) explore basic ecological biomes in preparation for the in-depth study of these topics which will be covered throughout the year. **All assignments are due on the first day of class, and materials will be assessed within the first 2 weeks of school.**

- All students should pick up the course textbook as instructed at the end of the previous school year. (*Biology*, Campbell 5<sup>th</sup> ed), along with an assignment packet. Should you lose this assignment packet, you may access another copy on the Parkland High School website. The web address is <http://psdweb.parklandsd.org/phsweb>. Click on "Links" and then on "AP/Honors Summer Assignments." Find AP Biology in the list and click on it. It should take approximately 10 hours to complete the assignment.
- Questions over the summer may be addressed to Mrs. Gannon or Mrs. Kowalski via email at:
  - [gannonm@parklandsd.org](mailto:gannonm@parklandsd.org)
  - [kowalskil@parklandsd.org](mailto:kowalskil@parklandsd.org)

We look forward to an exciting year of AP biology. Hope you enjoy your summer, and feel free to email either of us with questions that may arise.

*Mrs. Gannon & Mrs. Kowalski*

## Part I: Introduction to AP Biology

Reading Assignment: Chapter 1- pages 1-19

### Assignment 1: Outline Chapter (25 points)

Objectives:

- Identify hierarchy of life
- Explain Evolution's role as a key biological theme
- Describe "science as a process" and explain how science is used to help discover, understand, and explain biological concepts

Timeframe Part I: 1 hour

## Part II: Organic Chemistry Preparation

Reading Assignment: Read Chapters 2-5; pages 20-80

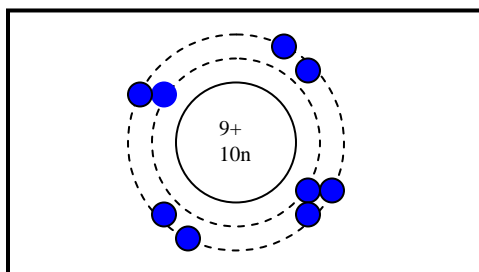
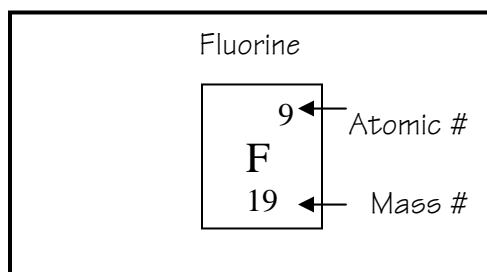
### Assignment 2: Flashcards of Essential Elements (50 points)

- (Front) Name of Element and periodic block information
- (Back) Draw the electron dot diagram for each of the following elements on separate note cards. Include the correct number of protons, neutrons, and electrons in the correct location

- Hydrogen
- Carbon
- Nitrogen
- Oxygen
- Sodium

- Nitrogen
- Phosphorous
- Sulfur
- Chlorine
- Potassium

Example: Fluorine



### Assignment 3: Fundamental Functional Groups Flashcards

(50 points)

- (Front) Name of functional group
- (Back) Draw the chemical formula for each of the following functional groups or monomers.
  - a. Hydroxyl
  - b. Alcohol
  - c. Amino group
  - d. Carboxyl
  - e. Carbonyl
  - f. Aldehyde
  - g. Ketone
  - h. Phosphate
  - i. Methyl
  - j. Thiol
  - k. Glucose (alpha and beta)
  - l. Fructose
  - m. Saturated fatty acid
  - n. Unsaturated fatty acid
  - o. Amino acid
  - p. Nucleotide

Timeframe Part II: 4 hours

### Part III: Examining Ecology

Reading Assignment: Chapter 50- pages 1024-1049

### Assignment 4: Biomes: Ecosystems from A → Z (150 points)

- You will create 2 charts to investigate the characteristics of the following aquatic and terrestrial biomes.

chart 1: Understanding Aquatic Biomes

- freshwater
- marine

Students should compare the two types of aquatic biomes and describe the following characteristics of each:

- 1) chemical differences (ex. salinity)
- 2) physical characteristics
- 3) vertical stratification
- 4) examples of specific biomes (min 2 for each)

chart 2: Comparing Terrestrial Biomes

- Tropical Forest
- Savannah
- Desert
- Chaparral
- Temperate Grasslands
- Temperate Deciduous Forest
- Coniferous Forest
- Tundra

Students should describe the following abiotic and biotic characteristics for each biome listed above in a separate column of chart 2.

- 1) Climate
  - Mean monthly temperature
  - Average yearly precipitation
  - Sunlight
- 2) Geographic region on Earth
- 3) Composition of terrain/soil
- 4) Predominant vegetation
- 5) Examples of organisms

**Assignment 5: Food Web** (25 points)

- Select a biome
- Create a sample food web including ten organisms that would be present in this biome. (see page 1133 for an example)
- Identify each organism's trophic level.
- Be sure to include at least one of each: producer, decomposer, and primary, secondary, and tertiary consumers.

Timeframe Part III: 5 hours

The total timeframe for the summer assignment is 10 hours. You can use both your book as well as internet resources. All work should have your full name on it, and is due the first day of class.

See you in September!