

June 14, 2018

Advanced Placement Biology 2018-2019
Mrs. Jennifer Fazzini, AP Biology

Your name is included in the list for Advanced Placement Biology for next year.

I want to commend you for your intention to challenge yourself next year by enrolling in the advanced placement course.

It has been my experience that students who take advanced placement courses at High School East do so for a combination of reasons:

1. They receive credit on their report card and transcripts for AP subjects.
2. They receive experience in performing college level work.
3. They have a good chance of receiving advanced standing in that subject when they go to college.

By enrolling in our Advanced Placement Biology course next year, you will be in a class of only a handful of students. Comparable introductory biology courses in college range from 35 up to a few hundred per class. In a small class you will have considerably more opportunity for closer supervision and help. By taking this course, you will be able to develop skills that will help you with other subjects as well.

Biology is full of complex concepts and ideas, and requires college-level reading and writing. The course though in depth, moves at a rapid pace. Self-motivation and a strong work ethic are mandatory to succeed.

As you know, science and technology have evolved and grown so quickly in the past sixty years that the volume to be included in an introductory course has grown substantially. Because of the amount of time allotted to you and your teacher, it would be impossible for you to cover the material simply during class time. With that in mind, I am enclosing your summer assignment and textbook. Plan to take a test on the assignment (Ecology) the second week of school. This will allow you and your teacher to spend class time working on more rigorous material and performing labs.

I look forward to working with you next year in Advanced Placement Biology. It is a lot of work but a phenomenal experience.

First day of school you must bring:

- Large 3 ring binder (notebook)
- Composition Notebook for Lab
- Pencil
- Pen
- Colored Pencils (6 colors)
- Completed summer assignments
- A positive attitude and enthusiasm!

**AP Biology 2018-2019
Summer Assignment**

****Textbooks are available in Guidance during the summer break****

Chapter 53:

Read and outline pages: **1145-1152**

Big Idea to focus on: 4.A.5: Communities are composed of populations of organisms that interact in complex ways.

Topics to focus on: Population ecology, Population dynamics, Population density, Types of dispersion, Changes in population, Density- dependent factors affecting population size, Density- independent factors affecting population size

Figures to focus on: 53-1, 53-2, 53-3, 53-6

Read and outline pages: **1153-1155**

Big Idea to focus on: 3.D.3: Signal transduction pathways link signal reception with cellular response.

Topics to focus on: Life history traits (K-selected vs. R-selected), Survivorship curves

Figures to focus on: 53-8

Chapter 54:

Read and outline pages: **1164-1181**

Big Ideas to focus on: 4.A.5: Communities are composed of populations of organisms that interact in complex ways.

4.B.3: Interactions between and within populations influence patterns of species distribution and abundance.

2.D.1: All biological systems from cells and organisms to populations, communities and ecosystems are affected by complex biotic and abiotic interactions involving exchange of matter and free energy.

2.E.3: Timing and coordination of behavior are regulated by various mechanisms and are important in natural selection.

4.C.4: The diversity of species within an ecosystem may influence the stability of the ecosystem.

Topics to focus on: Community structure and ecology, Niches, Competition, Predation, Coevolution, Defense adaptations, Symbiosis (mutualism, parasitism, commensalism), Keystone species, Dominant species, Ecosystem regulation, Community biodiversity

Figures to focus on: 54-1, 54-3, 54-4, 54-5, 54-7, 54-10, 54-11, 54-12, 54-16, 54-19

Chapter 55:

Read and outline pages: 1187-1198

Big Ideas to focus on: 4.A.6: Interactions among living systems and with their environment result in the movement of matter and energy.

4.B.4: Distribution of local and global ecosystems changes over time.

2.D.1: All biological systems from cells and organisms to populations, communities and ecosystems are affected by complex biotic and abiotic interactions involving exchange of matter and free energy.

2.A.3: Organisms must exchange matter with the environment to grow, reproduce and maintain organization.

Topics to focus on: Energy flow (food webs, food chains), Ecological pyramids, Productivity, Cycles of Matter (nitrogen, phosphorus, hydrologic)

Figures to focus on: 55-1, 55-2, 55-6, 55-7, 55-8, 55-10, 55-11

Chapter 56:

Read and outline pages: 1228-1229

Big Ideas to focus on: 4.B.4: Distribution of local and global ecosystems changes over time.

4.C.2: Environmental factors influence the expression of the genotype in an organism.

Topics to focus on: Biogeography, Realms

Figures to focus on: 56-25

Complete the chart containing the distinctive characteristics of the various biomes in the attached packet.

Chapter 57

Read and outline pages: 1233-1242

Big Ideas to focus on: 4.A.5: Communities are composed of populations of organisms that interact in complex ways.

4.A.6: Interactions among living systems and with their environment result in the movement of matter and energy.

4.C.3: The level of variation in a population affects population dynamics.

2.D.3: Biological systems are affected by disruptions to their dynamic homeostasis.

2.D.4: Plants and animals have a variety of chemical defenses against infections that affect dynamic homeostasis.

Topics to focus on: Sustainability, Biodiversity, Factors contributing to declining biodiversity, Conservation biology

Figures to focus on: 57-2, 57-4, 57-6

Read and outline pages: 1244-1250

Big Ideas to focus on: 4.B.4: Distribution of local and global ecosystems changes over time.

4.C.2: Environmental factors influence the expression of the genotype in an organism.

Topics to focus on: Deforestation, Climate change, Greenhouse effect

Figures to focus on: 57-17

Recommendation: Do this assignment the last month of summer break so that the information is fresh in your minds. We will briefly review this unit along with ecology labs during the first 2 weeks of school. Be prepared for the unit test to be the second week of school.

Due: First day of school

Keep in mind that this assignment, like all others, is a reflection of you.

Therefore, do your best.

Name _____

Terrestrial Biomes Summary Chart

BIOME	CLIMATE	SOIL/H ₂ O	PLANTS	ANIMALS	HUMAN IMPACT
Tropical Rain Forest					
Desert					
Savanna					
Chaparral					
Temperate Grassland					
Taiga/ Coniferous Forest/ Boreal Forest					
Temperate Deciduous Forest					
Tundra					

Aquatic Biomes Summary Chart

	ENVIRONMENT	GEOLOGIC FEATURES	PHOTOSYNTHETIC ORGANISMS	HETEROTROPHS	HUMAN IMPACT
Freshwater: Ponds, Lakes, Wetlands					
Freshwater: Streams, Rivers					
Estuaries					
Marine: Intertidal Zone					
Marine: Pelagic Zone					
Marine: Coral Reefs					
Marine: Benthic Zone					