

Dear AP Biology Student and Parents,

We want to welcome you to the AP Biology class and take this time to inform you about the AP Biology course given in our school.

This Advanced Placement Biology course is taught on the level of a first year college biology class. The students use a college textbook and laboratory manual. Our textbook also comes with a review book that will help students. There are also other appropriate review manuals that can be purchased. We will introduce these to the students during the first week of class in September. A cumulative exam, which is administered by the Educational Testing Service, will be given during May, 2011. The grade on the exam is used by many universities to grant college credit in biology.

This course offers a great opportunity in a field of study that is fascinating and challenging. There is a tremendous volume of material that must be covered in a relatively short period of time. This syllabus will demand more time and energy than any other science class you have previously taken. Students and parents should not be surprised by the class requirements that are in excess of what students expect from a typical high school class. These added requirements will include: a summer work assignment, assignments over school vacations, nightly reading from the textbook.

From our observations, the greatest challenge for a student in AP biology is the need to do consistent work over the entire year. Many bright and highly motivated students sometimes let their effort slide from time to time. They make up for this slip with a big rush right before a test. This strategy will not work in this class and will threaten even the brightest student's opportunity to excel in AP biology.

Success in this program will depend on a student's motivation, consistent daily preparation, reading ability, writing skills and organizational skills. These skills, at the present time, may not be at their peak, but the student's willingness to develop and apply them throughout the year is essential for a wonderful learning experience.

We look forward to helping you, working with you, and sharing this year with you.

Please sign below to indicate that you and your parents have read all the material in this packet.

Sincerely, Laureen Fuller and David Fewell

Student signature \_\_\_\_\_

Parent signature \_\_\_\_\_

## SUMMER ASSIGNMENT 2010- AP BIOLOGY

In order to keep up with the huge volume of material we must cover in the AP Biology, we must have you complete the following summer assignment. Using internet resources and other resources, answer the following questions. *This assignment is due (typed) on the first day of class.*

### 5 KINGDOM SURVEY

#### 1. Domains of prokaryotes. Archaeobacteria and Eubacteria.

A. Describe the characteristics and distinguishing features of each Domain (what makes scientists classify them differently). Explain which one is considered more ancient and why.

B. Define autotroph and heterotroph. Give some examples of autotrophic and heterotrophic bacteria. Include a definition for and an example of a chemoautotroph.

#### 2. Domain Eukaryotes

A. Kingdom Protista: Explain the differences between the algae-like, protozoan-like, and fungus-like protists.

1. What are some common features of the protista clades Rhizopoda, Sporozoa, and Ciliophora?

2. What are some common features of the protista clades Myxomycota, Acrasiomycota, & Oomycota?

3. What are some common features of the protista clades Chlorophyta, Phaeophyta, Rhodophyta?

#### B. Kingdom Fungi:

1. Explain the importance of hyphae and mycelia for fungi.

2. How do fungi obtain nutrition (contrast with animals' mode of nutrition.)

3. Explain the ecological importance of fungi in most ecosystems.

4. Describe the ecological importance of lichens and mycorrhizae.

#### C. Plant Kingdom.

1. Describe the main differences between tracheophytes and bryophytes.

2. Explain the evidence that algae are the evolutionary ancestors of plants.

Include structural and biochemical similarities between the two groups.

3. List some adaptations that plants possess that enabled them to move onto land.

#### D. Animal Kingdom:

1. For each of the following animal phyla, list some distinguishing characteristics: Porifera, Cnidaria, Platyhelminthes, Nematoda, Mollusca, Annelida, Arthropoda, Echinodermata, & Chordata.