Syllabus

Course Title: Pre-AP Biology **Room #:** 28 **Instructor:** Mr. Seth Little **Phone Extension:** 753/slittle@reynolds.k12.pa.us

Course Description: The Pre-AP Biology course is designed to prepare students for the AP Biology course. This course will differ from usual high school biology courses in the depth, breadth and the rate at which material is covered in the course. The course will also differ in the amount of time and effort students will put into the class. To get a feel, students will use the same textbook that is used in the AP Biology class. Students will not have a lab section, but will perform some of the AP labs during class time to get a feel for the requirements of a college biology laboratory. The Pre-AP course aims to provide students with the knowledge, skills and critical thinking ability to deal with the pace and amount of material that is to be covered in an AP biology course. The goal of the course is to provide students with an understanding of biology and provide skills necessary to complete a college biology or AP biology course.

Objectives:

- 1. To understand the concepts presented that will prepare students for AP Biology.
- 2. To acquire laboratory skills needed in the study of biology.
- 3. To promote interest in the study of the biological sciences and appreciation for the place of science in modern society.
- 4. To develop critical thinking and analytical skills applied to the science of biology.
- 5. To prepare students for the Advanced Placement Biology Examination.

Major Themes

The following themes will be addressed as we cover each unit throughout the course. It is important that you always consider these themes when examining the material because these themes hold together the big ideas of the AP Biology curriculum. Since they are emphasized in the AP Biology curriculum, we will emphasize them in Pre-AP Biology.

- Science as a Process
- Evolution
- Energy Transfer
- Continuity and Change
- Relationship of Structure to Function
- Regulation
- Interdependence in Nature

Grading Policies

Your class grade will be based on the following work you turn in:

Objective Tests (40% of grade) – Throughout the unit, students will take tests. Each test will be the in the format of the AP exam. The exam will be shorter however because of time constraints (16-20 MC, 2 short answer and 1 essay). It will be scored in the same fashion as the AP exam (50% of the score is MC and 50% of the score is the essay).

Weekly Quizzes (20%)–Each week students will be given a small quiz that they will have about 10 minutes to complete. The quiz will be on the previous week's material. It will usually survey the previous week's material and questions will vary in format.

Labs (Labs and Projects combine to make up 20%) – There will be labs conducted in this course. Some of the labs will appear on the AP exam so the laboratory portion of the course is as important as the lecture portion of the course. Each lab will require a formal lab report be written up and turned in to be graded.

Projects – Students will complete class projects. The projects will pertain to some portion of the course that is covered in at the current time.

Homework Assignments (10%) – During each chapter, students will be required to complete worksheets and textbook assignments either for homework points or a completion grade.

Academic Honesty – You will be expected to perform all assigned work without cheating, lying, stealing, or receiving assistance from any source not appropriately authorized or attributed. (Univ. of Georgia)

Citizenship (10%) – You will be expected to show up for class on time, be prepared and act appropriately in the classroom. Because of this there will be citizenship points to maintain consistent classroom procedures and behaviors. 30 points will be the maximum citizenship points for a grade. Points will be deducted accordingly for any deviation from expectations.

Quarter Grade Determination

The quarterly grade will be determined by adding up the total points scored on tests, labs, lab reports, projects, quizzes, and homework and then by dividing by the total possible points for those assignments.

Pre-AP Biology

Class Lecture Schedule (subject to change)

Introduction

• Chapter 1 Biology: Exploring Life-This chapter is an introduction to various themes and aspects of biology

Unit #1: the Life of the Cell

- Chapter 2: The Chemical Basis of Life-This chapter examines basics in chemistry that are necessary to understanding aspects of biology emphasizing the chemistry of water.
- Chapter 3: The Molecules of Cells-This chapter studies the molecules that make up all the structures of the body and the cell.
- Chapter 4: A Tour of the Cell-This chapter examines the structure and function of all the parts of a living cell.
- Chapter 5: The Working Cell-This chapter studies the structure and function of the cell membrane, cellular thermodynamics and enzyme catalysis.
- Chapter 6: How Cells Harvest Energy-This chapter examines the dynamics of cellular respiration.
- Chapter 7: Photosynthesis-This chapter investigates how plant convert sunlight into chemical energy.

Unit #2: Cellular Reproduction and Genetics

- Chapter 8: The Cellular Basis of Reproduction and Inheritance-This chapter explores the process of cell division in somatic and sex cells.
- Chapter 9: Patterns of Inheritance-This chapter investigates different patterns of inheritance in genetics.
- Chapter 10: Molecular Biology of the Gene-This chapter studies molecular biology including DNA replication, protein synthesis and bacterial and viral genetics.
- Chapter 11: How Genes are Controlled-This chapter explores how genes are controlled including the molecular genetics of cancer.

Unit #3: Concepts of Evolution

- Chapter 13: How Populations Evolve-This chapter covers basic concepts of evolution by looking at Darwin's voyage, evidence for evolution and concepts of microevolution.
- Chapter 14: The Origin of Species-This chapter examines how concepts of microevolution create new species.

Unit #4: Ecology

- Chapter 35: Behavioral Adaptations to the Environment-This chapter covers the dynamics of behavior in different types of organisms and how those behaviors enhance survival.
- Chapter 36: Population Ecology-This chapter studies interactions and dynamics of organisms in the same species living in the same area.
- Chapter 37: Communities and Ecosystems-This chapter looks at interactions in communities and the cycling of resources in an ecosystem.
- Chapter 34: The Biosphere-This chapter examines the various biomes that make up the living earth.
- Chapter 38: Conservation Biology-This chapter studies how biodiversity is being lost and methods employed to save it.