

AP BIOLOGY

Monday AM

APSI Goals

- Update on the AP Biology Curriculum
- Developing and performing more inquiry based instruction by transitioning from traditional labs to inquiry labs
- Integrating mathematics in inquiry labs
- Share best practices (activities, worksheets, strategies, lab, technology, etc.,)
- Analyze student responses from the Exam plus Notes from an AP Reader
- Peruse, interact and exchange current resources and activities
- Examining technology based teaching strategies

The Course

College Board Equity Policy

Prerequisites for the Course

Overarching Premise

Overview of the Course Description

- Big Ideas, Enduring Understandings, Essential Knowledge, Learning Objectives
- The Science Practices
- Instructional Design using the components of the curriculum framework
- Course Audit: curricular requirements
- Examining the College Board Site

Using Mathematics in Biology

- Bio math PPT
- Getting used to statistics in laboratory Investigations
- Practice Math exam and answers
- Using math in designing inquiry investigations

The Inquiry Laboratory

- Practicing math based lab investigations
- Inquiry transition- LAB11 and other Animal Behavior Labs

Assessing the Lab Experience

Monday PM

Artificial Selection

- Darwin and Artificial Selection PPT, Trichomes PPT
- AP Lab #1 Artificial Selection
- Artificial Selection Lab-An Alternative Approach
- From the Lab work to exam questions
- Lab: Acid Base Indicators from Plant Pigments
- Lab: Acids, Bases and Cells
- Exam Questions

Tuesday AM

Animal Behavior

- Choice Chamber Lab, PPT,
- AP Biology Lab Choice Chambers PPT
- AP Lab # 12- Fruit Fly Behavior, Isopods

Exam: format and required tasks

- From the Lab work to exam questions
- Lab: Acid Base Indicators from Plant Pigments
- Lab: Acids, Bases and Cells
- Exam Questions

Calculations, exam format

Correcting AP Exams

- Draw connections between the content, science practice(s) and the learning objective(s).
- Draw conclusions regarding a curriculum aimed at preparing students for the required tasks.
- Become familiar with and practice applying scoring guidelines for free-response items
- Notes from an AP Reader

Tuesday PM

Osmosis/diffusion

- Osmosis/Diffusion Lab # 4: Diffusion and Osmosis plus other labs.
- Using mathematics to understand Osmosis/diffusion0Water Potential
- Examining extensions for student research Inquiry

Mathematical Modeling

- Hardy-Weinberg PPT
- Hardy-Weinberg Lab #4: Investigation 2
- PopGen and Netlog Models

Wednesday AM

Computer Lab- Blast Analysis

- Blast Analysis PPT
- Lab #3: Comparing DNA Sequences to Understand Evolutionary Relationships with BLAST
- Analysis: Molecular Epidemiology Study
- Cladograms-Phylogenies/Cladograms PPT
- The DNA Sequencer- a gift
- Designing online Lab Investigations: The Florida Dentist, GULO, others

Wednesday PM

Genetics and Genomics

- Intro to electrophoresis
- AP Lab # 8 Bacterial Transformation
- AP Lab:# 9 Biotechnology: Restriction Enzymes
- Microarrays plus Lab and DNA Barcodes, Genome Editing PPTs

Thursday AM

Teaching Strategies

National Center for Case Studies in Science

Profiling with STRS and forensics

Set up Lab #6: Cellular Respiration

Thursday PM

Immunology

- Immunology PPT
- Antigen-Antibody Testing- Labs
- Antigen- Antibody PPT
- Serology +labs

Friday AM

Collect data on Lab #6: Cellular Respiration

AP Resources

- Paper Labs

Ecology lab resources

- Life Tables
- Effect of Temp on Goldfish Operculum
- Duckweed Studies
- Cemetery Lab.
- Forensics +labs

Friday PM

Research for AP Classes

Ethics in Research

Clean up

Evaluations