

Falmouth High School

Curriculum Guide

Science Department



Course Number 4101, 4102, 4119
Freshman Biology, Freshman Biology CP, Biology Workshop
Developed by Rupert Gordon, Claudio Palhais, Cory Dubuque, Heather Goodwin
2007-2008

Course Rationale

The purpose of this course is to develop in students the habits of mind to become lifelong learners who are readers, writers, problem solvers, information seekers and gatherers, and presenters as described in the FHS skills rubrics. Students will use the scientific method to investigate the living world at the molecular, cellular, organismal, and ecological levels.

Course Description

4101 Freshman Biology (Year) Grade 9 4 Credits

4102 Freshman Biology CP (Year) Grade 9 4 Credits

4119 Biology Workshop (Semester) Grades 10, 11, 12 2 Credits

This course includes extensive investigation and comprehension of cellular structure and functions, principles of biochemistry and genetics, mechanics of evolution, diversity of life forms on earth, principles of ecology, human anatomy, and the scientific process. These areas will prepare students to meet the requirements of the Massachusetts Curriculum Frameworks. The schedule provides added time to complete laboratory activities.

Student Audience

Grades 9, 10 (Lab Science); credit level - CP; Inclusion classroom

Freshman Biology, Freshman Biology CP and Biology Workshop Core Text

Biology by Miller and Levine, © 2006 by Pearson Prentice Hall, Boston, Massachusetts

Interactive textbook – CD-ROM; *Biology by Miller and Levine, © 2006 by Pearson Prentice Hall, Boston, Massachusetts*

Website - www.phschool.com

Teacher's Resources – Reading and Study Workbooks; Laboratory Manuals; Computer Test Banks

Content Specific Essential Questions

Essential Questions

- How do chemicals interact to perform the functions of life?
Life is based on a number of chemical interactions between elements which make up organic compounds.
- How do different organelles work within the cell to meet the requirements of life?
Cells are complex structures with specific functions that demonstrate the properties of and are the basic unit of life.
- How is genetic information transmitted from one generation to the next?
Traits are carried on genes inherited between generations. Changes in DNA lead to genetic variation.
- How do the systems of living organisms interact to remain in constant balance?
Complex life is made up of different systems that interact and rely upon each other.

Content Specific Essential Questions

cont.

- How and why do populations change due to environmental pressures?
Life is constantly changing based on pressure from the environment which leads to adaptations of populations over many generations.
- How do organisms interact with each other and with their environment?
Organisms shape their environment and the environment shapes organisms.

Student Learning Outcomes

Weighting of Grades

Teachers in the science department will weight tests and quizzes as 60% of the quarterly grade. In general 2 or 3 quizzes will be considered the equivalent of one test. Labs, including formal lab reports, major projects, and homework will be weighted 40% of the quarterly grade. Alternatively, teachers may weigh labs, projects, and homework for 30% of the quarterly grade and include a 10% participation grade. The participation grade will consist of objective measurements such as notebook check, class work, and ungraded homework assignments checked for completion. Tardiness and absences will not be included in the participation grade. Midterm and final exams will be weighted 10% each 20% if only a final exam is given.

Averaging of Grades

Teachers in the science department will use the mean of test/quiz scores and the mean of scores on other student work during the quarter. These means will be weighted 60/40 or 60/30/10 in determining the quarterly grade. Major projects and lab reports will be counted more heavily than routine homework assignments.

Retaking Tests and Quizzes

Students may not retake tests except at the discretion of the teacher as specified in the classroom management plan. Only students in good academic standing, that is those who are consistently turning in class assignments, will be allowed to retake a test. The grade on the retake test will replace the first grade.

Late Work

Students are expected to turn in all assignments on the assigned date. Any late assignments may be accepted for reduced credit as outlined in the individual teacher's classroom management plan for up to 2 class days following the due date. No work will be accepted after the assessment on that particular unit. Students may make up tests until the end of the quarter. However, if a student does not make up the test by the end of the quarter, he or she will receive a grade of zero on that test. Students should recognize that the longer they wait to make up a test, the lower their score is likely to be.

Use of Zeros

Any assignment for which no work is turned in will receive a grade of zero. Long term or multiple step projects will receive partial credit based on the amount and quality of the work turned in.