

Living Environment Honors

## **Living Environment H - 4210**

Full year - 1 credit

Grades 9,10,11,12

Prerequisite: Honors Policy Applies

### **Overview**

This course is designed for the science-oriented, high achieving students who may be considering a career in science. The NYS Living Environment Syllabus forms the foundation of the course however Honors curriculum covers concepts in greater depth and detail. The course involves advanced readings in order to strengthen reading and comprehension across the curriculum and to better prepare students for future AP courses and the SAT exam. Areas of concentration include: research skills, scientific inquiry, biochemical aspects of modern biology, cells, genetics, evolution, ecology, human anatomy and physiology. This class will prepare students for the NYS Regents exam which will be taken in June at the conclusion of the school year.

### **Instructional philosophy**

Living Environment Honors course is built on the knowledge, understanding, and ability to do science that students have acquired in their earlier grades. Instruction is focused on understanding important relationships, processes, mechanisms, and applications of concepts. At the same time, the course requires memorization of many new concepts and terms. These will be introduced using lectures, demonstrations, large and small group discussions, text readings and lab activities. The assessments will test students' ability to explain, analyze, and interpret biological processes and phenomena as well as their knowledge of specific facts. Laboratory experiences will provide the opportunity for students to develop the scientific inquiry techniques, the use of information systems, the interconnectedness of content and skills and the problem-solving approaches.

### **Knowledge and Skills Objectives**

Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.

Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and

recognize the historical development of ideas in science.

[Living Environment Honors - click here for more Detailed Syllabus](#)  
**Living Environment Honors - Units of Study**

***1. Scientific Inquiry and Laboratory Skills***

Microscopes

Lab Safety

Scientific method

Interpreting Graphs

***2. The Life of the Cell***

The Chemical Basis of Life

The Molecules of Cells

A Tour of the Cell

The Working Cell

Cellular Respiration: How Cells Harvest Chemical Energy

Photosynthesis: Using Light to Make Food

***3. Reproduction & Genetics***

The Cellular Basis of Reproduction & Inheritance

Patterns of Inheritance

Molecular Biology of the Gene

DNA Technology & Genomics

***4. Concepts of Evolution***

How Populations Evolve

Tracing Evolutionary History

The Origin and Evolution of Microbial Life

The Evolution of Animal Diversity

Human Evolution

## **5. Ecology**

The Earth's Diverse Environments

Behavioral Adaptations to the Environment

Population Dynamics

Communities and Ecosystems

Conservation Biology

## **6. Human Impact on the Environment**

Positive effects of humans on the environment

Negative effects of human on the environment

## **7. Animals: Form & Function**

Animal Structure & Function

Nutrition & Digestion

Gas Exchange

Circulation

The Immune System

Nervous Systems

Control of the Internal Environment

Chemical Regulation

## Reproduction & Development

### **8. NYS Required Labs**

Diffusion/Osmosis  
Biodiversity  
Making Connections  
Beaks of Finches

### **Major Resources for Living Environment Honors**

Primary Text:

*Title: "Biology: Concepts & Connections"*

*Authors: Neil A. Campbell, Jane B. Reece, Martha R. Taylor, and Eric J.*

*Simon Publisher: Pearson Prentice Hall*

Review Book:

*Title: "The Living Environment"*

*Authors: John Bartsch, Mary P. Colvard*

*Publisher: Pearson Prentice Hall*

On-Line Text:

<http://www.phschool.com/science/>

On-Line Practice and Review:

[www.castlelearning.com](http://www.castlelearning.com)