

**Biology**  
**Danvers High School**  
**2013 - 2014**  
**C Block**  
**9:26AM - 10:19AM**

**INSTRUCTOR:**

Eric Oxford

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**COURSE DESCRIPTION:**

This is an inquiry-based course, designed to investigate the diversity, complexity, and interconnectedness of life on earth.

**OBJECTIVES:**

Students will be able to:

- A. Make scientifically informed decisions related to their health and to the health of the planet.
- B. Analyze relationships between life on earth and environmental disruptions
- C. Create inferences and develop theories about ecological habitats, particularly as they pertain to their own lives.
- D. Differentiate between different classifications of species.
- E. Conduct lab-based experiments and (dis)prove hypotheses based on their findings.

Based on the Massachusetts Frameworks, Learning standards for Biology at the high school level fall under the following six subtopics: *The Chemistry of Life; Cell Biology; Genetics; Anatomy and Physiology; Evolution and Biodiversity; and Ecology.*

**TEXTBOOKS & READING:**

Students will use the textbook *Biology*, which will be found inside of the classroom. All other reading material will be provided to the student, and/or can be found on the DRIVE Website, on the Biology class page.

**COURSE STRUCTURE:**

This course consists of a combination of lecture, discussion, and laboratory-based learning. It is essential that students maintain a consistency of learning and work completion in the classroom, as each concept builds upon the previous one. Students will also spend time working in groups and evaluating each other's lab reports.

**ASSESSMENTS:**

The course is based on total number of points at the end of each quarter. Each assessment will hold its own weight, and will look similar to the following:

Daily Assignments/Worksheets:	15 points
Laboratory Participation:	50 points
Laboratory Reports:	100 points
Quiz (in-school or take-home)	100 points
Test	200 points
Projects	200+ points

**ATTENDANCE:**

Attendance is required. In the event of illness or other legitimate reason for excusal, please provide a doctor's note or other form of written notice. Students who miss a class will be responsible for completing the missed assignment on their own time, or during make-up classes, which will be provided at the discretion of the teacher.

**SCHEDULE of TOPICS and ASSIGNMENTS\***

<b>1st Nine Weeks</b>	<b>Content</b>
Biology and You	Introduction to the Scientific Method Characteristics of Life Biology in Your World
The Chemistry of Life	Nature of Matter: Atoms and Elements Water and Solutions Chemistry of Cells Energy and Chemical Reactions
Cell Structure	Cells and Microscopes Cell Theory Prokaryote and Eukaryotic Cell Organelles
Cells and Their Environment	Passive Transport Active Transport

<b>2nd Nine Weeks</b>	<b>Content</b>
Chromosomes and Cell Reproduction	Cell Division Chromosomes Cell Cycle Mitosis and Cytokinesis
Meiosis and Sexual Reproduction	Meiosis Sexual and Asexual Reproduction
Anatomy & Physiology	Skeletal System Muscular System Circulatory System Respiratory System Nervous System Digestive System Reproductive System
Mendel and Heredity	Origins of Genetics Mendel's Theory Punnett Squares Heredity Genetic Disorders
DNA: The Genetic Material	Transformation Structure of DNA Replication of DNA
Gene Technology	Gene Therapy Gene Manipulation Cloning
<b>3rd Nine Weeks</b>	<b>Content</b>
How Proteins are Made	Decoding DNA: Transcription and Translation
The Theory of Evolution	Darwin and Natural Selection Evidence of Evolution Examples of Natural Selection
Classification and Organisms	Taxonomy Classification
Populations	Population Dynamics Modeling Population Growth How Populations Evolve

Ecosystems	Interactions of Organisms and Their Environment Energy Flow in Ecosystems Cycling of Materials in Ecosystems
<b>4th Nine Weeks</b>	<b>Content</b>
Biological Communities	Symbiotic Species How Competition Shapes Communities Biomes Aquatic Communities
Photosynthesis and Cellular Respiration	Energy in Living Systems: ATP Photosynthesis Cellular Respiration
Introduction to Animals	Body Symmetry Body Systems
Animal Behavior	Evolution of Behavior Genetically Influenced Behavior Learned Behavior Types of Behavior
Mollusk and Annelids	Characteristics of Mollusk Characteristics of Annelids
Arthropods	Characteristics of Arthropods Characteristics of Arachnids Characteristics of Crustaceans
Kingdoms of Life	Archaeobacteria Eubacteria Protista Fungi Plantae Animalia
The Environment and Pollutants	Environmental Toxins Chemical Run-Off Dumping Grounds

*\*The teacher reserves the right to change the syllabus, based on pace of student learning and time constraints.*

## **GRADING:**

Your final grade will be determined by attendance, participation and quality of written work. The policy is as follows:

### Grading Criteria

A+/A	Exemplary academic work
A-	Very good quality academic work with minor areas of weakness identified
B+	Satisfactory academic work with one or two important weaknesses identified
B/B-	Satisfactory academic work, a few major weaknesses identified
C+/C	Acceptable work, some major weaknesses identified
C-/D+	Minimally acceptable work, a majority of significant weaknesses identified
F	Unacceptable; Does not meet criteria sufficient for high school quality

## **PLAGIARISM:**

Plagiarism occurs when a sequence of ideas is transferred from a source to a paper without the process of digestion, integration and reorganization in the writer's mind, and without acknowledgment in the paper.

### Plagiarism is committed if students submit as their own work:

1. Part or all of a written or spoken assignment copied from another person's manuscript or notes;
2. Part or all of an assignment copied or paraphrased from a source such as a book, magazine or website;
3. The sequence of ideas, arrangement of material or pattern of thought of someone else, even though they are expressed in one's own words.

### A student is an accomplice of plagiarism and equally guilty if:

1. One's paper, in outline or finished form, is allowed to be copied and submitted as the work of another;
2. One prepares a written assignment for another student;
3. One keeps or contributes to a file of papers or speeches with the clear intent that these papers or speeches be copied and submitted as the work of anyone other than the author.

**Academic Dishonesty:** Academic dishonesty is regarded as a major violation of both the academic and ethical principles of this community and may result in a failing grade or suspension. Academic dishonesty includes plagiarism, cheating (whether in or out of the classroom), and abuse or misuse of educational (books, magazines, websites) materials when such abuse or misuse can be related to course requirements.

## **EXPECTED CLASSROOM BEHAVIOR:**

Classroom expectations include:

1. Participating in class activities
2. Respecting the diversity of cultures, opinions, viewpoints in the classroom
3. Listening to fellow students, professors, and lecturers with respect
4. Arriving on time, prepared for class
5. Attending for the duration of class