

High School Syllabus

Department: Science

Course #: 50513H

Course Title: Honors Biology

DESCRIPTION OF COURSE: Students will have an opportunity to study the following topics in depth: cell structure and function, the chemistry of and functioning of biological molecules, the activities that occur within ecosystems, methods of maintaining homeostasis, and the role of DNA in genetics and in evolution, classification, human genetics and evolution. Scientific method will be employed to solve problems both in the laboratory and in everyday life. Assessments will include formal lab reports, research papers, projects, worksheets, quizzes and tests. In addition, students will complete the following required summer reading prior to the beginning of the course: *Lives of a Cell* by Lewis Thomas (ISBN-10: 0140047433). The book has an independent reading assignment that goes with it and will be formally assessed. The assignment is due the first day of class. See the Summer Reading section of the high school website for assignment and rubric details.

REQUIRED TOPICS OF STUDY	SUGGESTED INSTRUCTIONAL TIME	STANDARDS/ ELIGIBLE CONTENT	
Scientific Method	2 weeks	BIO.A.1	CC.3.5.9-10.A, CC.3.5.9-10.B, CC.3.5.9-10.C, CC.3.5.9-10.G, CC.3.6.9-10.B
Characteristics of Life and Classification of Living Things	3 weeks	BIO.A.1.1	CC.3.5.9-10.E, CC.3.6.9-10.C
Basic Chemistry	2 weeks	BIO.A.2.1	CC.3.5.9-10.A, CC.3.5.9-10.B, CC.3.5.9-10.C, CC.3.5.9-10.D, CC.3.5.9-10.G, CC.3.6.9-10.B
Organic Chemistry	4 weeks	BIO.A.2.2, BIO.A.2.3	CC.3.5.9-10.C, CC.3.5.9-10.D, CC.3.5.9-10.G, CC.3.6.9-10.E, CC.3.6.9-10.B
Cell Structure and Function	4 weeks	BIO.A.1.2, BIO.A.4.1, BIO.A.4.2	CC.3.5.9-10.C, CC.3.5.9-10.D, CC.3.6.9-10.E, CC.3.6.9-10.B
Cell Energy / Energy Flow	5 weeks	BIO.A.2.3, BIO.A.3.1	CC.3.5.9-10.D, CC.3.5.9-10.E, CC.3.6.9-10.C
Cell Reproduction	3 weeks	BIO.B.1.1	CC.3.5.9-10.E, CC.3.6.9-10.H
Protein Synthesis	2 weeks	BIO.B.2.1, BIO.B.2.2	CC.3.5.9-10.D, CC.3.6.9-10.C
Genetics	6 weeks	BIO.B.1.2, BIO.B.2.1, BIO.B.2.2, BIO.B.2.3, BIO.B.2.4	CC.3.5.9-10.D, CC.3.5.9-10.G, CC.3.5.9-10.H, CC.3.6.9-10.B
Evolution	2 weeks	BIO.B.3.1, BIO.B.3.2, BIO.B.3.3	CC.3.5.9-10.G, CC.3.6.9-10.E, CC.3.6.9-10.B

REQUIRED TOPICS OF STUDY	SUGGESTED INSTRUCTIONAL TIME	STANDARDS/ ELIGIBLE CONTENT	
Ecology	<i>4 weeks</i>	BIO.A.1	CC.3.5.9-10.A, CC.3.5.9-10.B, CC.3.5.9-10.C, CC.3.5.9-10.G, CC.3.6.9-10.B

RESOURCES: Biology, Sylvia Mader, McGraw Hill, 2010; ISBN: 978-0-07-891694-6

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