







Cornwall-Lebanon School District Curriculum Overview

Advanced Topics in Biology Grades 11 and 12

 length of time in weeks	Concepts & Competencies	Common Assessments	Academic Standards (PA Core if applicable)
Unit 1 	<u>Introduction to Biotechnology</u> Students will work with new advances in biotechnology and develop an understanding of polymerase chain reaction, cloning, gene therapy, stem cells and microarrays.	<ul style="list-style-type: none"> ➤ Introduction to Biotechnology Test ➤ PCR lab ➤ Stem Cell Microarray 	PA 3.1.12.A7 PA 3.1.12.A9 PA.3.1.12.B1 PA 3.1.12.B4
Unit 2 	<u>Medical Biotechnology</u> Students will be able to explain how transgenic organisms are created and their uses in medical research. Students will be able to determine which medicines treat individuals through the use of pharmacogenics and detect genetic differences in gel electrophoresis	<ul style="list-style-type: none"> ➤ Medical Biotechnology Test ➤ Transformation of Bacteria Lab ➤ Pharmacogenics lab ➤ Sickle Cell Electrophoresis Lab 	PA 3.1.12.A7 PA 3.1.12.A9 PA 3.1.12.B4
Unit 3 	<u>Introduction to Forensic Science</u> Students will be able to identify members of the crime scene team and correctly evaluate a crime scene. Students will also be able to determine the difference between class and individual evidence.	<ul style="list-style-type: none"> ➤ Locard's Principal Lab ➤ Introduction to Forensics Test 	PA 3.3.12.A8 PA 3.1.12.B4
Unit 4 	<u>Blood Spatter and Human Remains Analysis</u> Students will use blood evidence to determine the height and angle that blood droplets fell. Students will also determine if blood is present using Kastle-Meyer testing. Students will be able to analyze skeletal remains to determine sex, race and age. Finally, students will estimate stages of death using decomposition and entomology.	<ul style="list-style-type: none"> ➤ Blood Spatter Lab ➤ Analysis of Skeletal Remains Lab ➤ Entomology Lab ➤ Test on blood analysis and human remains 	PA 3.3.12.A8 PA 3.1.12.B4
Unit 5 	<u>Human Body Overview</u> Students will gain an overview of the human body systems. Students will identify the basic functions of each organ system.	<ul style="list-style-type: none"> ➤ Rabbit Dissection Lab ➤ Rabbit Dissection Test 	PA 3.1.12.A1 PA 3.1.12.A5 PA 3.1.12.A6