



**Catholic
Memorial**
HIGH SCHOOL

Year Long Course Plan

Department: Science

Course: Accelerated Biology 724/725

Essential Learning Outcomes: After successfully completing this course, students will be able to:

1. Utilize examples to show how scientific method and explanations can be used to make real-life decisions about careers, work places, life-styles, and use of resources.
2. Discuss basic and applied research to show how cultures and individuals have contributed to the development of major ideas in the earth and space, life and environmental, and physical sciences.
3. Identify issues from an area of science study, design and carry out an investigation to collect and analyze data and formulate a conclusion.
4. Describe the normal structures and functions of cells in single-celled and multiple-celled organisms and understand how cells differentiate and how they are regulated.
5. Evaluate the relationships between functions of the cell and functions of the organism as related to genetics and heredity and apply these to specific/current issues in genetics.
6. Account for changes in species and the diversity of species using concepts of evolution and heredity
7. Explain how organisms both cooperate and compete in ecosystems and infer changes in ecosystems prompted by the introduction of new species, changes in environmental conditions, and air, water, or earth pollution.
8. Investigate how the complexity and organization of organisms accommodates the need for obtaining, transforming, transporting, releasing and eliminating the matter and energy used to sustain an organism.

Quarter 1	Quarter 2
Unit I Principles of Cell Biology Introduction: The scientific study of life The chemical basis of life The molecules of cells Structures of the cell	Unit I (continued) Functions of cells How cells harvest chemical energy How cells capture and convert light into chemical energy Unit II Principles of Reproduction Life begets life Mitosis Meiosis
Quarter 3	Quarter 4
Unit III Principles of Genetics The cellular basis of inheritance Patterns of inheritance Molecular biology of the gene DNA technology and the human genome Unit IV Principles of Evolution The theory of evolution How populations evolve The origin of species	Unit V Survey of Biological Diversity Viruses Prokaryotes Protists Fungi Plants Animals Unit VI Animals: Form and Function Evolving body plans

	<p>Unit VII Plants: Form and Function Plant structure Plant reproduction</p> <p>Unit VIII Principles of Ecology Biospheres Population dynamics Communities and ecosystems</p>
--	---

Template: Center for Catholic School Effectiveness 2006