



**Catholic
Memorial**
HIGH SCHOOL

Year Long Course Plan

Department: Science

Course: Foundations of Chemistry and Physics 710/711

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

1. Give examples that show how partial systems, models and estimations are used to give quick and reasonable solutions to basic questions.
2. Discuss basic and applied research to show how cultures and individuals have contributed to the development of major ideas in the physical sciences.
3. Evaluate the data collected during an investigation, critique the data-collection procedures and calculate the degree of precision when possible. Suggest ways to make any needed improvements.
4. Describe atomic structure and the properties of atoms, molecules, and matter during physical and chemical interactions.
5. Illustrate and explain the forces that hold the atom together.
6. Identify chemical and physical interactions and the flow of energy in the system.
7. Analyze changes in the motion of objects and the forces that act on them and represent analytical data both algebraically and graphically.

<i>Quarter 1</i>	<i>Quarter 2</i>
Unit 1: Introduction to Science (ELOs 1, 3, 7) <ul style="list-style-type: none">• Branches of science• Scientific processes• Making measurements & metrics• Converting units• Organizing data & numbers• Velocity (intro)	Unit 2: Motion and Energy (ELOs 1-3 and 7) <ul style="list-style-type: none">• Velocity (complete)• Momentum• Acceleration• Forces• Newton's laws of motion• Work and power• Simple machines• Energy
<i>Quarter 3</i>	<i>Quarter 4</i>
Unit 3: Matter (ELOs 1-5) <ul style="list-style-type: none">• Energy• Matter• Physical and chemical changes• Density• The atom• Periodic table	Unit 4: Changes in matter (ELOs 3, 4, 6) <ul style="list-style-type: none">• Moles• Compounds and molecules• Bonding• Naming and writing formulas

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