Mount Carmel Academy Science Department

The mission of the Science Department of Mount Carmel Academy is to provide all students with an experience of scientific procedures and an understanding of life science, the physical world, and the natural laws controlling them. We further seek to assist students in the development of a scientific attitude characterized by honesty, open-mindedness, suspended judgment, self-criticism and commitment to accuracy.

The Science Department consists of 14 faculty members. Subject areas are divided by grade levels with the exception of transfer students. Eighth graders are required to take Physical Science; freshmen are required to take Biology I; sophomores are required to take Chemistry I; juniors are required to take Physics I. Seniors are offered second year honors electives including Biology II Honors, Biology AP, Chemistry II Honors, Anatomy and Physiology, and for half credit Physics II Honors and Environmental Science.

The members of the science department believe that a solid foundation in science is essential to each young person's development into a responsible, informed citizen. In addition, we believe that science is vital to our students' success in higher education and in their chosen careers. Consequently, the department requires that each student master the basic concepts of physical science, biology, chemistry, and physics, and second-level elective courses are available for those students who wish to learn more about these subjects. Our primary goal is to encourage students to develop a scientific mind characterized by honesty, open-mindedness, suspended judgment, self-criticism and commitment to accuracy.

If you were to walk into a typical science classroom at Mount Carmel Academy, you would observe students actively engaged in mastering complex concepts. At the beginning of class we pray together. Then, the instructor pre-assesses the students' knowledge about the topic. Based on this initial evaluation, a new scientific concept is presented by various methods - direct instruction, teacher demonstration, technology- based activities, hands-on laboratory exploration and problem-solving - thereby addressing multiple learning styles. Integrating science with real-world situations and the use of technology are an essential part of the process. Students will work both independently and in cooperative learning groups with their peers to internalize the concepts and gain the ability to analyze and apply the information. Students are graded on their understanding of the concepts, the application and analysis of those concepts and their ability to synthesize through both minor assessments (homework, quizzes, lab work) and major assessments (projects and tests).

The members of the science department firmly believe that laboratory work is an integral part of the science curriculum. Laboratory exercises provide students with hands-on activities that are essential to

understanding concepts learned in the classroom. During labs, students also become familiar with proper laboratory techniques, safety, and the use of common laboratory equipment. In addition, we believe that data analysis is a key component of lab work. As a result, each teacher requires the writing of lab reports. These lab reports focus on organizing thought processes, effectively communicating results of scientific investigations, interpreting data, graphical analysis, and deductive reasoning.

The science department also considers math skills to be an important aspect of science; therefore, calculations, conversions, algebraic manipulation of formulas, word problems, and graphing are found throughout the science curriculum.

In short, we are passionate about every facet of science. Our commitment to science education is evidenced by our willingness to help students before and after school, during their independent study as well as during our own lunch periods. We employ various methods to help our students comprehend science and to assist our students in understanding its function in everyday lives. Relevance plays a major role in what we teach. If students can see how science relates to everyday activities, they will embrace it and remember it.