

# IPC: Integrated Physics and Chemistry



## PURPOSE

Today much of the so-called “science” in the media and the political scene is nothing more than junk science. A collection of information based on feelings and ideas but lacking rigorously tested data. Since this information has not been tested, it has not gone through a skeptical analysis or been verified by the process of the scientific method. Being "peer reviewed" is not a replacement for the scientific method.

So, the first goal of this course is to help you understand what science is and is not. Never Forget that science has limitations. The second goal is to equip you with the necessary tools for making informed decisions concerning scientific information. You need to know and understand how to interpret data, so that you do not become prey to those who would deceive you. Finally, the third goal of this IPC course is to familiarize you with matter, its changes in composition and motion, and the energy involved.

## OBJECTIVES

- Understand what science is and is not
- Learn the proper use of the scientific method
- Develop skills using scientific tools
- Work with the metric system
- Comprehend matter and its properties
- Discover Atomic Structure
- Atoms, Elements, and the Periodic Table
- Molecules, Compounds, and bonding
- Discover Chemical Reactions and Equations
- Learn to balance chemical equations
- Identify solutions, acids and bases
- Introduce nuclear changes
- Understand Motion and Forces
- Discover the work and energy relationship
- Learn about work, power and machines
- Uncover the types of waves and their characteristics

## **Skills**

- 🕒 Know the metric system and SI units.
- 🕒 Determine precision, accuracy and significant figures.
- 🕒 Develop problem-solving skills.
- 🕒 Understand how to collect, prepare and interpret data.
- 🕒 Master naming compounds and determining chemical formulas
- 🕒 Learn to write and balance chemical equations.

## **Laboratory**

- 🕒 Learn and use safe lab procedures.
- 🕒 Name and use lab equipment.
- 🕒 Develop skills for observing, accurate measuring and record keeping.

***“My scientific work is motivated by an irresistible longing to understand the secrets of nature and by no other feelings.” --Einstein***