



IB Physics

1. NATURE OF SCIENCE

Standard 1.1: Understand the nature of scientific inquiry (*Understand and use the scientific method*)

- 1.1.1 Ask scientific questions
- 1.1.2 Formulate hypotheses
- 1.1.3 Identify and distinguish dependent, independent and control variables
- 1.1.4 Implement and revise experimental procedures.
- 1.1.5 Collect and organize raw data
- 1.1.6 Process and present data.

Standard 1.2: Communicate scientific ideas and activities clearly

- 1.2.1 Compare results with published accepted values
- 1.2.2 State a justifiable conclusion.
- 1.2.3 Evaluate the results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists
- 1.2.4 Explain how and why ethical consideration can limit scientific research

Standard 1.3: Investigate using appropriate tools and instruments to conduct scientific activities

- 1.3.1 Use technology and mathematics to perform accurate scientific investigations and communication
- 1.3.1 Choose/use scientific tools appropriately

Standard 1.4: Understand the nature of scientific knowledge and enterprise (*Understand why science is important*)

- 1.4.1 Develop awareness of ethics involved in the scientific enterprise
- 1.4.2 Recognize the dynamic nature of scientific knowledge.
- 1.4.3 Peer review and reflect on scientific presentations.

3. PHYSICAL SCIENCES

Standard 3.1: Understand the structure and properties of matter

- 3.1.1 Describe the structure and behavior of matter at the atomic and subatomic level.
- 3.1.2 Apply the conservation laws of matter.
- 3.1.3 Explain the origin and significance of emission and absorption spectra

Standard 3.2: Understand the sources and properties of energy

- 3.2.1 Know that energy and matter are interchangeable
- 3.2.2 Explain the conservation of energy and how it applies to energy transformations.

Standard 3.3: Understand forces and motion

- 3.3.1 Explain the nature the fundamental forces and apply the corresponding laws and mathematical methods.
- 3.3.2 Define, explain and apply kinematic concepts classical and modern
- 3.3.3 Define, explain and apply the concepts, classical and modern, involved in dynamics

5. ENVIRONMENTAL SCIENCES

Standard 5.1: Understand atmospheric processes and cycles

- 5.1.4 Recognize that energy is not recycled in ecosystems.

Standard 5.2: Understand how society uses and conserves resources and energy

- 5.2.4 Describe commonly used fuels

Standard 5.3: Identify, investigate and evaluate environmental problems and issues

- 5.3.2 Explain the concept of exported/imported pollution (eg Global Warming).

PASSION | CREATIVITY | AMBITION