



# IB Science 9 Physics Environmental Systems

- PS 1 Describe and apply the concepts of Carrying Capacities, Ecological Footprints and how society and the environment interact.
- PS 2 Outline the Organization of Life and describe how ecosystems work.
- PS 3 Describe the nature and explain the implications of Human Population Dynamics.
- PS 4 Describe the nature and explain the implications of Resource Dynamics.
- PS 5 Outline the range of energy resources available to society and evaluate the advantages and disadvantages of two contrasting energy sources, with consideration for factors that affect choices of energy sources adopted by different societies.
- PS 6 Define pollution, state the major sources of aquatic, terrestrial, and Atmospheric pollutants and describe two direct methods of direct methods of monitoring pollution.
- PS 7 Analyze and explain Issues of Global Warming.
- PS 8 Analyze and apply Vectors and Scalars.
- PS 9 Analyze and solve problems involving Kinematics (Linear Motion).
- PS 10 Analyze and solve problems involving Dynamics (Forces).
- PS 11 Analyze and solve problems involving Work, Energy and Power.
- PS 12 Analyze and solve problems involving Waves and the Electromagnetic Spectrum.
- PS 13 Analyze and solve problems involving Electricity and Magnetism.
- PS 14 Design/Evaluate a valid Investigation, collect and process experimental data, and write a valid investigative report.
- PS 15 Describe the role of science in technology and engineering, outlining real-world applications.
- PS 16 9-10.RST.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
- PS 17 9-10.RST.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.
- PS 18 9-10.RST.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics.
- PS 19 9-10.WHST.1 Write arguments focused on discipline-specific content.
- Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.
  - Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.
  - Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
  - Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
  - Provide a concluding statement or section that follows from or supports the argument presented.
- PS 20 9-10.WHST.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
- Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

- b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
- c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.
- d. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.
- e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).