

Cambridge AICE Chemistry 1

- PS 1 Perform calculations involving moles and stoichiometry.
- PS 2 Describe atomic structure including the locations of protons, neutrons, and electrons in atoms and the shapes and energies of electronic orbitals.
- PS 3 Describe the formation of ionic, covalent, and metallic bonds and the effect of bonding and intermolecular forces on the physical properties of matter.
- PS 4 Describe the physical states of matter using kinetic theory and gas laws.
- PS 5 Describe enthalpy changes in chemical reactions using Hess' Law and bond energy calculations.
- PS 6 Understand Redox reactions and describe their application in electrolysis.
- PS 7 Understand chemical equilibria and apply Le Chatelier's principle to chemical systems at equilibrium.
- PS 8 Use collision theory and the Boltzmann distribution to explain the effect of temperature, concentration, and catalysts on reaction rates.
- PS 9 Understand the periodicity of the physical and chemical properties of the elements.
- PS 10 Understand the physical properties, uses, and reactions of the group II and group VII elements.
- PS 11 Explain the production and importance of nitrogen and sulfur containing compounds such as ammonia, sulfuric acid, and nitrogen oxides.
- PS 12 Write the formulae of basic organic molecules and identify their functional groups and common chemical reactions.
- PS 13 Understand the sources of hydrocarbons and halogenoalkanes and describe their main reactions.
- PS 14 Explain the formation of alcohols, esters, and carbonyl compounds and describe their main reactions.
- PS 15 Plan, carry out, and communicate practical laboratory work.
- PS 16 11-12.RST.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
- PS 17 11-12.RST.2 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
- PS 18 11-12.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 11–12 texts and topics.
- PS 19 11-12.RST.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
- PS 20 11-12.WHST.1 Write arguments focused on discipline-specific content.
- Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
 - Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.
 - Use words, phrases, and clauses as well as varied syntax 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.

e. Provide a concluding statement or section that follows from or supports the argument presented.

PS 21 11-12.WHST.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

PS 22 11-12.WHST.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.