Curriculum Analysis Grid: Form 1 Chemistry Term 3

Level: Form 1

Subjects: Chemistry

Curriculum Philosophy and Goals:

The Competence-Based Curriculum fosters scientific inquiry, critical thinking, and practical skills in chemistry to prepare learners for understanding chemical concepts and their applications in real-world contexts. The goals include developing skills in observation, experimentation, and analysis to explore chemical phenomena, equipping learners with hands-on skills to apply chemical concepts in laboratory and real-world settings, and promoting environmental awareness through understanding chemical processes and their impact.

Topic	Sub Topic	Prescribed Competences	Key Concepts and Content	Learning Strategies	Assessment	Learning Environment	Material Development	Structure of Materials	Teacher Status
Atomic Structure	1.4.1 Structure of the Atom	Analytical Thinking, Critical Thinking, Problem Solving	- Basic structure: nucleus (protons, neutrons), electrons - Atomic models (e.g., Dalton, Thomson, Rutherford) - Properties of subatomic particles	- Constructing atomic models using craft materials - Group discussions on historical atomic models - Watching videos on atomic structure - Drawing	Formative: 1. Group presentation on atomic models (10 marks) 2. Quiz on subatomic particles (10 questions) Summative: 1. Test on atomic structure (20 marks)	Classroom with multimedia for videos, space for model building, discussion areas	- Craft materials for model construction - Videos on atomic structure - Charts of subatomic particles	- Charts: Diagrams of atomic models - Videos: Short clips (5-10 min) on historical models - Model templates: Guidelines for building atomic structures	Teachers should be skilled in atomic theory, model-building facilitation, and multimedia use. Current status: Trained in Competence-Based

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				atomic diagrams					Curriculum delivery.
Atomic Structure	1.4.2 Atomic Number and Mass Number	Analytical Thinking, Critical Thinking, Problem Solving	- Definitions: atomic number, mass number - Calculating protons, neutrons, and electrons - Isotopes and their significance	- Calculating atomic and mass numbers in pairs - Analyzing isotopes using periodic table - Group tasks to solve problems on isotopes - Using simulations to visualize atomic structure	Formative: 1. Group calculation task (10 marks) 2. Quiz on atomic/mass numbers (10 questions) 3. Isotope analysis report Summative: 1. Test on atomic/mass numbers (25 marks) 2. Project: Isotope comparison chart (rubric: accuracy, clarity)	Classroom with access to periodic tables, calculators, and simulation software	- Periodic table charts - Calculators for computations - Simulation software for atomic visualization	- Charts: Periodic table with atomic/mass number emphasis - Simulation guides: Instructions for software use - Project templates: Isotope comparison charts	Teachers need expertise in isotope calculations, simulation tools, and group facilitation. Current status: Proficient in inquiry-based teaching.

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Atomic Structure	1.4.3 Electronic Configuration	Analytical Thinking, Creativity, Critical Thinking	- Electron shells and subshells - Rules for electron distribution (Aufbau, Pauli, Hund) - Configurations for elements 1–20	- Writing electronic configurations in groups - Creating models of electron shells - Simulating electron distribution using software - Comparing configurations of elements	Formative: 1. Group configuration task (10 marks) 2. Quiz on electron rules (10 questions) 3. Model presentation Summative: 1. Test on electronic configurations (20 marks) 2. Project: Electron shell diagram for elements 1–20 (rubric: accuracy, creativity)	Classroom with model-building materials, access to simulation software, periodic tables	- Model materials for electron shells - Simulation software for electron distribution - Periodic table charts	- Model templates: Electron shell construction guides - Simulation guides: Software instructions - Project templates: Diagram formats for elements 1–20	Teachers require skills in electron configuration, model-building guidance, and creative assessment. Current status: Experienced in simulation-based instruction.
Atomic Structure	1.4.4 Valency and Chemical	Analytical Thinking, Critical	- Concept of valency - Types of	- Role-playing ionic and covalent	Formative: 1. Role-play reflection (10	Classroom with role-playing	- Charts on bonding types	- Charts: Diagrams of ionic/covalent	Teachers should be competent in

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	Bonding (Introduction)	Thinking, Problem Solving, Collaboration	bonds: ionic, covalent (introduction) - Role of valence electrons in bonding	bonding scenarios - Group tasks to determine valency of elements - Drawing simple bonding diagrams - Discussing real-world applications of bonding	marks) 2. Quiz on valency and bonding (10 questions) 3. Bonding diagram task Summative: 1. Test on valency and bonding (25 marks) 2. Project: Poster on bonding types (rubric: clarity, creativity)	space, access to charts and model kits, discussion areas	- Model kits for bonding visualization - Videos on real-world bonding applications	bonds - Role-play scripts: Bonding scenarios - Poster templates: Bonding type visuals	chemical bonding, role-playing facilitation, and project assessment. Current status: Familiar with collaborative learning strategies.
End of Term Tests	Review of Atomic Structure Topics	Analytical Thinking, Critical Thinking, Problem Solving, Creativity	- Reviewing atomic structure, atomic/mass numbers, electronic configurations,	- Practice tests in groups - Peer-led review sessions - Solving past	Summative: Comprehensive test (50 marks: 15 structure, 15 atomic/mass numbers, 10 configurations,	Classroom with quiet testing areas, access to past papers and periodic tables	- Test papers with mixed question types - Past papers for practice - Periodic	- Test papers: Structured with clear sections for each topic - Review charts:	Teachers must be skilled in test design, grading rubrics, and feedback

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Topic	Sub Topic	Prescribed Competences	Key Concepts and Content	Learning Strategies	Assessment	Learning Environment	Material Development	Structure of Materials	Teacher Status
			valency, and bonding - Solving integrated problems across topics	papers individually - Reflecting on projects	10 bonding; mix of multiple-choice and open-ended questions)		table charts for review	Summaries of key concepts - Past papers: Sample questions for practice	provision. Current status: Proficient in summative assessment design.

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