

Instructional Design Document – With DT

Date: _XXX_ Class: _9A_	Topic name: _Valency_	Faculty name: _Ms. Shruti_
Topic context		A short overview of the Topic's purpose and its end objectives
Purpose	To enable learners to conceptually understand valency, correctly determine valency and apply it to real-world substances.	
Objectives	To help learners understand the principle of valency. To bridge gaps between rote knowledge and conceptual clarity. To develop the ability to write chemical formulae accurately. To apply valency knowledge to real-world chemical substances.	
Learning descriptions		An insight into the learners and learning environments
Learner Profile	Mixed-ability learners Prior exposure to atomic structure Gaps identified in application and reasoning	
Pre-requisite	Basic structure of atom Concept of electrons and shells Symbols of common elements	
Learning Environment	Physical classroom	
Design specifications		
Performance goals	Enable learners to confidently explain why atoms combine Prepare learners for advanced topics like chemical bonding and reactions Develop scientific reasoning and application skills	
Learning outcomes	(Aligned with UbD Stage 1) The learner will be able to: Define valency and explain it in simple terms Identify valency using electronic configuration Write chemical formulae using valency Explain why atoms combine to form compounds Apply the concept of valency to real-life substances	
Delivery methods	Stage 0: Concept Activation (Empathize) Discussion: Why don't atoms exist alone? Diagnose misconceptions through questioning Stage I: Concept Exploration (Define) Visual explanation of atoms and valence electrons Identify gaps in understanding valency Stage II: Concept Explanation (Ideate) Teacher-guided explanation of valency Use of analogies and models Stage III: Skill Application (Prototype) Step-by-step practice: Finding valency Writing formulae (H_2O , $NaCl$, CO_2) Peer-supported learning Stage IV: Real-life Application (Test) Case studies: salt, water, medicines Learners explain compounds using valency Stage V: Reflection (Retrospective) Exit tickets Student reflection: What helped me understand valency today?	
Assessment type	MCQs (concept + application) Short-answer reasoning questions Worksheet-based formula writing Oral explanation tasks	
Assessment level	Bloom's Level: BL2 – BL3 Understand Apply Explain	