DEPARTMENT OF EDUCATION
ILAW LESSON PLAN TEMPLATE

Lesson Title	Mapping Matter: Tracking Changes of State Using Diagrams and Flowcharts
Learning Area/s	Science 6
Name of Teacher/s	Grade 6 Science Instructional Team
Grade Level and Section	Grade 6 - Sections Alpha, Beta, & Gamma
No. of Sessions	5 Sessions (50 minutes per session)
References (books, websites, toolkits, etc.)	DepEd K to 12 Science 6 Curriculum Guide; DepEd Science 6 Learner's Material; Phase Change Diagrams Resource Manual.
Declaration of AI use	AI was utilized to format the structural alignment of the five sessions according to the DepEd learning design principles outlined in the provided ILAW template and DepEd DO 3 s.2026 Annex A, ensuring precise integration of scaffolding, inclusion, and formative task flows.

INTENTIONS

Meaningful learning experiences are anchored in how we frame them. Start by deciding what you want learners to master by the end of the lesson – keep it clear and simple. Remember: Understanding your learners' evolving context and designing around it ensure that your lessons connect with and are relevant to them.

Learning Competency and Curriculum Standards	Learning Competency: Describe changes of state for solids, liquids, and gases as melting, evaporation, freezing, condensation using diagrams and flowcharts. Content Standard: The learners demonstrate an understanding of the effects of heat energy on the particulate arrangement and macroscopic behaviors of solids, liquids, and gases. Performance Standard: The learners should be able to create an interactive or static community weather-and-resource flowchart demonstrating how phase changes occur in everyday environmental activities (such as salt-making, water purification, or food preservation).
Learning Objectives	By the end of the 5 sessions, the learners will be able to: 1. Knowledge: Define and differentiate the thermal processes of melting, freezing, evaporation, and condensation.

	2. Skill: Construct precise diagrams and technical flowcharts indicating direction of heat transfer (gain vs. loss) and the corresponding structural changes of states. 3. Affective/Task: Express the real-world value of mapping thermal energy pathways by explaining how community livelihood safety or household resources rely on controlling these changes of state.
Learner Context	Observations & Strengths: Grade 6 learners display high curiosity for hands-on, structural, and visual modeling activities. They possess strong digital literacy skills and excel in group design projects. Barriers & Interventions: Some learners face challenges transitioning from abstract microscopic concepts to structured technical diagrams and formal logic flowcharts. Abstract terms (thermal dynamics) require step-by-step visual scaffolds, interactive manipulation, and tailored peer-buddy configurations to ensure academic safety and inclusion.

LEARNING EXPERIENCE

A learning experience is like a thoughtfully designed journey. Each activity and interaction builds towards meaningful understanding and growth. Identify activities and interactions to help learners gain knowledge, skills, or understanding in a purposeful way.

Pre-Lesson	The teacher sets up an immersive 'Thermal Chamber Display' featuring three stations: an ice block melting under a warm light, a small beaker of water boiling on a safe heating element with vapor rising, and a cold metal lid placed over a warm water cup showing visible droplets forming underneath. The teacher poses the diagnostic riddle: 'Energy is hiding, shifting, and shaping everything you see. What is invisible but changes a solid into a cloud, and a cloud back into a liquid drop?' This activates visual pathways and links the immediate physical setup to upcoming technical mapping.
Flow	SESSION 1: Thermal Foundations & Melting/Freezing (Clear Goals & Active Retrieval) - Well-being Check: Students place their name pins on a 'Thermal Scale' board (Cold/Low Energy = Feeling tired; Boiling/High Energy = Hyper/Excited; Room Temp = Calm and focused) allowing the teacher to adjust grouping dynamics. - Connection to Past Competencies: Short interactive quiz reviewing solid, liquid, and gas molecular spacing using hand-gestures (clenched fists = solid; moving hands = liquid; wide spread arms = gas).

	- Explicit Instruction: Focus on Melting and Freezing. Define heat gain vs. heat loss. - Scaffolding: The teacher models a simple 2-box horizontal flowchart showing Ice (+ Heat) -> Water. Students complete a guided transition diagram for Water (- Heat) -> Ice using structural arrows. SESSION 2: Fluid Shifts & Evaporation/Condensation (Scaffolding & Social Learning) - Active Retrieval: 3-minute rapid recap using peer-flashcards matching thermal states. - Guided Discovery: Analyze how liquid water transforms into vapor and returns via a cooling plate. Define Evaporation and Condensation. - Collaborative Flowcharting: In peer-buddy pairs, students use dry-erase markers directly on their desks to draw a circular cycle connecting water, heat addition, vapor, heat removal, and condensation droplets. Teacher conducts continuous desk-side checks. SESSION 3: Diagram Standard Symbols & Logic Mapping (Systematic Scaffolding) - Explicit Teaching: Introduce the standard rules of scientific flowcharts: Rectangles for states of matter, Arrows for directional process flow, and Color-coded text blocks (Red for Heat Absorbed/Endothermic, Blue for Heat Released/Exothermic). - Scaffolded Practice: The teacher displays a mixed-up diagram with misplaced arrows and labels. The class collaboratively directs the teacher to correct the layout via a 'Live Fix' activity. - Independent Attempt: Students sketch a preliminary 4-phase integrated flow diagram on their personal templates. SESSION 4: Integrated Phase-Change Architecture (Values Integration & Inclusion) - Values & Purpose Integration: Discussion on how understanding phase changes safeguards local communities. (Examples: How evaporation and condensation form rain cycles vital for local agriculture; how controlled freezing prevents food spoilage and minimizes wastage). - Cooperative Production: Small mixed-ability groups build a large-format phase change map. Differentiated Roles: 'Architect' (draws boxes/shapes), 'Thermal Analyst' (assigns heat flow direction), and 'Scribe' (describes processes textually). Tactile materials provided for learners requiring kinesthetic accommodations.

	SESSION 5: Presentation, Synthesis & Metacognitive Review (Self-Awareness & Closure) - Social Learning: A 'Gallery Walk and Flowchart Audit'. Groups leave a sheet of sticky notes next to their posters. Rotating groups review classmate flowcharts and check for accuracy: 'Are arrows pointed correctly? Is heat gain labeled accurately?' - Consolidation: Class review of standard systemic diagram configurations. - Metacognition & Self-Awareness: Reflection Prompt: 'I used to think making scientific diagrams was just drawing pictures, but now I understand that a flowchart is a way of thinking because...'
Learning Resources	Primary: Magnetic phase change card sets, dry-erase desk markers, standard flowchart templates, colored chart paper, physical demonstration kits (ice, warm plates, glass beakers). Inclusive Emergency Alternatives: In the event of power outtages or limited technical printing resources, the teacher will substitute digital materials with hand-drawn blackboard grids and utilize locally abundant organic items (e.g., natural charcoal for diagram drawing, local salt pan structures) to illustrate evaporation pathways effectively.
Opportunities for integration	This lesson integrates with English Language Arts (Technical Writing and logical sequencing structures) and Information and Communications Technology (ICT - introducing algorithmic logic blocks, inputs, and algorithmic arrows applicable to computerized design workflows).

ASSESSMENT

Assessments reveal what learners have gained and what they still need help with. These are helpful in providing you with information to guide your future instruction throughout the entire session.

Formative Assessment	1. Mid-Session Help Signals: Students use color-coded desktop cups (Green = Working fine; Yellow = Slow down/Need clarification; Red = Stopped/Require urgent guidance) to maintain real-time feedback loops without public anxiety. 2. Daily Flowchart Quick-Checks: At the conclusion of Sessions 1, 2, and 3, students submit a index-card sized 'Mini-Map' correctly connecting two changing states using standard arrows and heat tags.

	3. Culminating Flowchart Rubric: The integrated team posters are evaluated using four distinct standard bands: - Structural Accuracy (correct sequencing of matter states) - Thermal Tracking (correct arrow directions and heat parameters) - Explanatory Logic (clarity of written/oral process transitions) - Peer Auditing Quality (constructive critique given during the walkthrough). Inclusion & Accommodations: Learners with motor-skill processing delays or writing difficulties are provided pre-cut, magnetic structural shapes and labeled process blocks. They can demonstrate complete structural competency by arranging the physical flow elements on a magnetic surface and providing verbal explanations to a peer or teacher.

WAYS FORWARD

Meaningful learning can also happen beyond the classroom – for both the learners and the teacher. Pause and reflect on what happened today.

Extended learning opportunities	Learners can take on the 'Household Thermal Audit' challenge. Students inspect their home kitchens or local community environments for one practical instance of melting, evaporation, freezing, or condensation (e.g., frost on refrigerators, drying agricultural produce, ice-making business). They draft a 3-step flowchart of this local activity in their science journals to share during the next unit's opening active retrieval circle.
Reflections	To be completed by the instructor after implementing the 5 sessions: - Did the structural constraints of standard flowchart symbols enhance or limit the students' ability to describe particle changes? - Which particular transition (e.g., condensation vs. evaporation) presented the highest rate of arrow reversal errors on the exit slips? - Points for professional collaboration: Share strategies in the upcoming School LAC (Learning Action Cell) meeting regarding the effectiveness of the non-verbal cup signaling system in tracking mastery during active charting tasks.