

Primary 6 Science — States of Matter

Scheme of Work & Lesson Plan | Unit 3: Weather, Air and Diffusion (Sub-topic 3.3)

Class: Primary 6

Subject: Science

Topic: States of Matter

Periods: 2 × 40 minutes

Scheme of Work

Two periods covering this sub-topic: first the properties of matter in its three states, then how heating and cooling change matter from one state to another.

Period	Competency	Learning Outcomes	Teaching & Learning Aids	Methodology	Evidence of Achievement
1	The learner demonstrates understanding of matter and its three states.	By the end of the lesson, the learner should be able to: - define matter - identify examples of solids, liquids and gases - describe the shape, volume and mass of each state	Stone, cup of water, inflated balloon, assorted classroom objects	Guided discovery, group work, question and answer	Learner sorts a set of objects into solid / liquid / gas and states one correct property of each
2	The learner demonstrates understanding of how heating and cooling change the state of matter.	By the end of the lesson, the learner should be able to: - explain melting, freezing, evaporation, condensation and sublimation - relate each process to a real-life example - complete a diagram of the state-change cycle	Ice cube, candle wax, heat source (adult-supervised), state-change diagram	Demonstration, group discussion, diagram labelling	Learner correctly labels a blank state-change diagram and gives one everyday example of a state change

Lesson Plan — Period 1: Properties of Solids, Liquids and Gases

Duration: 40 minutes

Sub-topic: Properties of matter

Competency: The learner demonstrates understanding of matter and its three states.

Learning outcomes: By the end of this lesson, the learner should be able to define matter, identify examples of solids, liquids and gases, and describe the shape, volume and mass of each state.

Cross-cutting issues: Communication, critical thinking, environmental awareness.

Pre-requisite knowledge: The learner can already name common everyday materials (water, stones, air) and has seen these materials used at home.

Phase / Time	Teacher's Activity	Learner's Activity
Introduction 5 minutes	Shows a stone, a cup of water, and an inflated balloon. Asks: 'What is different about these three things?'	Observe the three objects and suggest differences (hardness, wetness, 'has air inside').
Lesson development 25 minutes	Guides learners to test each object: press the stone (no change), pour the water into containers of different shapes (takes the shape of the container), press the balloon (air spreads to fill it). Introduces the terms matter, solid, liquid and gas, and explains that matter is anything that occupies space and has mass. Distributes a set of classroom objects to groups.	In groups, test and sort the given objects into solid, liquid or gas. Record one property of each object (shape, whether it flows, whether it can be poured) in a table.
Conclusion / review 10 minutes	Summarises the three states using the particle diagram (Diagram 1) and reviews the properties. Poses two oral recap questions.	Copy the summary table into notebooks. Answer the recap questions orally.

Lesson Plan — Period 2: Effect of Heat on Matter

Duration: 40 minutes

Sub-topic: Change of state

Competency: The learner demonstrates understanding of how heating and cooling change the state of matter.

Learning outcomes: By the end of this lesson, the learner should be able to explain melting, freezing, evaporation, condensation and sublimation, and relate each to a real-life example.

Cross-cutting issues: Communication, safety awareness (handling heat sources), environmental awareness (water cycle link).

Pre-requisite knowledge: The learner already knows the three states of matter and their properties, from Period 1.

Phase / Time	Teacher's Activity	Learner's Activity
Introduction 5 minutes	Shows an ice cube in a dish. Asks: 'What will happen to this if I leave it in the sun?'	Predict what will happen and give reasons.
Lesson development 25 minutes	Demonstrates melting candle wax over a heat source (adult-supervised) and cooling it back to a solid. Demonstrates water heated to steam and steam condensing on a cold lid. Introduces melting, freezing, evaporation, condensation and sublimation using the state-change diagram (Diagram 2), linking each term to what learners just observed.	Observe both demonstrations from a safe distance and describe what happens at each stage. In groups, discuss and list one everyday example of each process (e.g. ice melting, wet clothes drying, mist forming on a cold cup).
Conclusion / review 10 minutes	Distributes a blank state-change diagram for learners to label. Reviews correct answers as a class.	Label the blank diagram individually, then check answers against the class review.

Note: exact timing and group sizes should be adapted to class size and available materials. The two demonstrations in Period 2 involve heat — an adult should supervise.