

materials

Freezing and melting

Lesson at a glance

Open by holding a clear bowl of ice cubes so a few pupils feel the cold outside and the class guesses what is inside, then reveal the ice. Name ice as hard, cold water, then run a whole-class predict-and-watch melt in the warm room, naming melting only after water appears. Groups explore still-hard cubes in their own bowls with towels beside them, notice the change, and close with a short display-only talk that cold freezes water and warmth melts ice again.

Learning objectives

- Feel and look at ice and say how it is different from water
- Watch ice melt and talk about the change from ice to water
- Talk about cold turning water to ice and warmth turning ice back to water

Before the bell – prep

Freeze ice cubes overnight (smaller cubes melt faster; colour a few if you wish). Keep group ice in a cool bag or freezer until step 4 so it stays hard. Ready clear bowls, towels, a spare bowl and extra small cubes for a slow-melt day.

Materials

Item	Qty	Per	Source	Low-cost substitute
pre-frozen ice cubes (some coloured with a drop of food colouring if wished; prefer smaller cubes for a quicker visible melt)	6	group	supermarket	a bag of ice from a shop, broken into small chunks
clear bowls	1	group	classroom	clear takeaway tubs or large clear plastic cups
towels	1	group	classroom	tea towels or a roll of paper towel
extra clear bowl for teacher demonstration	1	class	classroom	any clear container the class can see into
cool bag or insulated box to hold group ice until step 4	1	class	classroom	leave group cubes in the freezer and fetch them at the step-4 transition

**Safety watch-point**

No tasting the ice. Wipe spills at once; stop if hands are uncomfortably cold; wash hands after water play.

**Teaching moves**

- **Getting Started:** Hold the frosted bowl closed so two or three pupils touch the outside while the class watches and guesses. Keep the reveal short and playful, then tip to show the ice: 'Ice! Frozen water.'
- **Ice and water:** Keep the ice in view and take only look-and-feel notices — hard, cold, shiny, slippery. Name ice now; hold melting and freezing until children have watched the change.
- **Watch the ice melt:** Place a few small cubes in one clear bowl on the demo table. Say the cycle aloud: I wonder, I predict (thumbs), I test, I observed, I think — then name melting. Every half-minute ask a visible notice: edges wet? smaller? water at the bottom? If little changes, warm the bowl gently in your hands — never hot water, radiator or flame.
- **Explore our ice:** Send groups only after helpers fetch still-hard cubes and a towel; sleeves up first. Circulate with short prompts: hard or soft? cold or warm? water on your fingers? Revoice that the water came from the ice melting. Brief touches only if fingers get too cold.
- **What is changing?:** Bring groups back to still looking. Draw out smaller ice, more water, softer edges. Separate what we see from what we think it means, and reuse melting if children offer it. Compare a faster and slower bowl if useful.
- **Make-sense talk:** Display-only, one beat at a time: name melting from their words first; then freezing lightly via freezer ice cubes and frost or a frozen puddle; then one real-world cold helper (ice-cream van or cool bag) and invite one or two quick ideas.

What it should show

Pupils typically notice ice is hard, cold and slippery, then see it shrink and leave water in the bowl as it melts in the warm room. Affirm that the puddle came from the ice. If a group's cubes barely change, cubes were large or the room is cold — compare with a smaller-cube bowl or hand-warmed demo rather than calling it a wrong result.

Misconceptions & interventions

- **Ice and water are two different things — ice is not water.** — Point to the melting cube and the puddle: 'This water came from the ice. Ice is water that went hard and cold; when it melts it is water again.'
- **Ice only melts with fire, a cooker or hot water — a warm room is not enough.** — Keep the demo to classroom air only and revoice what they watched: 'No flame, no hot water — the warmth of our room was enough to melt the ice.'



Differentiation

Emerging	Developing	Proficient
• Invite pointing to the hard ice and to the water in the bowl, and accept one feel word (cold/hard) revoiced by you.	• Ask them to say one difference between ice and water in their own words during explore or the make-sense talk.	• Prompt a wonder about why one bowl melted faster than another (smaller cubes, warmer hands, place in the room) without opening a new test.

Cross-curricular hook

Link to outdoor frost or a frozen puddle on a cold Irish morning, and to home freezers or cool bags on a picnic.