

materials

Freezing and melting



Lesson at a glance

Open by holding a clear bowl of pre-frozen ice cubes so children feel the cold outside and guess what is inside, then reveal the ice. Name ice as hard, cold water and take a few look-and-feel notices. Run a whole-class predict-and-watch: leave small cubes in warm room air and fold the class in with short noticing questions as they melt. Groups then explore still-cold cubes at table bowls with towels, notice water appearing, and close with a talk naming melting and freezing from what they saw.

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 small ice cubes overnight (colour a few if you wish) and keep group ice in a cool bag or freezer until step 4 so it stays hard. Ready clear bowls, towels, a class basin for emptying, and spare small cubes for a slow-melt day. No hot water or radiator.

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 ice or meltwater. Brief touches only if hands get too cold; wipe spills straight away; wash hands after water play.

**Teaching moves**

- **Getting Started:** Hold the frosted bowl closed at first. Invite only two or three children to touch the outside while the class guesses, then tip to reveal: Ice — frozen water. Keep the reveal short and playful.
- **Ice and water:** Keep the ice in view and take oral notices only — hard, cold, shiny, slippery. Name ice now; hold melting and freezing until children have watched the change. If someone says ice and water are different things, gently revoice: ice is water that has frozen.
- **Watch the ice melt:** Place a few small cubes in one clear bowl on the demo table. Model out loud: I wonder, I predict (thumbs), I test, I observe, I think — then name melting only after they have watched. Every half-minute ask one visible notice (edges round? water at the bottom?). If little changes, warm the bowl gently in your hands — never hot water or a radiator.
- **Explore our ice:** Send groups only when cubes are still hard from the cool bag. One helper per table collects bowl plus towel; sleeves up first. Circulate with short-turn prompts: hard or soft? cold or warm? water on your fingers? Revoice: that water came from the ice melting. Stop hands that 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. Compare a fast-melt bowl with a slower one and wonder why — smaller cubes, warmer hands, place in the room.
- **Make-sense talk:** One beat at a time. First revoice melting from their words. Only then add freezing lightly — freezer ice cubes, frost on grass, a frozen puddle. Close with one familiar helper (ice-cream van or cool bag) and invite one or two who-else ideas. No particle talk or fair testing.

**What it should show**

Children typically notice ice is hard, cold and slippery, then see cubes shrink and water pool as the room warms them — name this melting. Freezing is accepted as the reverse via freezer, frost or frozen puddles. A bowl that barely melts usually had large cubes or a cold spot; use smaller cubes or gentle hand-warm on the bowl. Affirm notices; steer away from tasting or calling ice a different substance from water.





Misconceptions & interventions

- **Ice and water are two different things — ice is not water.** — Point to the melting cube and the puddle in the same bowl: this water came from the ice. Revoice: ice is water that went hard and cold; when it melts it is water again.
- **Ice only melts if we put it somewhere hot, like a radiator or hot water.** — Gesture to the classroom air and the wet bowl: our warm room was enough. Name melting from what they watched — no flame or hot water needed.

Differentiation

Emerging	Developing	Proficient
• Invite pointing to the hard ice and to the water in the bowl, and offer the words hard, cold and wet for them to echo.	• Prompt one difference in their own words: how ice felt at the start and what is in the bowl now.	• Ask why one group's bowl melted faster than another's, using only what is on the tables (cube size, hands, place in the room).

Cross-curricular hook

Link to Aistear/oral language: hard, cold, wet, melt, freeze — and to outdoor frost or frozen puddles on a cold Irish morning.