

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.