

Weigh, Melt, Reweigh

TEACHER DEMO • KIDS READ THE NUMBERS

SET UP 9:45 • FINALE 1:20

10 + 15 MIN

The point

Melting changes the particles' **grip**, not the particles. Same particles, same count — so the scale reads the **same number**, frozen or melted.

Materials

- Small mason jar with lid, filled with ice, frozen overnight
- 0.1 g digital scale (fresh battery, tared)
- Sunny windowsill
- Number Log sheets + pencils

Steps

- 1 Show the sealed jar; **shake it** — solid clunks. “Lid stays ON all day. Nothing in, nothing out.”
- 2 **Weigh it.** A child reads the grams aloud; everyone writes the number in the Number Log.
- 3 Kids **predict on the worksheet front** (pencil circle) and write a guess number in the Log.
- 4 Park the jar on the windowsill. **Nobody touches it.** Peek at lunch — slosh AND clunk.
- 5 1:20 — **reweigh**, same scale, same spot. Read aloud, write it down.
- 6 **Subtract together.** Zero difference is a real measured result!
- 7 Kids put a big ✓ **on the true worksheet picture.**

Say: “The scale can’t see inside the jar. It only counts the stuff. Melting moved the particles apart — it didn’t take a single one away.”



Fig. 1 — the sealed jar on the scale: nothing in, nothing out

TEACHER PREP — THE DAY BEFORE

Fill the mason jar with ice cubes, lid on tight, into the freezer. Fresh battery + tare check on the scale.

What to watch for

- The morning clunk becoming a lunch slosh-and-clunk
- Kids’ guesses splitting between “less” and “the same”
- Someone realizing the lid is the whole trick — celebrate that

EXPECTED RESULT

The two weights match to the tenth of a gram. **State changed; stuff didn’t** — weight comes from the particles, and every particle is still in the jar.

HONEST-MEASUREMENT TRAPS

Wipe the jar **dry** out of the freezer (condensation film fakes extra grams). Tare with the same tray, same draft-free spot, both times. An **open** cup would leak grams to evaporation — the lid is non-negotiable.