

Reteach · Connect evidence to the explanation

K4-D-A ·100 g liquid water in a covered cup;26°C surroundings remain constant. Covered liquid water; no active heating/cooling, ice, phase change, direct sunlight or meaningful evaporative cooling. Room, cup, lid and supporting surfaces are at the stated surrounding temperature; it stays constant. Readings represent the sample temperature with a consistent procedure. This is a paper scenario, not apparatus instructions.

One new record

Constructed teaching data: these values were invented for this activity, not collected in an experiment.

Elapsed time (min)	Water (°C)
0	15
5	18
10	20

Fictional response 1: “It reads 15,18 and 20°C, so it changed.” Fictional response 2: “Energy goes from warmer to cooler, so something changed.”

K4-A1. What does each fictional response supply, and what connection is missing? Point to the evidence you would use.

K4-A2. Connect specific readings to the warmer/cooler parts and net energy transfer. Include what the table does not directly measure.

Optional prompts: What changed? Which part was warmer? In which direction is the net transfer? How is that consistent with the sample's change?

Fresh recheck · Connect a new record

K4-D-Ac · Fresh 90 g covered liquid-water sample; all surroundings stay at 23°C. Covered liquid water; no active heating/cooling, ice, phase change, direct sunlight or meaningful evaporative cooling. Room, cup, lid and supporting surfaces are at the stated surrounding temperature; it stays constant. Readings represent the sample temperature with a consistent procedure. This is a paper scenario, not apparatus instructions.

A different start and interval

Constructed teaching data: these values were invented for this activity, not collected in an experiment.

Sample	Start (°C)	After 8 min (°C)
R	35	31

K4-A3. Explain the change using the sample’s readings, the surrounding temperature and net transfer direction. Add a limit.

This record was not used in the intervention. If it was shown earlier, record that exposure; it is then not a fresh check.