

Later check · Reverse the direction

Question: Which sleeve better limits cooling when water begins warmer than the room? This is a paper-data task, not a hot-water activity.

Data T · Three separate matched trials use fresh 100 g samples starting at 40°C in a 22°C room. Matching cups, lids, 20-minute exposure, and thermometer procedure are stated.

Final water temperatures after 20 minutes

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

Trial	No sleeve: final °C	Sleeve P: final °C	Sleeve Q: final °C
1	28	32	36
2	29	33	35
3	28	32	36

T1. Find the temperature drop for each design in at least two trials. Which sleeve better limits cooling across the record?

T2. Explain the direction of net thermal-energy transfer. Why is ‘choose the lowest final temperature’ a poor rule for this goal?

T3. State a bounded conclusion and one unanswered question. What new information or test would help?