

Reteach · A proposal needs a relevant test

Fictional response: “The new seam made the sleeve better. Its water finished lower, so the seam alone caused the improvement.”

Room 22°C; cups/lids and duration match, but water mass and start differ. One comparison, not repeated trials. Covered liquid water; cups/lids, duration, exposure and reading procedure match within and across trials. Surroundings stay at the stated room temperature. No ice, phase change, active heating/cooling, direct sunlight or meaningful evaporative cooling. Accuracy is not supplied.

K6-D-B · Supplied design record

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

Setup	Water g	Start °C	After 15 min °C
Old whole design	100	10	16
New whole design	200	12	15

K6-B1. Calculate each change. What can be described? Why can neither the endpoints nor subtraction isolate a design improvement here?

K6-B2. Plan a more informative comparison. Distinguish comparing old and new complete designs from isolating a seam’s effect. State how you will retain unexpected or missing readings.

Fresh recheck · Whole design or one feature?

Fresh matched 100 g samples starting at 11°C; 23°C room; 15 min. New design changes both seam overlap and layer count; all other conditions match. Covered liquid water; cups/lids, mass, starting temperature, duration, exposure and reading procedure match within and across trials. Surroundings stay at the stated room temperature. No ice, phase change, active heating/cooling, direct sunlight or meaningful evaporative cooling. Each trial uses fresh samples. Accuracy is not supplied.

K6-D-Bc · Supplied design record

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

Paired trial	Old final °C	New final °C
1	17	15
2	16	14
3	17	15

K6-B3. What does the full matched record support? Does it show that seam overlap alone caused the difference? Propose evidence that would address that narrower question.

A fair comparison of complete designs can change more than one feature. An isolated feature claim needs a comparison that separates that feature from the others.