Day 23 · Mass without the mystery container

Which reading belongs to the thing inside?

Useful purpose: Read a marked mass scale and separate an object's mass from a container plus object reading.

1 · Find the starting point

Read 100, 150 and 200; revisit g for mass. Find an unknown part of 90 + something = 310 using earlier additive work.

2 · Prepare a suitable invitation

Adult checks a stable familiar scale, its g setting, readable increments, zero and capacity. Offer safe familiar sealed or dry non-food objects; avoid bodily weighing, dietary comments, powders, medicines, allergens and heavy lifts. No scale? Use the labelled model.

3 · Brief worked model

The MODEL scale has marks every 50 g. An arrow between 100 and 200 at the middle mark reads 150 g. An empty tray is 90 g and tray plus counters is 310 g, so the counters are 310 − 90 = 220 g; 90 + 220 checks 310. If I zero a real scale with the tray already on it, I must record that different procedure.

4 · Guided new try

Together read two labelled increments on a supplied or checked scale. Explain what the zero/tare control changes and what it does not change. Adult operates controls if needed; the child chooses what to compare.

5 · Own attempt

Choose one route. Say whether the reading is total or net, include g and check one result with an addition. Do not claim that a model mass was physically weighed.

6 · Observe and respond

Record interpretation of increments, zero/tare state and part-whole relationship. If an adult positions an object, observe the child's reading and reasoning separately from handling.

Specific next teaching

If the tray is counted as contents, draw a new whole with two parts, 60 g and an unknown making 240 g. If subtraction is secure, compare two safe real readings taken with the same zero procedure.

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Pick a route

1 · Zero detective

What changed when we zeroed it?

With adult-reviewed kit, observe an empty safe tray and then a chosen object. State whether zero was set with or without the tray; compare readings using the same procedure. Directing the adult is fine.

Observe: Clear zero state and unit; no body mass requested.

Next teaching: Repeat with a new familiar safe object and ask why a different tray matters.

Evidence boundary: Actual reading/directing if observed; help recorded.

2 · Packing tray puzzle

Find the contents, not the tray.

MODEL: empty tray 60 g; tray plus paper pieces 240 g. Find contents 180 g and check 60 + 180 = 240. Explain which number includes the tray.

Observe: Part-whole reason, 180 g and correct inverse check.

Next teaching: Use a new drawing with different values before another check.

Evidence boundary: Supplied mass calculation, not weighing.

3 · Scale repairer

Which arrow reading makes sense?

A MODEL scale labels 0, 100, 200 and 300 g with a middle 50 g mark in each gap. Arrow sits at 200 g. A label says 20 g. Repair it and explain the marked interval.

Observe: 200 g, with 50 g gaps understood.

Next teaching: Read a new pointer between labels and let the child request a clearer description.

Evidence boundary: Marked model reading only.

Ordinary aids and full words · Choose another ordinary day

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