

Weight: estimate and weigh in kg and g on a scale

CURRICULUM ALIGNMENT

MEA.MSR.3a

compare, estimate and measure length, weight, capacity, area and volume using appropriate instruments and record and communicate appropriately.

INTERACTIVES Measurement Rulers · display

WHAT THIS LESSON TEACHES

Weight tells us how heavy something is, and we read it on a weighing scale. Light things like an apple are counted in grams (g); heavy things like a bag of sugar are counted in kilograms (kg). 1000 g is the same as 1 kg.

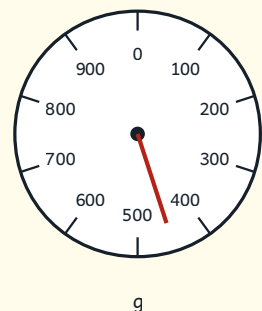
→ an apple is about 200 g

→ a bag of sugar is about 1 kg (1000 g)

MODEL THIS ON THE BOARD

READING A WEIGHT IN GRAMS

- 1 The scale is marked in **100 g** steps from 0 to **1000 g**.
- 2 The needle sits halfway between **400** and **500**.
- 3 Halfway is **450 g**, so the weight is **450 g**.



DISCUSSION STARTER

REFLECT Does hefting an object first help your estimate before you read the scale?

LESSON ARC

Open with a bag of sugar in one hand and an apple in the other — pupils vote on which is the kilogram by heft alone. Demo four readings at the front, pausing at the loaf where the needle lands between marks. Groups then estimate-then-weigh a rubber, pencil case, book and schoolbag, recording both figures side by side on the Weighing Record Sheet. Class Challenge orders four heavier objects across the 1 kg line.

TEACHING MOVES

1. **Getting Started.** Hold the sugar and the apple up, one in each hand, and take three hands-up answers only — no call-outs. When a pupil explains their choice, feed them the word 'heft' and repeat it: 'you felt the weight in your hand — that's hefting.'
2. **Watch and Notice.** Read each needle aloud as it settles — 200, 500, 1 kilogram. Before the pasta goes on, ask the class to predict heavier or lighter than the apple. At the loaf, stop dead: the needle sits between two marks, so point and ask 'which two marks is it between?' and count the small divisions together — this is the reading they get wrong.

3. **Try It Together.** Insist the estimate is spoken before the object touches the scale — the heft-then-check habit is the whole point. Circulate and catch pupils reading the wrong side of the needle; prompt 'which two marks is it between?' Groups with no scales order the four by heft and check against your front reading.
4. **Write Your Estimates in Your Copy.** Glance down the room for the sensible-unit choice, not the number. The tell is 'kg' written beside the rubber — prompt that pupil with 'heavy or light?' No marking; this is copybook practice.
5. **Class Challenge.** Keep the pass-on rhythm brisk — same object order for every group so the class can confirm each reading aloud together at the end. Every group estimates before every weigh; don't let them jump to the scale. The tin and oranges land between marks, so pause the room and count divisions together.
6. **What Did We Notice?.** Listen for pupils naming grams-for-light, kilograms-for-heavy with real examples. Revoice a strong one: 'so we pick the unit that keeps the number sensible — 200 g rather than 0.2 kg.' Head off the idea that the bigger unit means a heavier object.

COMMON MISCONCEPTIONS

⚠ When the needle lands between two marks, pupils read it as the nearer big number — a loaf that's 750 g gets recorded as '1 kg' or 'nearly 1'.

Freeze the class at the scale. Point to the two big marks either side, then count the small divisions past the lower one aloud together: 'between half and one kilogram... one, two, three small marks — 750 grams.' Have a pupil re-read it.

⚠ A pupil writes 'kg' beside the rubber or an apple, reaching for the unit they heard most rather than the one that fits a light object.

Ask 'heavy or light?' then hand them the rubber and the bag of sugar to heft side by side. Light things count in grams; the rubber is grams. Let the difference in their hands settle it before they change the copybook entry.

⚠ Pupils think 1 kg is somehow 'more' than 1,000 g because kilogram sounds like the bigger word. Put the sugar on the scale beside its own 1,000 g label. Same object, same needle — two names for one weight. Say it plainly: 'the kilogram isn't heavier, it's just a bigger unit, so we need fewer of them.'

DIFFERENTIATION

EMERGING

- Give this group only the rubber and the schoolbag first — the clearly-light and clearly-heavy pair — so the grams-versus-kilograms choice is obvious before the middle items arrive.
- Pre-write the four item names in their copybook so they spend their attention on hefting and choosing the unit, not on laying out the page.

DEVELOPING

- After the Weighing Record Sheet, ask them to work out how many grams short of a kilogram the pencil case reads — bridge the reading to the 1 kg = 1,000 g fact.
- Have them predict a reading to within 50 g before each weigh, then check how close the estimate landed.

PROFICIENT

- Narrate a harder variant at the board: 'the dictionary reads 1 kg 300 g — how many grams is that altogether?' Push them to rename across the 1 kg line while the class finishes ordering.
- Send them ahead into the Student Activity Book page rather than moving on alone — the half-kilogram hunt keeps them at their desk if the page isn't ready yet.

✓ **Cross-curricular:** Tie to home economics — pupils read the weights on packets from the lunch bag (crisps in g, a lunchbox of fruit approaching a kg) and sort them by unit.

ANSWER KEY

a) 200 g

Q1: 300 g

b) 650 g

Q2: 750 g

a) **Always** : A kilogram is defined as exactly 1000 grams.

b) **Sometimes** : A big bag is over a kilo, but a small bag may be lighter and read in grams.

c) **Never** : An apple is about 200 g while a bag of sugar is 1000 g, so the apple is always lighter.

d) **Always** : A feather is very light, so grams, the small unit, always suit it best.

EXTENSION SHEET · STRETCH ANSWERS

S1: 17.3 cm

S2: 16.6 cm

S3: 28.6 cm

S4: 4100000 cm

S5: 11 cm

Investigation: Kilogram detective — open-ended; scan pupils' working for valid solution paths rather than a single answer.