



Weight

Mana Maths

Te reo Māori terms



karamu

gram

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kirokaramu

kilogram

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tana

tonne

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toimaha

weight

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Notes & Steps



Key idea

Weight is measured in grams (g) and kilograms (kg). $1000\text{ g} = 1\text{ kg}$. Everyday items have typical weights you can use as benchmarks.

Steps

1. Think about similar everyday items. A paperclip $\approx 1\text{ g}$. An apple $\approx 200\text{ g}$. A bag of sugar $\approx 1\text{ kg}$.
2. Decide: is the item lighter or heavier than a bag of sugar (1 kg)?
3. Choose the unit: grams for small items (under 1 kg), kilograms for heavy items.
4. Check your estimate: does your answer make physical sense?

Weight benchmarks

- ▶ **1 g:** a paperclip, a staple, a grain of rice
- ▶ **100 g:** a chocolate bar, a small apple
- ▶ **200 g:** a cup of flour, a sliced bread loaf
- ▶ **500 g:** a block of butter, a small pillow
- ▶ **1 kg:** a bag of sugar, a litre of water
- ▶ **5 kg:** a school bag full of books
- ▶ **10–30 kg:** a large dog, a small child
- ▶ **50–100 kg:** an adult, a fridge, a sofa

Common mistake

Thinking everything light uses grams. A TV weighs about 5 kg — not 5000 g or 5 g. Always imagine the item compared to a bag of sugar (1 kg).

Notes & Steps



Example 1: a book

A paperback book: is it measured in grams or kilograms? A book feels lighter than a bag of sugar (1 kg) but heavier than an apple (200 g). It weighs about **300–500 g**.

Example 2: a fridge

A fridge: grams or kilograms? Much heavier than 1 kg. Compare to an adult (50–80 kg). A fridge weighs about **50–80 kg**.

Example 3: choosing the right unit

A feather: 2 grams or 2 kilograms? A feather is lighter than a paperclip (1 g). **2 g** is correct. 2 kg would be heavier than a bag of sugar — no feather weighs that much.

Example 4: comparing weights

A cat weighs 4 kg. An apple weighs 200 g. How many apples equal one cat? Convert: $4 \text{ kg} = 4000 \text{ g}$. $4000 \div 200 = 20$ apples.

Start Tasks



1. Convert 3 kg to grams.

2. Convert 5000 g to kilograms.

3. Convert 2.5 kg to grams.

4. Convert 750 g to kilograms.

5. Which is heavier: 3 kg or 2900 g?

6. Which is lighter: 1500 g or 1.2 kg?

7. Convert 1.75 kg to grams.

8. Convert 420 g to kg (2 d.p.).

9. A bag weighs 2.3 kg. Convert to g.

Start Tasks



10. Convert 4 kg to grams.

11. Convert 850 g to kilograms.

12. Convert 0.6 kg to grams.

13. Convert 1250 g to kilograms.

14. Which is heavier:
2.5 kg or 2600 g?

15. Which is lighter:
1800 g or 1.9 kg?

16. Convert 3.4 kg to grams.

17. Convert 920 g to kg
(2 d.p.).

18. A parcel weighs 1.8 kg. Write in g.

Start Tasks



19. Convert 5.2 kg to grams.

20. Convert 330 g to kg (3 d.p.).

21. Convert 0.25 kg to grams.

22. Sort: 1200 g, 0.8 kg, 1.5 kg (lightest).

23. Sort: 2.3 kg, 1900 g, 3 kg (heaviest).

24. How many grams in 0.75 kg?

25. Convert 1.05 kg to grams.

26. Convert 60 g to kg (3 d.p.).

27. A book weighs 0.4 kg. Convert to g.

Build Tasks



1. Order lightest: 1.2 kg, 980 g, 1.5 kg.

2. Order heaviest: 2.3 kg, 1800 g, 2.05 kg.

3. Bag of rice 2.5 kg. 250 g packets: how many?

4. Cake uses 350 g flour. How many from 2 kg?

5. Box of 12 jars each 340 g. Total in kg?

6. 50 boxes each 4.2 kg. Total in kg?

7. 3 eggs each 55 g. Total weight in kg?

8. Rice bag 5 kg + another 3.75 kg. Total g?

9. Box 2.4 kg split into 8 packs. Each in g?

Build Tasks



10. Order lightest: 3.1 kg, 2950 g, 3.05 kg.

11. Order heaviest: 4.5 kg, 4300 g, 4.2 kg.

12. Tray of 24 eggs each 60 g. Total in kg?

13. Bucket of 5 kg sand. 200 g scoops: how many?

14. 36 bags each 25 kg. Total in kg?

15. Mince 3.6 kg. 400 g patties: how many?

16. Dog 28 kg, cat 4.2 kg. Difference?

17. Parcel 2.8 kg. Letter 120 g. How many = parcel?

18. Potatoes 15 kg. Each 150 g. How many?

Build Tasks



19. Order: 600 g, 1.2 kg, 0.9 kg (smallest).

20. Order: 5.1 kg, 4900 g, 5.05 kg (largest).

21. Bag 50 kg split into 200 g portions. How many?

22. 24 jars each 375 g. Total weight in kg?

23. 12 cartridges each 85 g. Total in g?

24. Hotel 10 kg coffee. 8 g sachets: how many?

25. 3.248 kg to nearest 10 g.

26. 8560 g expressed in kg and g.

27. Plank 12.4 kg cut into 8 pieces. Each in g?

Push Tasks



1. 25 crates each 28.4 kg. Total in tonnes?

2. 1200 boxes at 385 kg each. Total in t?

3. Lorry 8.5 t. Pallet 1: 1.8 t, Pallet 2: 2.4 t. Pallet 3 mass?

4. Baker uses 55 kg flour per day. 7 days in kg?

5. Mine 2.4 t ore/hour. In a 40-hour week?

6. 150 passengers, each 23 kg luggage. Total weight?

7. Crate A: 18.5 kg, B: 22.3 kg. Add to reach 50 kg: how many?

8. Silo 12.5 t releases 350 kg/min. Time to empty in min?

9. 20 carriages each 12.4 t. Total in tonnes?

Push Tasks



10. 360 boxes at 15.5 kg each. Total in tonnes?

11. Bag A = 16.2 kg. Remove 385 g. Weight now in kg?

12. Factory fills 500 g jars from 1.2 t vat. How many jars?

13. 12 pallets 850 kg each. Lift rated 10 t: can it take all?

14. Gold bar 12.4 kg. How many 250 g ingots?

15. Plane 25 t. Each crate 365 kg. Can it carry 68 crates?

16. 3 parcels: 3.2, 4.8, 2.9 kg. Total < 12 kg courier limit?

17. Vat 2.5 t fills 50 kg barrels. How many barrels?

18. Truck 18 t + trailer 12 t. 24 crates at 950 kg: overload?

Push Tasks



19. 48 cans each 375 mL. Water 1 g/mL. Total weight in kg?

20. Recipe 2.8 kg: 1.2 kg flour, 850 g sugar. Rest butter in g?

21. 5 layers: each 6 boxes at 24.5 kg. Total in t?

22. Train limit 80 t. 12 carriages at 6.3 t: over or under?

23. Hopper 450 g/s fills 1.35 t bin. Time in seconds?

24. Harvester 1.8 t/h. Grain needed 14.4 t. Hours?

25. Forge: 40 bars each 36.5 kg. Total in t?

26. Ship unloads 250 t at 3.5 t/cycle. Cycles needed?

27. Store 85 t. Sells 320 kg/day. Days until empty?