Chapter 8: Weigh It, Pour It

CONTENTS — 12 exercises · 38 questions

8.1	Let Us Do — Estimate Weight	4 Q
8.2	Let Us Explore — Grams and Kilograms	3 Q
8.3	Let Us Find — Balance the Scale	3 Q
8.4	Let Us Do — Erasers and Weight	3 Q
8.5	Let Us Think — Boxes of Sweet	4 Q
8.6	Let Us Do — Objects Around You	4 Q
8.7	Measuring Capacity — Containers	1 Q
8.8	Let Us Find — Millilitres and Litres	4 Q
8.9	Let Us Do — Filling with 10 ml	5 Q
8.10	Let Us Explore — Items by Capacity	1 Q
8.11	Let Us Find — Water Usage	5 Q
8.12	Water Conservation — Leaking Tap	1 Q

Exercise 8.1 — Let Us Do — Estimate Weight

Q1 Estimate the weight of 6 Bananas and put a tick mark in the appropriate cell (Less than 1 kg / More than 1 kg). Try to verify your guess using a weighing balance.

SOLUTION

6 bananas weigh roughly 600 g to 800 g in total.
600 g to 800 g < 1000 g = 1 kg.
So 6 bananas are most likely less than 1 kg.

Q2 Estimate the weight of 5 Potatoes and put a tick mark in the appropriate cell (Less than 1 kg / More than 1 kg). Try to verify your guess using a weighing balance.

SOLUTION

5 medium potatoes weigh roughly 800 g to 1000 g in total.
This is close to 1 kg; depending on size they may be less than or more than 1 kg.
Estimate: most likely less than 1 kg or about 1 kg — verify with the balance.

Q3 Estimate the weight of 10 Tomatoes and put a tick mark in the appropriate cell (Less than 1 kg / More than 1 kg). Try to verify your guess using a weighing balance.

SOLUTION

10 medium tomatoes weigh roughly 800 g to 1200 g in total.
They may be close to 1 kg; larger tomatoes could be more than 1 kg.
Estimate: likely about 1 kg — verify with the balance.

Q4 Estimate the weight of 15 Onions and put a tick mark in the appropriate cell (Less than 1 kg / More than 1 kg). Try to verify your guess using a weighing balance.

SOLUTION

15 medium onions weigh roughly 1200 g to 1500 g in total.
1200 g > 1000 g = 1 kg.
So 15 onions are most likely more than 1 kg.

Exercise 8.2 — Let Us Explore — Grams and Kilograms

Q1 2 packets of 500 grams = 1000 g = 1 kg. So, 1 packet of 500 g = _____ kg. Or, 500 g = _____ kg.

SOLUTION

2 × 500 g = 1000 g = 1 kg.
Dividing both sides by 2: 1 packet of 500 g = 1 ÷ 2 = 1/2 kg.
So 500 g = 1/2 kg.

Q2 4 packets of 250 grams = 1000 g = 1 kg. So, 1 packet of 250 g = _____ kg. Or, 250 g = _____ kg.

SOLUTION

4 × 250 g = 1000 g = 1 kg.
Dividing both sides by 4: 1 packet of 250 g = 1 ÷ 4 = 1/4 kg.
So 250 g = 1/4 kg.

Q3 10 packets of 100 grams = 1000 g = 1 kg. So, 1 packet of 100 g = _____ kg. Or, 100 g = _____ kg.

SOLUTION

10 × 100 g = 1000 g = 1 kg.
Dividing both sides by 10: 1 packet of 100 g = 1 ÷ 10 = 1/10 kg.
So 100 g = 1/10 kg.

Exercise 8.3 — Let Us Find — Balance the Scale

Q1 How many 250 g daal packets will balance one 500 g daal packet? Draw packets on the empty pan. What did you find? 250 g = _____ of 500 g (1/__, 2).

SOLUTION

We need to find how many 250 g packets equal 500 g.
500 ÷ 250 = 2, so 2 packets of 250 g balance one 500 g packet.
250 g is 1/2 of 500 g.

Q2 Draw arrows to indicate which side the pan balance will tilt for each pair of objects shown (a, b, c, d). One is shown for you.

SOLUTION

A pan balance tilts towards the heavier side. Part a (given example): left pan has 6 soap bars × 200 g = 1200 g; right pan has 1 kg SALT = 1000 g — left is heavier, left pan tilts DOWN ↓, right pan goes UP ↑. Part b: left pan has 1 kg SALT = 1000 g; right pan has 6 chocolate bars × 100 g = 600 g — left (SALT) is heavier, left pan tilts DOWN ↓, right pan goes UP ↑. Part c: left pan has 4 Haldi packets × 50 g = 200 g; right pan has 1 kg SALT = 1000 g — right (SALT) is heavier, right pan tilts DOWN ↓, left pan goes UP ↑. Part d: left pan has 3 Tea Leaves packets × 250 g = 750 g; right pan has 1 kg SALT = 1000 g — right (SALT) is heavier, right pan tilts DOWN ↓, left pan goes UP ↑.

Q3 Match the unit convenient for measuring each object: Kilograms or Grams.

SOLUTION

Match each object to the convenient unit. From the figure: objects measured in Kilograms — a baby (newborn), a stack of books, a wooden table, a refrigerator. Objects measured in Grams — an eraser, a geometry stencil/set square, a paper clip, a leaf. Rule: use grams for light objects (less than about 500 g) and kilograms for heavy objects (1 kg or more).

Exercise 8.4 — Let Us Do — Erasers and Weight

Q1 Each eraser weighs 10 g. How many erasers will weigh the same as a 50 g Haldi packet?

SOLUTION

Each eraser = 10 g.
Number of erasers = 50 g ÷ 10 g = 5.
5 erasers weigh the same as a 50 g Haldi packet.

Q2 Each eraser weighs 10 g. A 100 g soap bar will weigh the same as _____ erasers.

SOLUTION

Each eraser = 10 g.
Number of erasers = 100 g ÷ 10 g = 10.
A 100 g soap bar weighs the same as 10 erasers.

Q3 Each eraser weighs 10 g. _____ erasers will weigh the same as 250 g sugar.

SOLUTION

Each eraser = 10 g.
Number of erasers = 250 g ÷ 10 g = 25.
25 erasers weigh the same as 250 g sugar.

Exercise 8.5 — Let Us Think — Boxes of Sweet

Q1 Mr Das wants 1 kg Kaju-katli packed in boxes of 500 g each. How many boxes are needed?

SOLUTION

Total = 1 kg = 1000 g.
Each box = 500 g.
Number of boxes = 1000 g ÷ 500 g = 2.
Mr Das needs 2 boxes.

Q2 Mrs Fernandes wants 1 kg Kaju-katli packed in boxes of 250 g each. How many boxes are needed?

SOLUTION

Total = 1 kg = 1000 g.
Each box = 250 g.
Number of boxes = 1000 g ÷ 250 g = 4.
Mrs Fernandes needs 4 boxes.

Q3 Mrs Khan wants 1 kg Kaju-katli packed in boxes of 100 g each. How many boxes are needed?

SOLUTION

Total = 1 kg = 1000 g.
Each box = 100 g.
Number of boxes = 1000 g ÷ 100 g = 10.
Mrs Khan needs 10 boxes.

Q4 Mr Patel wants 1 kg Kaju-katli packed in boxes of 50 g each. How many boxes are needed?

SOLUTION

Total = 1 kg = 1000 g.
Each box = 50 g.
Number of boxes = 1000 g ÷ 50 g = 20.
Mr Patel needs 20 boxes.

Exercise 8.6 — Let Us Do — Objects Around You

Q1 Try to lift some objects around you and write the names of three objects that you can lift easily. Estimate and write their weights.

SOLUTION

This is an activity question based on your surroundings.
Examples of objects you can lift easily: a pencil box (~300 g), a water bottle (~500 g), a notebook (~200 g).
Write the names and your estimated weights in the spaces provided.

Q2 Write the names of things that you can lift with a lot of effort. Estimate and write their weights.

SOLUTION

This is an activity question based on your surroundings.
Examples of heavy objects: a school bag full of books (~5 kg), a bucket full of water (~10 kg), a bag of rice (~10 kg).
Write the names and your estimated weights in the spaces provided.

Q3 How many 1 kg packets are in: a. 10 kg, b. 20 kg, c. 50 kg, d. 25 kg?

SOLUTION

a. 10 kg ÷ 1 kg = 10 packets.
b. 20 kg ÷ 1 kg = 20 packets.
c. 50 kg ÷ 1 kg = 50 packets.
d. 25 kg ÷ 1 kg = 25 packets.

Q4 Match the objects in the left column with their estimated weights in the right column: A cat, An elephant, A 1 litre filled bottle, A tiger, An empty gas cylinder, A pen, A leaf, A wooden chair.

SOLUTION

Correct matches from the textbook figure — A leaf: 1 g to 5 g. A pen: 10 g to 15 g. A 1 litre filled bottle: 800 g to 1000 g. A cat: 3 kg to 5 kg. A tiger: 6 kg to 10 kg. An empty gas cylinder: 15 kg. An elephant: 150 kg to 300 kg. A wooden chair: More than 1000 kg (as given in the textbook weight column).

Exercise 8.7 — Measuring Capacity — Containers

Q1 Find bottles and containers that can hold less than 1 litre, exactly 1 litre, or more than 1 litre of water. Write their names in the appropriate columns.

SOLUTION

Less than 1 litre: a small cup, a glass (~200–250 ml), a cold drink can (~300 ml), a small bottle (~500 ml).
1 litre: a 1-litre water bottle.
More than 1 litre: a jug, a bucket, a large pot.
Look at the containers in your home and decide by comparing with a 1-litre bottle.

Exercise 8.8 — Let Us Find — Millilitres and Litres

Q1 How many 500 ml bottles will fill a 1 l bottle? What is 500 ml in litres?

SOLUTION

500 ml + 500 ml = 1000 ml = 1 l.
Number of 500 ml bottles = 1000 ml ÷ 500 ml = 2.
500 ml = 1/2 l.

Q2 How many 250 ml bottles will fill a 1 l bottle? What is 250 ml in litres?

SOLUTION

250 ml + 250 ml + 250 ml + 250 ml = 1000 ml = 1 l.
Number of 250 ml bottles = 1000 ml ÷ 250 ml = 4.
250 ml = 1/4 l.

Q3 How many 100 ml bottles will fill a 1 l bottle? What is 100 ml in litres?

SOLUTION

100 × 10 = 1000 ml = 1 l.
Number of 100 ml bottles = 1000 ml ÷ 100 ml = 10.
100 ml = 1/10 l.

Q4 How many 250 ml in 1/2 l? How many 100 ml in 1/2 l? How many 250 ml in 750 ml? How many 100 ml in 800 ml?

SOLUTION

1/2 l = 500 ml.
250 ml in 1/2 l: 500 ÷ 250 = 2.
100 ml in 1/2 l: 500 ÷ 100 = 5.
250 ml in 750 ml: 750 ÷ 250 = 3.
100 ml in 800 ml: 800 ÷ 100 = 8.

Exercise 8.9 — Let Us Do — Filling with 10 ml

Q1 Find how many 10 ml dosing cups will fill: a 100 ml bottle, a 250 ml glass, a 500 ml vessel, a 1 l bottle.

SOLUTION

a. 100 ml ÷ 10 ml = 10 cups to fill a 100 ml bottle.
b. 250 ml ÷ 10 ml = 25 cups to fill a 250 ml glass.
c. 500 ml ÷ 10 ml = 50 cups to fill a 500 ml vessel.
d. 1 l = 1000 ml; 1000 ml ÷ 10 ml = 100 cups to fill a 1 l bottle.

Q2 Take a 1 ml dropper and find out: a) How many 1 ml droppers will fill a 10 ml dosing cup? b) How many droppers will fill a teaspoon?

SOLUTION

a. 10 ml ÷ 1 ml = 10 droppers will fill a 10 ml dosing cup.
b. A teaspoon holds about 5 ml; 5 ml ÷ 1 ml = 5 droppers will fill a teaspoon.

Q3 Find out how much of these liquids are used at a time: a) Eye drops, b) Honey, c) Cough Syrup, d) Cooking Oil.

SOLUTION

a. Eye drops — less than 1 ml at a time (a single drop is about 0.05 ml).
b. Honey — about 5 ml to 15 ml at a time (a teaspoon to a tablespoon).
c. Cough Syrup — usually 5 ml to 10 ml at a time (one teaspoon, as marked on the bottle).
d. Cooking Oil — about 15 ml to 30 ml at a time when cooking a meal.

Q4 Mr Krishna packages 1 l of perfumed oil in different sized bottles. How many bottles will each customer get? a) Ms Shetty: 500 ml each, b) Mr Muthukumar: 200 ml each, c) Ms Naini: 100 ml each, d) Ms Kannan: 50 ml each.

SOLUTION

1 l = 1000 ml.
a. Ms Shetty: 1000 ml ÷ 500 ml = 2 bottles.
b. Mr Muthukumar: 1000 ml ÷ 200 ml = 5 bottles.
c. Ms Naini: 1000 ml ÷ 100 ml = 10 bottles.
d. Ms Kannan: 1000 ml ÷ 50 ml = 20 bottles.

Q5 Estimate and verify by measuring the capacity of: Water bottle, Glass, Mug, Jug, Bucket, Teaspoon, Bowl.

SOLUTION

This is a hands-on activity. Use the collected bottles (500 ml, 250 ml, 100 ml, 50 ml, 10 ml) to measure each container.

Typical estimates: Water bottle ~500 ml–1 l, Glass ~200–250 ml, Mug ~250–350 ml, Jug ~1–2 l, Bucket ~10–15 l, Teaspoon ~5 ml, Bowl ~300–500 ml.

Fill each container using the measuring bottles and record the actual capacity.

Exercise 8.10 — Let Us Explore — Items by Capacity

Q1 Visit nearby shops and make a list of different items sold in the following quantities: 50 ml, 100 ml, 200 ml, 250 ml, 500 ml, 900 ml.

SOLUTION

50 ml: eye drops, perfume sample, small nail polish.
100 ml: small shampoo, some cold drinks, some medicines.
200 ml: a small juice pack, some flavoured milk packs.
250 ml: a small milk packet, a small juice bottle.
500 ml: a medium water bottle, a small cold drink bottle, some cooking oil.
900 ml: some branded cooking oil bottles.
Visit your local shop and note the actual items sold in each quantity.

Exercise 8.11 — Let Us Find — Water Usage

Q1 How many litres of water do you drink in a day? How did you find out?

SOLUTION

A child drinks about 6 to 8 glasses of water per day.
Each glass holds about 200 ml to 250 ml.
Total per day: 8 × 250 ml = 2000 ml = 2 litres (approximately).
You can find out by counting how many glasses you drink and multiplying by the size of your glass.

Q2 How much water can a crow drink at a time?

SOLUTION

A crow is a small bird; it drinks a very small amount of water at a time.
A crow drinks about 5 ml to 20 ml at a time (a few sips).
This is much less than 1 litre.

Q3 How much milk do you drink in one day?

SOLUTION

A child typically drinks about 200 ml to 500 ml of milk per day.
This is about 1 to 2 glasses of milk.
Write your own answer based on your daily habit.

Q4 How much water does an elephant drink in a day?

SOLUTION

An adult elephant drinks about 150 litres to 200 litres of water per day.
This is far more water than a person drinks in a month!

Q5 How much water may be used in the following activities? a. Water for taking a shower, b. Watering crops in a field, c. Watering flowering plants, d. Washing clothes.

SOLUTION

a. Taking a shower — about 50 litres to 100 litres.
b. Watering crops in a field — thousands of litres per day depending on the field size.
c. Watering flowering plants — about 1 litre to 5 litres per plant per watering.
d. Washing clothes — about 50 litres to 100 litres per wash by hand; less with a machine.

Exercise 8.12 — Water Conservation — Leaking Tap

Q1 Place a container under a dripping tap for an hour. How much water is lost in an hour? How much in a day? How much in a week?

SOLUTION

This is a hands-on observation activity.

A slow drip loses about 10 ml to 50 ml per minute, or roughly 1 litre to 3 litres per hour.

Water lost in a day: if 2 litres per hour × 24 hours = 48 litres.

Water lost in a week: 48 litres × 7 = 336 litres.

Even a small drip wastes hundreds of litres every week — always close taps properly!