Metric Mass and Capacity

Grade 4 – 5 math · measurement

Name: Date: Score: / 26

One prefix, every unit

Mass and capacity work exactly like length, and they use the same prefixes. **Kilo-** always means a thousand and **milli-** always means one thousandth, whether the unit is a gram, a litre or a metre.

So there are really only two facts here: **1 kg = 1000 g** and **1 L = 1000 mL**, with **1 g = 1000 mg** following the same pattern. A student who knows what the prefix means does not have to memorise them separately.

One extra fact is worth knowing because it links the two: **1 mL = 1 cm³** exactly. A litre of water fills a cube ten centimetres on each side. That is not a coincidence — the metric system was designed that way.

The rules

- **1 kg = 1000 g** and **1 g = 1000 mg**.
- **1 L = 1000 mL**.
- **milli-** always means one thousandth, in any unit.
- **kilo-** always means a thousand, in any unit.
- Bigger unit to smaller: **multiply**. Smaller to bigger: **divide**.
- **1 mL = 1 cm³** exactly, which is why a litre of water fills a 10 cm cube.

Part A — Convert (12 marks)

3 kg → _____ **g**	**2000 g** → _____ **kg**
5 L → _____ **mL**	**750 mL** → _____ **L**
1.5 kg → _____ **g**	**400 g** → _____ **kg**
0.25 L → _____ **mL**	**6000 mg** → _____ **g**
2.5 g → _____ **mg**	**1250 mL** → _____ **L**
0.8 kg → _____ **g**	**90 mL** → _____ **L**

Part B — Does it make sense? match each thing to a sensible measurement (6 marks)

Object	Measurement
A bag of apples	
A paperclip	
A can of soup	

A dose of medicine	
A bath full of water	
A grain of salt	

☐ 1 g ☐ 150 L ☐ 2 kg ☐ 400 mL ☐ 5 mL ☐ 5 mg

Part C — Word problems show your working (8 marks)

1. A recipe needs 250 mL of milk. How many of these can be made from a 2 L carton?

2. A parcel holds 6 books weighing 450 g each. What is the total mass in kilograms?

3. A jug holds 1.5 L. A glass holds 200 mL. How many full glasses can be poured, and how much is left?

4. A tablet contains 500 mg of medicine. How many grams are in a bottle of 20 tablets?

Metric Mass and Capacity — Answer Key

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Part A — Convert

1. 3 kg → **3000 g**
2. 2000 g → **2 kg**
3. 5 L → **5000 mL**
4. 750 mL → **0.75 L**
5. 1.5 kg → **1500 g**
6. 400 g → **0.4 kg**
7. 0.25 L → **250 mL**
8. 6000 mg → **6 g**
9. 2.5 g → **2500 mg**
10. 1250 mL → **1.25 L**
11. 0.8 kg → **800 g**
12. 90 mL → **0.09 L**

Part B — Does it make sense?

1. A bag of apples → **2 kg**
2. A paperclip → **1 g**
3. A can of soup → **400 mL**
4. A dose of medicine → **5 mL**
5. A bath full of water → **150 L**
6. A grain of salt → **5 mg**

Part C — Word problems

1. **8**
   2 L = 2000 mL. 2000 ÷ 250 = 8.
2. **2.7 kg**
   6 × 450 = 2700 g. 2700 ÷ 1000 = 2.7 kg.
3. **7 glasses, 100 mL left**
   1.5 L = 1500 mL. 1500 ÷ 200 = 7 remainder 100.
4. **10 g**
   20 × 500 = 10 000 mg. 10 000 ÷ 1000 = 10 g.