1) Complete the table showing the metric measurement units and abbreviations:
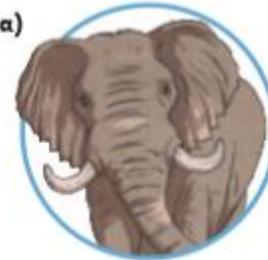
Length	millimetre (mm)
	_____ (cm)
	metres (_____)
	_____ (_____)
Mass	_____ (g)
	_____ (_____)
	_____ (t)
Capacity and Volume	_____ (ml)
	_____ (_____)

2) Give the most appropriate unit of measurement:

- height of a door
- volume of water in a glass
- length of a pencil point
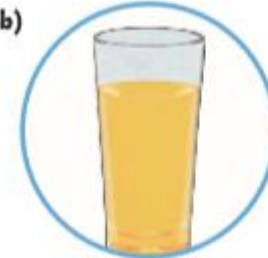- mass of a person
- length of a reading book
- mass of a rubber

3) Choose the best estimation for each question.

a)
- ○ 5kg
- ○ 5 tonnes
- ○ 500g
- ○ 0.05 tonnes

b)
- ○ 2ml
- ○ 2l
- ○ 20l
- ○ 0.2l

c)
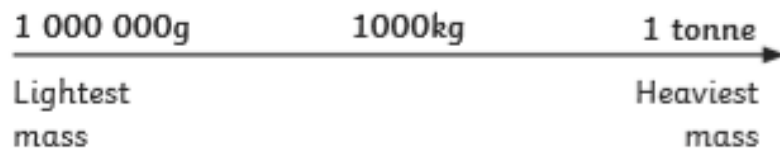- ○ 18m
- ○ 1.8m
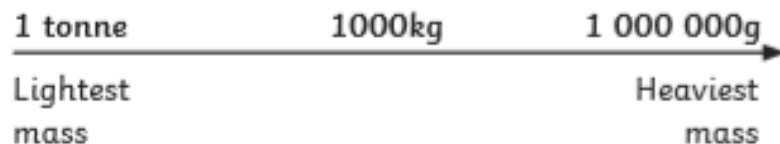- ○ 18mm
- ○ 18 000cm

1)

1 000 000g = 1000kg = 1 tonne

Hamza and Megan have ordered the masses incorrectly on the diagrams below. Explain why you think they chose to order the masses in that way.

Hamza

1 000 000g	1000kg	1 tonne
Lightest mass		Heaviest mass

Megan

1 tonne	1000kg	1 000 000g
Lightest mass		Heaviest mass

2) Are these statements always, sometimes or never true? Prove it!

a) A distance measured in kilometres is longer than a distance measured in metres.

b) An empty bottle has a capacity of 1l. The same bottle, when half full, has a volume of 1l.

c) The mass of a mouse will be shown in grams.

1) Daniel's dad is double the height of a desk. Daniel's dad is approximately $\frac{1}{4}$ of the height of his house. Estimate how tall Daniel's house is.

2) An average walking speed is 85m a minute. Daniel takes 30 mins to walk to school every day.

The distance Daniel currently walks to school is about $\frac{1}{9}$ of the distance between his primary school and his brother's secondary school.

Estimate how far Daniel lives from his brother's school.

3) If the average walking speed is 85m a minute, estimate how far you could walk if you walked continuously for:

a) 6 hours

b) A whole day

c) A week

d) A year

ANSWERS

1)

Length	millimetre (mm)
	centimetres (cm)
	metres (_m_)
	kilometres (km)
Mass	grams (g)
	kilograms (kg)
	tonnes (t)
Capacity and volume	millilitres (ml)
	litres (l)

2) The height of a door could be measured in metres (m) or centimetres (cm).
The volume of water in a glass would be measured in millilitres (ml).
The length of a pencil point would be measured in millimetres (mm).
The mass of a person would be measured in kilograms (kg).
The length of a reading book would be measured in centimetres (cm).
The mass of a rubber would be measured in grams (g).

3)
   a) An elephant weighs approximately 5 tonnes.

   b) An drinking glass holds approximately 0.2l.

   c) A man has a height of approximately 1.8m.

1) Hamza has ordered the masses based on the size of the units of measurement. He has assumed that tonnes are always the heaviest mass and grams are the lightest mass.

Megan has ordered the mass based on the size of the number given and ignored the units. Therefore she has made 1 000 000g the heaviest as it has the largest number size and has made 1 tonne the lightest mass as it has the smallest number size.

All of these measurements are equal, so they should be at the same point on the diagrams.

2) a) Sometimes true. For example, 1km is longer than 1m; however, 1500m is longer than 1km.

   b) Never true. Capacity measures the amount an object can contain and volume measures the amount an object actually contains. The volume of the water in a half-full litre bottle is half a litre, not a whole litre.

   c) This is sometimes true. Although we would normally use grams to show the mass of a small object, it is also possible to show a mouse's mass in kgs and even tonnes, although we would need to make use of a longer, decimal number.
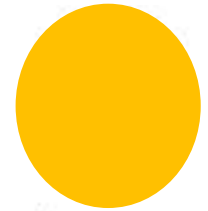
1) Average height of a desk is 0.9m. So Daniel's dad would be 1.8m which can be rounded to 2m to make an estimate.

2m × 4 = 8m

The house is approximately 8m.

2) 30 × 85m = 2550m or 2.5km

Daniel walks approximately 2500m or 2.5km to primary school. To estimate the distance to his brother's secondary school: 2.5 × 9 = 22.5km

3) Assuming no rest breaks are taken. All answers are approximations only.

   a) 30km

   b) 120km

   c) 840km

   d) 43 800km