

Kilograms and kilometres

- 1 The bar model shows that 1 kg is equal to 1,000 g.
Use the bar models to complete the conversions.

1 kg
1,000 g

a)

1 kg	1 kg	1 kg
1,000 g	1,000 g	1,000 g

3 kg = g

b)

1 kg	1 kg	1 kg	1 kg	1 kg
1,000 g	1,000 g	1,000 g	1,000 g	1,000 g

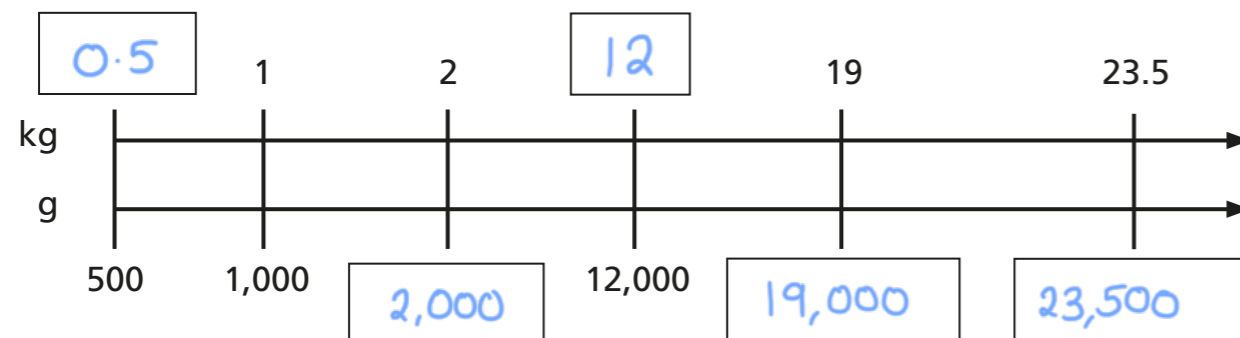
5 kg = g

c)

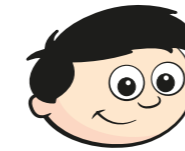
1 kg	1 kg	1 kg	1 kg
1,000 g	1,000 g	1,000 g	1,000 g

kg = 4,000 g

- 2 Fill in the missing values to convert between kilograms and grams.



- 3 Dexter and Whitney are converting 27.5 kg into grams.



Dexter

I'm going to use bar models.

Whitney



I'm going to use a double number line.

Whose method is more efficient? Whitney

Explain your answer.

b) Complete the conversion. 27.5 kg = g

- 4 Tommy and Dora are converting 4 km into metres.
Here are their workings.

Tommy

1 km	1 km	1 km	1 km
1,000m	1,000m	1,000m	1,000m

4 km = 4,000 m

Dora

	1	4
km		
m	1,000	4,000

4 km = 4,000 m

Whose method do you prefer? Various

Explain your answer.

5 Complete the conversions.

- a) $18 \text{ kg} = 18,000 \text{ g}$ e) $11.5 \text{ km} = 11,500 \text{ m}$
 b) $18 \text{ km} = 18,000 \text{ m}$ f) $41,200 \text{ g} = 41.2 \text{ kg}$
 c) $21,000 \text{ g} = 21 \text{ kg}$ g) $100 \text{ g} = 0.1 \text{ kg}$
 d) $32,500 \text{ m} = 32.5 \text{ km}$ h) $100 \text{ km} = 100,000 \text{ m}$

6 Complete the conversions.

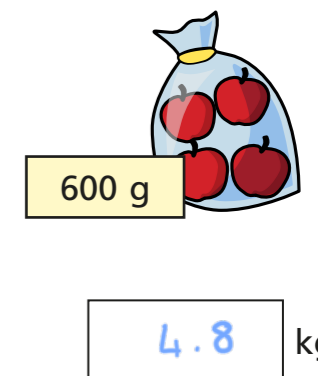
- a) $\frac{1}{2} \text{ kg} = 500 \text{ g}$ c) $\frac{3}{6} \text{ kg} = 500 \text{ g}$
 $\frac{1}{4} \text{ kg} = 250 \text{ g}$ $\frac{12}{24} \text{ kg} = 500 \text{ g}$
 $\frac{3}{4} \text{ kg} = 750 \text{ g}$ $\frac{99}{198} \text{ kg} = 500 \text{ g}$
 b) $\frac{1}{10} \text{ km} = 100 \text{ m}$ d) $\frac{20}{20} \text{ km} = 1,000 \text{ m}$
 $\frac{1}{5} \text{ km} = 200 \text{ m}$ $\frac{1}{20} \text{ km} = 50 \text{ m}$
 $\frac{3}{10} \text{ km} = 300 \text{ m}$ $\frac{19}{20} \text{ km} = 950 \text{ m}$

7 Write $<$, $>$ or $=$ to compare the measurements.

- a) $0.5 \text{ km} < 600 \text{ m}$
 b) $3.7 \text{ kg} > 3,200 \text{ g}$
 c) $5,000 \text{ g} + 2 \text{ kg} = 5.5 \text{ kg} + 1,500 \text{ g}$
 d) $\frac{7}{10} \text{ km} + \frac{3}{10} \text{ km} + 965 \text{ m} > 817 \text{ m} + 1 \text{ km}$

8 A bag of apples weighs 600 g.

How much do 8 bags of apples weigh?
Give your answer in kilograms.

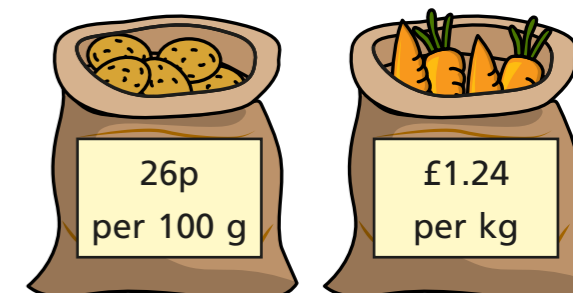


9 Ron buys 3.8 kg of potatoes

and 1,250 g of carrots.

He pays with a £20 note.

How much change does he get?



$$3.8 \text{ kg} = 3,800 \text{ g} = 38 \times 100 \text{ g}$$

$$38 \times 26\text{p} = \text{£}9.88$$

$$1,250 \text{ g} = 1.25 \text{ kg}$$

$$1.25 \times \text{£}1.24 = \text{£}1.55$$

$$\text{£}20 - (\text{£}9.88 + \text{£}1.55) = \text{£}8.57$$

£ 8.57

10 Dora runs 200 m in 32 seconds.

If she runs at the same speed, how long will it take her to run 5 km?

$$\begin{array}{l} 200 \text{ m} \quad 32 \text{ seconds} \\ \times 5 \left\{ \begin{array}{l} 1 \text{ km} \quad 160 \text{ seconds} \\ 5 \text{ km} \quad 800 \text{ seconds} \end{array} \right. \times 5 \end{array}$$

13 minutes and 20 seconds

Is Dora likely to be able to keep up this speed?