

Math on the Job... p. 204

What is the total cost to ship her envelopes???

a) \$ 2.06

b) $\frac{2200 \text{ g}}{5} = 440 \text{ g ea}$
 $\$3.50 \times 5 = \17.50

c) $0.8 \text{ Kg} = 800 \text{ g}$
 $\frac{800}{2} = 400 \text{ g each}$
 $\$3.25 \times 2 = \6.50

Total Cost

$$\begin{array}{r} \$2.06 \\ 17.50 \\ 6.50 \\ \hline \$26.06 \end{array}$$

5.3 Mass in the Systeme International

- **Mass** - a measure of the quantity of matter in an object.
 - "the amount of *stuff*".
 - in the SI system the kilogram is the measure of mass.
 - * use of the pound is commonly used as a measure of mass.
- **Weight** - a measure of the force of gravity on an object.
 - in the SI system the Newton is the measure of weight.

Complete Activity 5.5 on p. 205



1000 grams (g) = 1 kilogram (kg)

1000 milligrams (mg) = 1 gram

1 tonne (t) = 1000 kilograms

NOTES:

- 'kg' is the mass of one litre of water at 4°C
- a tonne (t) IS NOT THE SAME as a ton (tn).
- a tonne is often referred to as a 'metric ton'.

DISCUSS THE IDEAS

GROSS VEHICLE WEIGHT RATING

Truckers and others who transport loads in their vehicles need to be aware of their **Gross Vehicle Weight Rating (GVWR)**. The GVWR is the maximum recommended weight of a vehicle, including everything it is carrying: the vehicle itself, cargo, passengers, other accessories, and fuel. (The base curb weight is the weight of the vehicle with a full tank of fuel) The difference between these two weights is the cargo capacity.

You and your friend rent a truck with a 3016 kg GVWR and a base curb weight of 2255 kg, so that you can help your friend haul a load of bricks for a construction project. The combined weight of you, your friend, and your accessories is 160 kg. If one brick weighs 2.7 kg, how many bricks can you truck carry?

$$\begin{array}{r} \text{Cargo capacity} = 3016 \\ - 2255 \\ \hline 761 \text{ Kg} \end{array}$$

$$\begin{array}{r} 761 \\ - 160 \\ \hline 601 \text{ Kg} \end{array}$$

$$\frac{601 \text{ Kg}}{2.7 \text{ Kg brick}} = 222.59 \text{ bricks}$$

They can carry 222 bricks.

EXAMPLE 1:

A recipe for cornbread calls for 120 g of flour, 170 g of cornmeal, and 50 g of sugar. If you want to double the recipe, what is the total weight of the dry ingredients?

Solution is...

$$\begin{array}{r} 120 \\ 170 \\ 50 \\ \hline 340 \text{ g} \end{array}$$

$$340 \text{ g} \times 2 = 680 \text{ g}$$

EXAMPLE 2:

Mrs. MacAllister is baking apple pies. According to her recipe, she needs 6 pounds of apples. The bag of apples she bought only shows the weight in kilograms. Can you help her out???

Solution is... 2.7 kg

Remember... 1 kg = 2.2 lbs

$$6 \text{ lbs} \times \frac{1 \text{ kg}}{2.2 \text{ lbs}} = 2.\overline{72} \text{ Kg}$$

NOTE: To estimate a conversion from pounds to kilograms you can think of a pound being about 1/2 kg.

EXAMPLE 3:

The cost of bananas at the Irving is \$0.49/lb, but you see an advertisement for bananas on sale at Sobey's for \$1.03/kg. **Which is a better buy?**

Solution is... Sobey's

$$\frac{\$0.49}{\text{lb}} \times \frac{2.2 \text{ lb}}{1 \text{ kg}} = \$1.08/\text{kg}$$

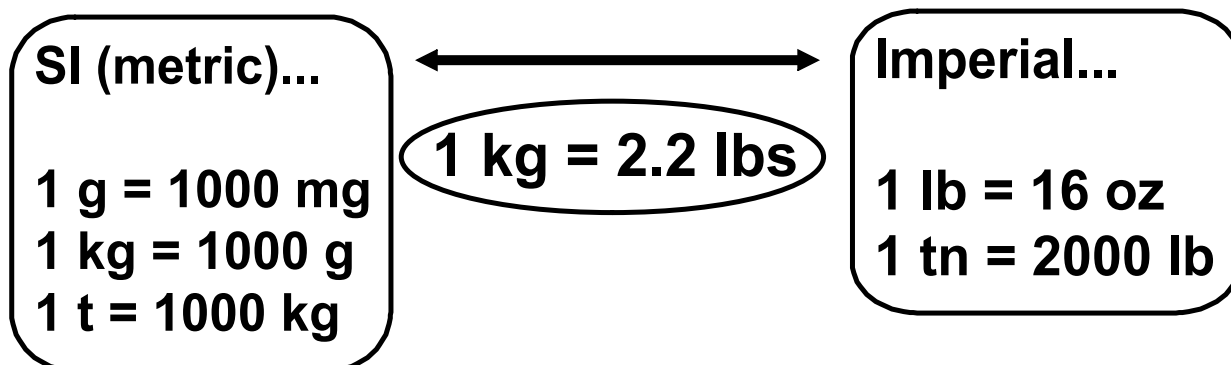
Sobey's is cheaper.

Work on these...

5.3 Worksheet - Mass in a SI System.docx



Remember...



Section 5.3 - Mass in a SI System

PRACTISE YOUR NEW SKILLS**HOMWORK QUESTIONS???**

1. Convert the following weights.

a) $2.5 \text{ t} = \underline{\hspace{2cm}} \text{ kg}$

c) $125 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

e) $1 \text{ t} = \underline{\hspace{2cm}} \text{ lb}$

b) $2.8 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

d) $2.4 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

f) $3.6 \text{ tn} = \underline{\hspace{2cm}} \text{ kg}$

2. How many tons are in 1 tonne?

3. What is the total weight in grams of 3 packages of nuts weighing 1.2 kg, 0.75 kg, and 1.5 kg?

4. Win weighs 78 kg and his dog weighs 18 kg. If his truck weighs 1.9 t and there are 5 boxes of books each weighing 9.8 kg in the truck, what is the total weight of the truck, including Win, his dog, and the books?

5. Karen is making a batch of potato soup. She needs 8 potatoes, and each potato weighs about 375 g. How many pounds of potatoes does she need?

6. If a 10-lb bag of grass seed costs \$75.45, how much does the seed cost per kilogram?

7. How many quarter-pound (before cooking) hamburgers can you make from 1.9 kg of ground beef?

PRACTISE YOUR NEW SKILLS, P. 200

1. a) 2500 kg b) 2800 g
 c) 0.125 kg d) 0.0024 kg
 e) 2200 lb f) 3272.4 kg

2. 1 tonne (t) \approx 1.1 tons (tn)

3. 3450 g

4. 2045 kg

5. 6.6 lb

6. \$16.61/kg

7. 16 hamburgers

HOMEWORK...

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NEED ANSWERS???

Section 5.3 Detailed Solutions.pdf



Attachments

5.3 Worksheet - Mass in a SI System.docx

Section 5.3 Detailed Solutions.pdf