Curriculum Outcome

M1 Demonstrate an understanding of the Système International (SI) by describing the relationships of the units for length, area, volume, capacity, mass and temperature.

M2 Demonstrate an understanding of the Imperial system by: describing the relationships of the units for length, area, volume, capacity, mass and temperature.

Student Friendly: The relationship between degrees Celsius and degrees Fahrenheit

EXAMPLE 1:

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

$120\,g + 170\,g + 50\,g$

$= 340\,g$

$\times\ 2$

$680\,g$

$\downarrow$

$0.68\,Kg \times \frac{2.2\,lb}{1\,Kg}$

$= 1.496\,lb$

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 and by how much?**

Solution is...

SOLUTIONS...

Name : _____ Score : _____

Teacher : _____ Date : _____

Converting English and Metric

1)	16.53	pounds	=	7.5	kilograms
2)	0.63	ounces	=	18	grams
3)	13.5	pounds	=	6.12	kilograms
4)	15	ounces	=	~~425.24~~ 426.14	grams
5)	35.27	pounds	=	16	kilograms
6)	12.5	pounds	=	5.67	kilograms
7)	8	ounces	=	226.8	grams
8)	0.51	ounces	=	14.5	grams
9)	8.82	pounds	=	4	kilograms
10)	0.65	ounces	=	18.5	grams
11)	47.4	pounds	=	21.5	kilograms
12)	2.5	ounces	=	70.87	grams
13)	0.34	ounces	=	9.5	grams
14)	0.69	ounces	=	19.5	grams
15)	20	pounds	=	9.07	kilograms
16)	17	pounds	=	7.71	kilograms
17)	6.5	pounds	=	2.95	kilograms
18)	15.43	pounds	=	7	kilograms
19)	8.5	ounces	=	240.97	grams
20)	22	ounces	=	623.69	grams

Geometry, Measurement & Finance 10 Math-Aids.Com

1. Choose the correct item to go with each measure of mass.

a) About 1 gram

i) a brick ii) a penny iii) a book

b) About 1 kilogram

i) this textbook ii) a dime iii) an MP3 player

c) About 1 gram

i) a thumbtack ii) a cat iii) a chair

d) About 1 tonne

i) a bull ii) two men iii) a laptop computer

How much to you think this chair weighs?

2. Read each statement and judge whether the estimate makes sense. If you disagree with the statement, justify your solution by estimating the approximate weight of the object.

a) A loaded truck has a mass of about 500 kg. No

b) A small boy has a mass of about 100 g. No 100g = 0.1 kg

c) A hockey puck has a mass of about 2 kg. No 2 kg = 4.4 lb (which is almost bag of sugar)

d) A headache tablet has a mass of 1 mg. Yes

e) Two loaves of bread have a mass of about 1 kg. Yes

f) A piece of gum has a mass of about 1 g. Yes

g) A two-tonne truck weighs about 2200 pounds. No 2200lb= 1tonne

h) A five-pound roast weighs about the same as a 5 kg roast. No 1kg= 2.2 lb
x 2
2kg = 4.4 lb

3. Drugs come in different strengths, so the doctor decides what dosage to give you based on your symptoms, age, and weight. The drug penicillin V has a strength of 250 mg per pill, and you have been prescribed a dosage of 0.5 g three times a day for five days.

   a) How many pills will you have to take at one time?

   b) How many milligrams of the drug will you take over the five days?

   c) How many kilograms of the drug is this amount?

a) $250\,mg \times \frac{1\,g}{1000\,mg} = 0.250\,g$

$\frac{0.5\,g}{0.25\,g} = 2\ pills$

b) $250\,mg \times 2\ pills \times 3\ per\ day \times 5\ days$

$= 7.5\,g$

or

$7500\,mg$

c) $7.5\,g \times \frac{1\,kg}{1000\,g} = 0.0075\,kg$

Convert tonnes to kg:

$0.5\,t \times \frac{1000\,kg}{1\,t} = 500\,kg$

6:7:5

6% → 0.06 × 500 = 30 kg (Nitrogen)

7% → 0.07 × 500 = 35 kg (Phosphorus)

5% → 0.05 × 500 = 25 kg (Potassium)

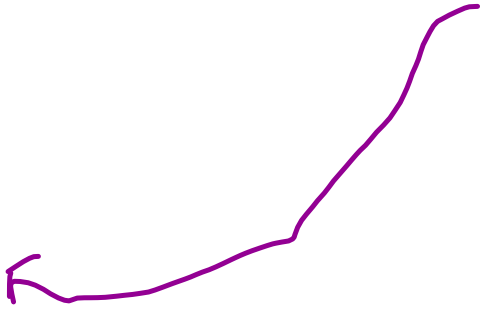
3:2:1

5. It is estimated that the air in a glass tank weighs 1.29 g a litre. The tank is 2.5 metres by 3.4 metres by 4.1 metres. What is the weight of the air in the tank?

$V = l \times w \times h$

$V = 2.5\text{m} \times 3.4\text{m} \times 4.1\text{m}$

$V = 34.85\text{m}^3$



$34.85\text{m}^3 \times \frac{(100\text{cm})^3}{(1\text{m})^3} = 34\,850\,000\text{cm}^3$

HINT

1 litre equals 1000 cm³.

$34\,850\,000\text{cm}^3 = 34\,850\,000\text{mL} = 34\,850\text{L}$ (÷1000)

or

$34\,850\,000\text{cm}^3 \times \frac{1\text{L}}{1000\text{cm}^3 \text{ or } 1000\text{mL}} = 34\,850\text{L}$

Finally, calculate the weight of the air. Air weighs 1.29 g/L.

$34\,850\text{ L} \times \frac{1.29\text{ g}}{1\text{ L}} = 44\,956.5\text{ g}$ or 45 kg.

6. You have a recipe for a cheese dip that calls for $1\frac{1}{4}$ lb of Stilton cheese. The store has packages that weigh 253 g, 421 g, 97 g, 398 g, and 124 g. Which packages will you purchase so that you have enough Stilton at the lowest cost?

$$1.25 \text{ lb} \times \frac{1 \text{ kg}}{2.2 \text{ lb}} \times \frac{1000 \text{g}}{1 \text{ kg}} = 568 \text{ g}$$

Could choose:

253 g + 398 g = 651 g

or

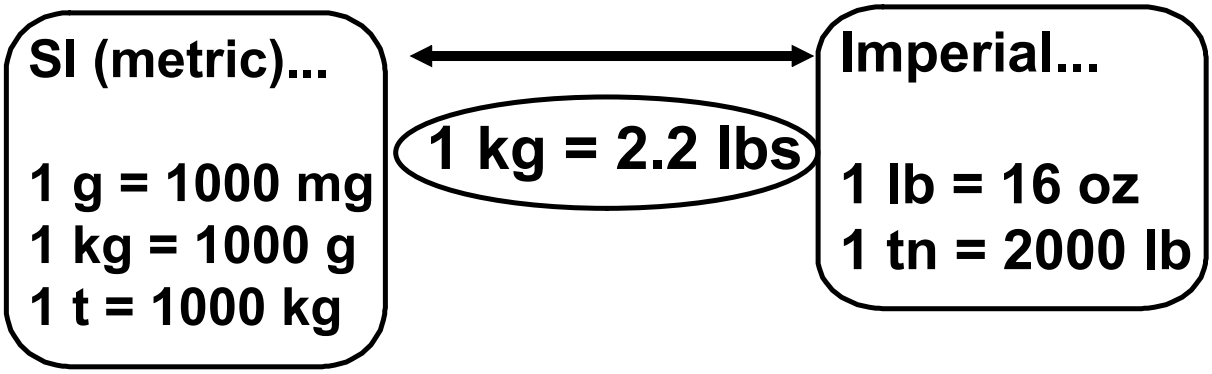
398 g + 124 g + 97 g= 619 g.

Quiz tomorrow!

In Class Assignment

5.3 Worksheet - Mass in a SI System.docx

Remember...



Section 5.3 - Mass in a SI System

PRACTISE YOUR NEW SKILLS

HOMEWORK QUESTIONS???

1. Convert the following weights.

a) 2.5 t = _____ kg

b) 2.8 kg = _____ g

c) 125 g = _____ kg

d) 2.4 g = _____ kg

e) 1 t = _____ lb

f) 3.6 tn = _____ 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) ≈ 1.1 tons (tn)
3. 3450 g
4. 2045 kg
5. 6.6 lb
6. $16.61/kg
7. 16 hamburgers

Attachments

5.3 Worksheet - Mass in a SI System.docx