# Making Conversions

During class today you will learn how to convert a unit of volume to a unit of weight.

From your textbook... Page 212. Read "Math on the Job". Once you reach the bottom portion attempt to answer the questions about bushels of barley.

- **Bushel:** - is a measurement of **volume (equal to about 2220 $in^3$)**
  - abbreviated as '**bu**'

1 t = 45.9 bu

**Question a)** Note the conversion factor for converting bushels of barley to metric tonnes is 45.9 Also, be aware of the difference in weight between a loaded truck and an empty truck.

$12\,100 - 5550 = 6550\ kg$

$6550\ kg \times \frac{1\ t}{1000\ kg} = 6.55\ t$

$6.55\ t \times \frac{45.9\ bu}{1\ t} = 300.645\ bu$

**Question b)** Use your answer from (a) to determine the correct price.

$\frac{\$3.59}{1\ bu} \times 300.645\ bu = \$1079.32$

## Math on the Job Solution

a) Calculate the weight of the barley

12,100 kg - 5,500 kg = 6,550 kg

Convert kg to tonnes

6550 kg / 1000 kg/t = 6.55 t

Convert tonnes to bushels

6.55 t X 45.9 bu/t = 300.65 bu (rounded off)

About 301 bushels were loaded onto the truck.

b) 300.65 bu X $3.59/bu = $1079.33

## One More Example...

How many bushels (bu) of flax seed are there in 2.4 tonnes, if the conversion factor is 39.368 bushels/tonne? $1\,t = 39.368\,bu$

$$2.4\,t \times \frac{39.368\,bu}{1\,t} = 94.4832\,bu$$

$$= 94.5\,bu$$

Solution:

2.4 t X 39.368 bu/t = 94.5 bu

# Try this one!

Laila bought 5 bushels of sunflower seeds. If the conversion is bu/t, what is the weight of sunflower seeds: 73.487

a) in kilograms?
b) in pounds?

Remember: 1000 kg = 1 t
1 kg = 2.2 lbs

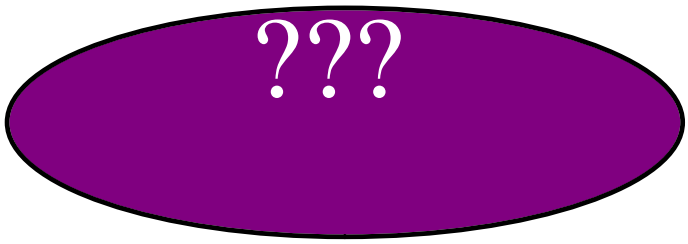
a) $5\ bu \times \frac{1\ t}{73.487\ bu} \times \frac{1000\ kg}{1\ t} = 68.0\ kg$

b) $68.0\ kg \times \frac{2.2\ lbs}{1\ kg} = 149.6\ lbs$

a) 67.9 kg
b) 149 lbs

How many ounces are in a gram...
let's make a conversion factor!

$1\ oz \times \frac{1\ lb}{16\ oz} \times \frac{1\ kg}{2.2\ lb} \times \frac{1000\ g}{1\ kg} = 28.4\ g$




1 oz = 28.4 g

**EXERCISE:** Convert the following...

a) 56 g = 1.97 oz $56g \times \frac{1\ oz}{28.4\ g} = 1.97 oz$

b) 120 lbs = 54.55 kg $120\ lbs \times \frac{1\ kg}{2.2\ lbs} = 54.54\ kg$

c) 34 oz = 965.6 g $34 oz \times \frac{28.4\ g}{1\ oz} = 965.6\ g$

## What does a conversion factor tell you???

**EXAMPLE #1...**

The conversion factor for white beans is 36.744 bu/t, and for corn it is 39.368 bu/t. Which weighs more per unit volume?

White Beans

**EXAMPLE #2**

Alphonse is making chicken kebabs for 14 people. His recipe suggests about 7 oz of chicken per person. At the grocery store, the weight of the chicken is labelled in kilograms. How much chicken does Alphonse need to buy?

Remember: 1 kg = 2.2 lbs
1 oz = 28.4 g

$7\text{ oz} \times 14 = 98\text{ oz}$

$98\text{ oz} \times \frac{28.4\text{ g}}{1\text{ oz}} \times \frac{1\text{ kg}}{1000\text{ g}} = 2.8\text{ kg}$

2.8 kg

# Homework:

Worksheet - Converting Weights.docx

**EXAMPLE #3:**

A crane can lift a maximum of 5 t. Sandstone weighs about 150 lb per cubic foot, and a container contains 70 cubic feet of sandstone. Can the crane be used to load the container onto a train?

Limit

$\frac{150\ lbs}{ft^3} \times 70\ ft^3 = 10\,500\ lbs$

$10\,500\ lbs \times \frac{1\ kg}{2.2\ lbs} \times \frac{\quad t}{1000\ kg} = 4.77\ t$

$= 4.8\ t$

4.8 t so yes

**EXAMPLE #4:**

Josephine is sending a gift of a bottle of maple syrup that weighs 3 lb, and 3 packages of smoked salmon that each weigh 100 g. If the package's total weight is less than 2 kg, she can ship it at a cheaper rate. Will she be able to do so?

Limit

$3\ lbs \times \frac{1\ kg}{2.2\ lbs} = 1.\overline{36}\ kg$

$300\ g \times \frac{1\ kg}{1000\ g} = 0.3\ kg$

$1.66\ kg$

She can use the cheap rate

1.7 kg so yes

**Homework:**

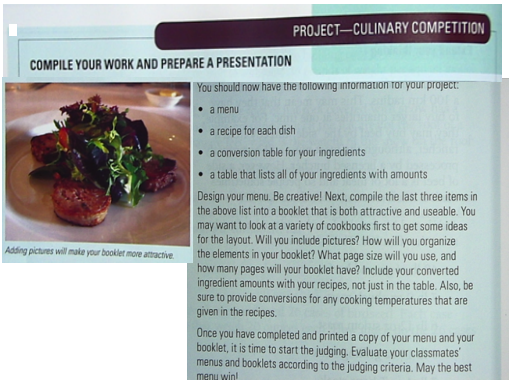
Page 215: Questions 1 - 7

Note: #4... 1 L of water = 1 kg

# Need Answers???

Section 5.4 Detailed Solutions.pdf

Chp 5.4 - Extend Your Thinking #8 p. 217 Solutions.docx



PROJECT—CULINARY COMPETITION

COMPILE YOUR WORK AND PREPARE A PRESENTATION

Adding pictures will make your booklet more attractive.

You should now have the following information for your project:

- a menu
- a recipe for each dish
- a conversion table for your ingredients
- a table that lists all of your ingredients with amounts

Design your menu. Be creative! Next, compile the last three items in the above list into a booklet that is both attractive and useable. You may want to look at a variety of cookbooks first to get some ideas for the layout. Will you include pictures? How will you organize the elements in your booklet? What page size will you use, and how many pages will your booklet have? Include your converted ingredient amounts with your recipes, not just in the table. Also, be sure to provide conversions for any cooking temperatures that are given in the recipes.

Once you have completed and printed a copy of your menu and your booklet, it is time to start the judging. Evaluate your classmates' menus and booklets according to the judging criteria. May the best menu win!

Geo_Mea_Fin 10 - Chp. 5 Judging Criteria.docx

**PRESENTATION DATE:** _____
***order will be drawn that day**

**PRESENTATION CRITERIA:**
- can be of any form... video/powerpoint/SMART Notebook/poster/drama/etc...
- looking at a 2 to 3 minute advertisement of your "award winning meal".
- be sure to include some information on your country and meal theme.

**COMPONENTS TO BE PASSED IN**: (after the presentation)
- completed checklist
- menu
- recipe booklet
- conversion table
- shopping list

**EVALUATION:**
- presentation
- required components
- self reflection
- judging criteria
- * *Bonus:* most creative group name!

* The judge(s) will decide upon the most appealing meal and members of that group are asked to bring in sample(s) to share with their classmates.

# **Conversions**... Mass <-> Volume

- materials have different conversion factors due to their density.
- we will have to use technology to help us out...

http://www.convert-me.com/en/convert/weight2volume

http://www.onlineconversion.com/weight_volume_cooking.htm

# EXTRA PRACTICE???

## 5.4 - Practice Problems.doc

READY FOR THE TEST ON... FRIDAY!!!

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Geo_Mea_Fin 10 - Conversion Tables and Formula Sheet (Chp4_5).docx

Chapter 5 Sample Test.pdf

*** Corrections... MC #3 → 7.2°C
OR #22 → 8.3°C ≈ 80.6°F

**p. 219 Practise Your New Skills... #1 - 10**

Chapter 5 Mass, Temperature, and Volume, Practice Your New Skills.pdf
**(SOLUTIONS)**

Attachments

5.4 - Practice Problems.doc

Geo_Mea_Fin 10 - Chp. 5 Judging Criteria.docx

Chp 5.4 - Extend Your Thinking #8 p. 217 Solutions.docx

Geo_Mea_Fin 10 - Conversion Tables and Formula Sheet (Chp4_5).docx

Chapter 5 Sample Test.pdf

Chapter 5 Mass, Temperature, and Volume, Practice Your New Skills.pdf

Section 5.3 Mass in the Systeme International.pdf

Worksheet - Converting Weights.docx

Section 5.4 Detailed Solutions.pdf