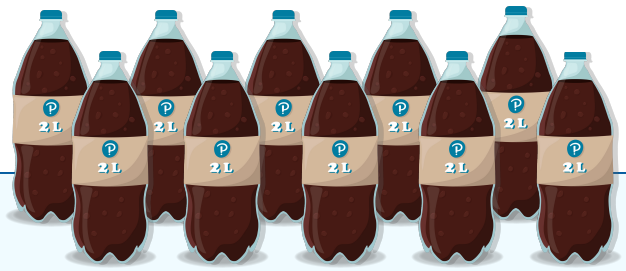
TOPIC: ENERGY IN FOOD

Defining Calories

- **Metabolism:** the set of chemical _____ that break down and use food molecules.
  - Energy released in food through metabolism is measured in _____.
- There is more than __ definition of the word "calorie".
  - **c**alorie: energy needed to heat 1 g (ml) of H_2O 1ºC.
    - Not typically used in discussing _____.
  - **C**alorie or ____calorie (kcal): equal to _____ **c**alories.
    - Energy needed to raise 1 _____ of H_2O 1ºC.
    - Nutrition _____ use "**C**alorie".

NOTE: This course will always use "**C**alories" or "Kcal"



2000 Calories is enough energy to raise ten 2-liter bottles from freezing to _____.

PRACTICE

What is the relationship between a "calorie", a "Calorie", and a "Kcal"?

a) A "calorie" is equal to 1000 "Calories". A "Kcal" is equal to a "calorie".

b) All three units can be used interchangeably.

c) A "Kcal" and a "Calorie" can be used interchangeably; A "calorie" is equal to 1000 "Calories".

d) A "Kcal" is equal to a "Calorie". A "Calorie" is equal to 1000 "calories".

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Calculating Calories in Food

- Different _____nutrients contain different amounts of energy (Calories).
  - Carbohydrates: ___ Calories per gram
  - Fats: ___ Calories per gram
  - Proteins: ___ Calories per gram
  - Alcohol: ___ Calories per gram
- We can use these values to determine the Calories in food.

In 30 g of cheese, we have:

Nutrient	Grams	Calories per gram	Calories
Carbohydrates	**1 g**		
Fats	**8 g**		
Proteins	**7 g**		
Total Calories			

EXAMPLE

Use the information about the number of Calories per gram of each macronutrient to fill in the nutrition labels below.

Oatmeal	
Total Calories per Serving	
Carbohydrates	27 g
Fats	2.5 g
Proteins	5 g

Roasted Peanuts	
Total Calories per Serving	
Carbohydrates	6 g
Fats	15 g
Proteins	7 g

Low-fat Refried Beans	
Total Calories per Serving	155
Carbohydrates	24 g
Fats	3 g
Proteins	

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PRACTICE

For the following nutrition label, use the mass of each macronutrient to calculate the total Calories per serving.

a) 84 Calories.

b) 99 Calories.

c) 124 Calories.

d) 139 Calories.

Total Calories per Serving	
Carbohydrates	10 g
Fats	8 g
Proteins	3 g

PRACTICE

According to the following nutrition labels, which has more total Calories?

a) Food #1

b) Food #2

c) The number of Calories is equal.

Food #1	
Serving Size	13 g
Total Calories per Serving	?
Carbohydrates	3 g
Fats	9 g
Proteins	1 g

Food #2	
Serving Size	22 g
Total Calories per Serving	?
Carbohydrates	20 g
Fats	2 g
Proteins	0 g