ENERGY INTAKE

How to calculate the energy you consume

Going to work, doing exercise, spending time with beloved. Everything we do in our day-life needs an energy support to be accomplished. Basic activity like breathing, thinking and digest also needs energy. But where does this energy come from? If this question could seem difficult, the answer is very simple: from food! Consider that it could have happened that you skipped meals and felt unloaded, tired, out of power but you felt a little better immediately after eating something. This could be a little proof about the link between our diet and energy. The food we eat consists of macronutrients which give us energy in the form of calories, as a matter of fact, the scientific definition of calories says are units of energy that a food or drink provides. In this situation we will know how to calculate the energy intake based on the food we eat.

This situation can be linked to the "IT DOESN'T NEED TO BE SWEET", "DON'T MESS AROUND WITH FATS" situations by having the possibility to comprehensively address a mathematical pathway related to nutrition, a topic that closely affects us in our everyday life.

Overview "ENERGY INTAKE"

Calculate the energy intake

Context
health and care
everyday life

Content
Multiplication and division
Addition and subtraction

Target group (incl. necessary prior skills and competences)

Adults and young adults

Outcomes and results

Development of a method for calculating calories

Cognitive processes
Analysing situations
Processing informations
Managing situations

Dispositions

Self- confidence
Flexibility
Beliefs

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Main information

Content	Natural numbers Decimal numbers Multiplication, division, addition and subtraction
Target group	Adults and young adults Learners • Recognize and understand simple, common qualitative representations and use the information to make decisions • Cope with one-step, simple operations such as counting, performing basic arithmetic operations to cope with everyday situations • Are curious and sensitive to health issues
Learning intention	Numeracy for personal and private purposes
Duration	2 UE+
Material and resources	Picture cards
Group size	from 5 to 10 learners/ small group work: 2 to 3 learners
Problem statement	As we know, food provides us with the energy we need to accomplish all our daily activities through calories. Once we understand that the value of calories intake is based on the amount and type of macronutrients, it will be easy to estimate the total intake during the day. This estimate can serve to have an awareness of caloric intake useful for later considerations in terms of health and well-being.
Learning outcomes and results	Learners know how much the energy value of various macronutrients is, and with simple calculations they get the total intake.

Working plan

Time (lessons)	Description of content/activities	Material	Methodical and didactic information[1]
30'	**1.Discover** Learners will be presented with material that will first briefly inform them about the concept of the calorie, and then move on to the caloric value to which each gram of ingested macronutrients corresponds. *The topic, with good probability, may have already been addressed by the learners. It is suggested to start this stage by investigating knowledge about it and trying to stimulate a discussion/comparison*.	Presentation (see appendix 1)	Questioning Explicit teaching
45'+	**2. Calculate the calories** In this phase work with cards showing the meals taken by a person over the course of the day. The learners, knowing the value of the conversion between gram and calories, will have to add up all the information obtained to get the amount of calories that diet provides. *If it is planned to carry out the other activities in the food and health strand, it is suggested to use the cards showing the nutrition tables used in those cases. The meal combinations developed by the learners during the other situations can also be used, so as to reiterate the bonding concept that this theme has (the quantity and quality of food ingested affects energy intake).*	Cards (see appendix 2)	Working in small groups Collaborative learning Metacognitive strategies
(60')	**2.1 Calculate the calories:Alternative** Possibly, the activity can be expanded or replaced by having learners investigate the amount of calories they		Individual work

[1] for description and explanation of kinds of tasks, HITS and other background information please consult the teachers'/user's guide

	take in during the day. For this phase, it is necessary to give them some time to write down their diet intake (a couple of typical days may suffice) so that the calculation activity involves them directly, and if they are interested in the topic, they may be more aware of it.		
30'	**3.Discussion of work done and information gained** At the end of this course, a discussion and comparison activity related to the mathematical tools used is conducted.		Feedback

Appendix 1

Phase DISCOVER

Valore energetico dei macronutrienti per grammo:

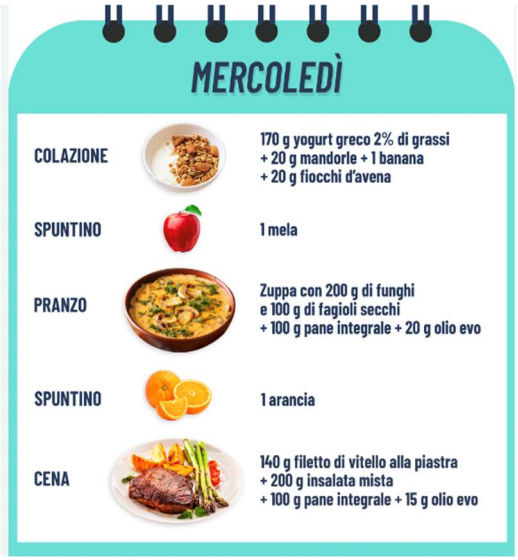
1 g carboidrati= 4 kcal. 1 g proteine = 4 kcal. 1 g grassi = 9 kcal.

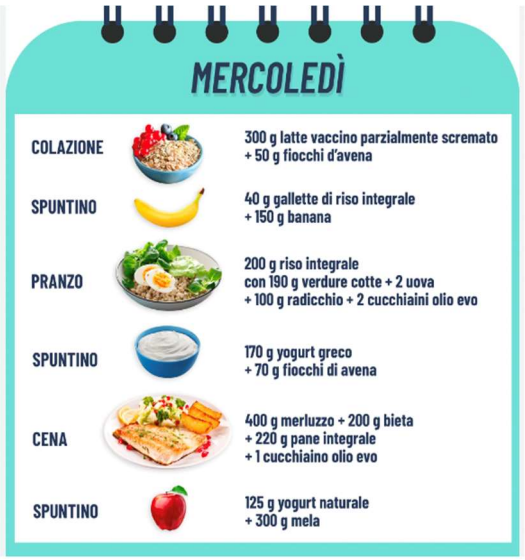
Appendix 2

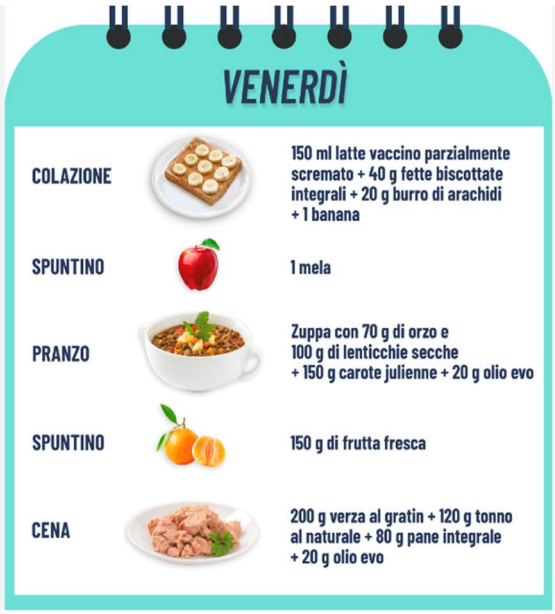
Phase CALCULATE THE CALORIES

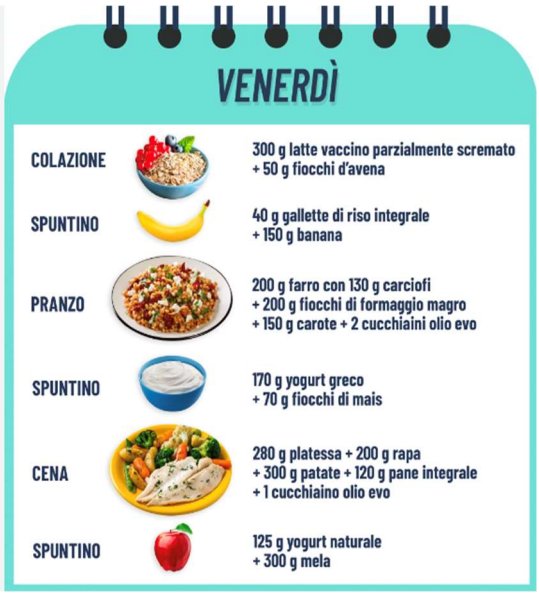
For each diet reported by the cards it would be good to also find the relevant nutritional tables, or alternatively start from the nutritional tables used in the other situations and construct diets.

In case learners have prepared in the previous situation's combinations of meals, one can those.

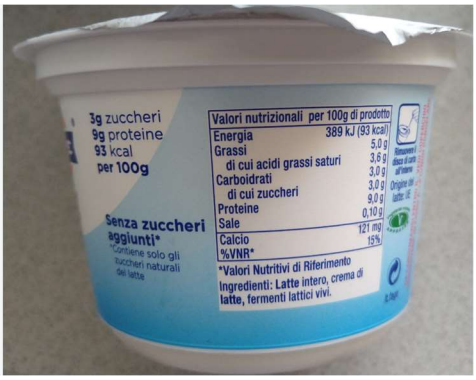


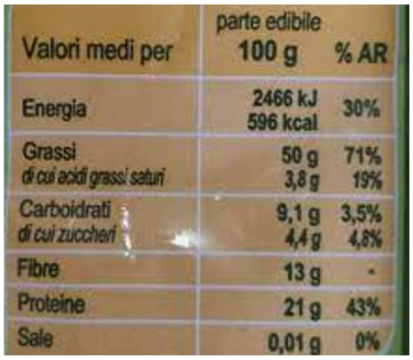


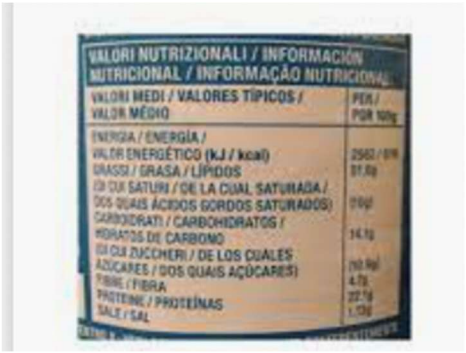


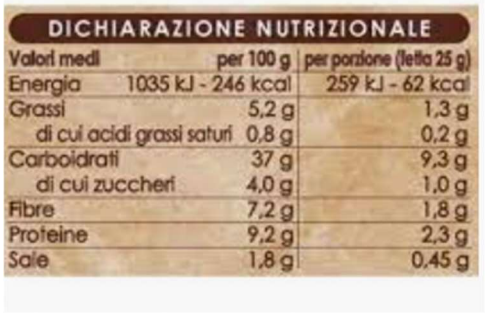


Source: Dieta da 2000 kcal: il menù settimanale (my-personaltrainer.it) [30.06.2023]

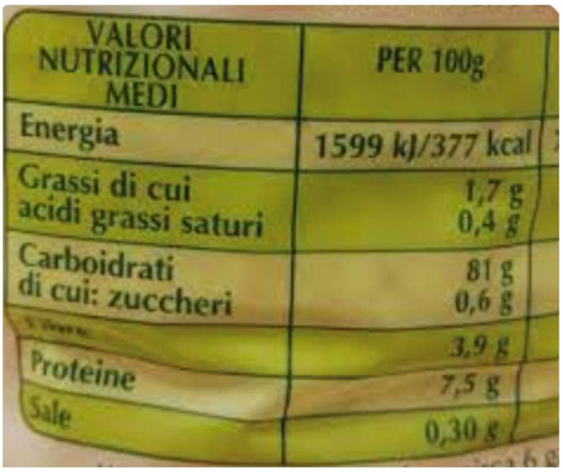








Source: Fage Total 5% Grassi - 170 g (openfoodfacts.org) [30.06.2023]



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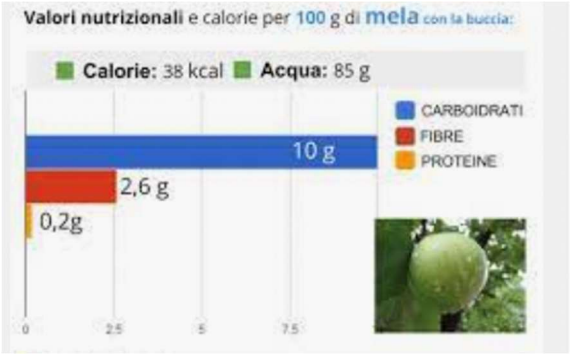

Source:

Mela: proprietà, calorie, valori nutrizionali, benefici e controindicazioni (benessere360.com)

[30.06.2023]