Getting the dose right:

The importance of the right quantity

Often drugs, both for us and for our animal friends, are formulated in amounts of standard active ingredient but, of course, depending on the needs and specific health conditions, the amount to be taken may be different.
Unfortunately, cases of taking an incorrect dosage of the drug are often reported, which can lead to more or less serious consequences. With the application of some mathematics, you can avoid incurring these potentially dangerous situations.

Overview "THE IMPORTANCE OF THE RIGHT QUANTITY"

How to calculate the correct dosage of a drug

Context
Health and care
Everyday life

Cognitive processes
Managing situations
Processing information
Problem solving

Target group (incl. necessary prior skills and competences)

Learners are adults and young adults with basic knowledge of mathematics and attentive to health and prevention issues.

Content
Quantity and number
Using a calculator

Dispositions

Math anxiety
Flexibility

Outcomes and results

Learners will know how to calculate the correct dosage of a drug following the doctor's instructions.

Co-funded by the European Union

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Main information

Content	Quantity and numbers (including decimal numbers); Unit of measurement (weight and capacity); Using a calculator.
Target group	Learners are adults and young adults with basic knowledge of mathematics and attentive to health and prevention issues. Basic knowledge of mathematics includes simple operations, proportionality concept and knowledge of the submultiples of the units of measurement of weight and capacity.
Learning intention	Numeracy for personal and private purposes
Duration	Approx. 3 hours
Material and resources	Picture cards depicting some drugs and medical/veterinary prescription.
Group size	Range from 4 to 12 learners
Problem statement	Often drugs, both for us and for our animal friends, are formulated in amounts of standard active ingredient but, of course, depending on the needs and specific health conditions, the amount to be taken may be different. Sometimes the doctor or veterinarian in the prescription may give some additional information, or at the time of purchase at the pharmacy, the same pharmacist may advise how to take the correct dosage (for example "half tablet/two sachets/one and a half tablet"). But in case of lack of this valuable information, it is up to us to be careful and correctly calculate the amount to be taken. Indeed, cases of taking an incorrect dosage of the drug are often reported, which can lead to more or less serious consequences.
Working questions	— What units of measurement can indicate the amount of medication? — Have you ever had a prescription indicating the active ingredient and not the trade name of the drug? — Has it ever happened that only the dosage of medication to be taken was indicated in the prescription or veterinary prescription? — How to do when a certain dosage is prescribed that does not match the amount present in a capsule or sachet of medication?
Learning outcomes and results	Learners will know how to calculate the correct dosage of a drug.

Working plan

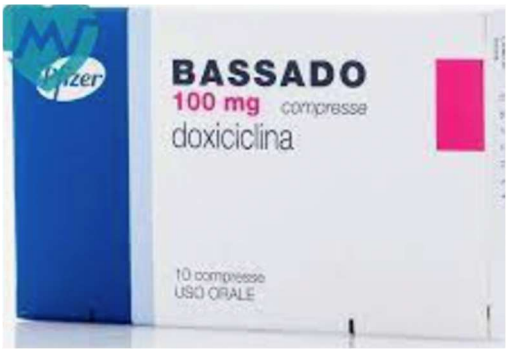
Time (lessons)	Description of content/activities	Material	Methodical and didactic information[1]
40'+	**1. Discover** In this first phase the learners are presented the situation and they are asked the questions present among the "*Working Questions*". *[In this way, based on their answers, the teacher will understand what and how much to deepen the concepts related to the units of measurement of weight and capacity (including the submultiples, very frequent in dosages of drugs) and the proportionality between quantities.]*	Projector; Board ; Pictures of drug packs in which the amount present per tablet/bustine is reported	Questioning; [If needed explicit teaching]
60'	**2.Calculate the correct dosage** Learners will perform this activity in pairs, reversing roles from time to time. In turn, a learners will submit to the companion the card containing a drug and the corresponding prescription; by analyzing the data, the companion receiving the prescription must communicate in what amount and how he would take or administer (in case he/she takes care of a child or an animal) the drug. A verification phase follows in which the two components of the pair compare and verify the correctness of the calculation together. *At this stage it is particularly important that the professor is*	Picture cards with medicines and medical prescriptions; Calculator	Collaboration Hands on learning

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

	willing to intervene in case of doubt.		
20’	**3.Discussion** The activity ends with a moment for the learners to share their impressions.		Feedback

Appendix

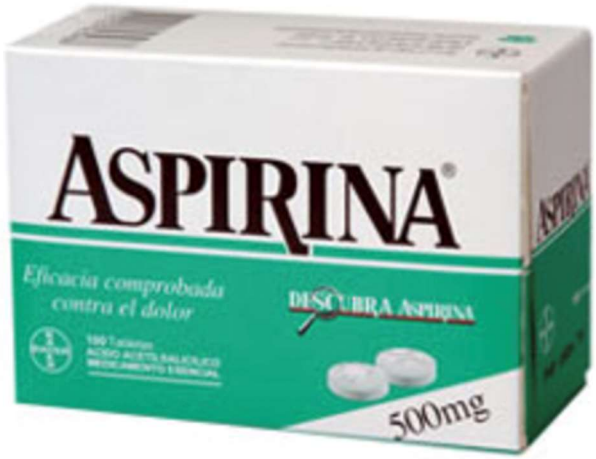
SOME EXAMPLES OF PICTURE CARDS WITH DRUGS AND PRESCRIPTION



DOXICICLINA
200 mg

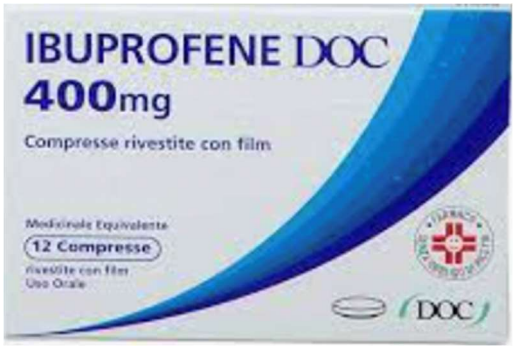
DOXICICLINA
50 mg

DOXICICLINA
150 mg



ASPIRINA
250 mg

ASPIRINA
500 mg



IBUPROFENE
200 mg

IBUPROFENE
600 mg

IBUPROFENE
400 mg

This material was produced in the Erasmusplus project Numeracy in Practice, projectnumber 2021-1-NL01-KA220-ADU-000 026 292. In this project, 11 partners in 11 countries worked together in designing, evaluating and improving the materials. All materials can be found on the website (www.cenf.eu).