PERFECT DILUTIONS

Mastering everyday dilutions for safe and effective use

Dilutions are not just chemistry lab stuff!
In fact, sometimes we can have to do it at home.
Whether you are treating yourself to diluite a concentrated detergent or to dye your hair, it is necessary to know how to determine the correct quantity for the product to work properly.

Overview "PERFECT DILUTIONS"

Calculate the correct amount for a perfect dilution.

Context
Everyday life

Cognitive processes
Managing situations
Processing information
Mathematising

Target group (incl. necessary prior skills and competences)

Adults and young adults knowing the meaning of ratio.

Content

Quantity and number

Outcomes and results

Learners are able to calculate the correct amount for a dilution.

Dispositions

Self- confidence
Collaboration

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Main information

Content	Natural numbers, Decimal numbers, Multiplications and divisions.
Target group	Adults and young adults; Learners are curious and knowing the meaning of ratio.
Learning intention	Numeracy for personal and private purposes
Duration	1UE
Material and resources	Picture cards
Group size	Range from 2 to 16 learners
Problem statement	In daily life it happens to have to do dilutions. In the kitchen, for example, to prepare some dishes or cocktails, but also in the care of the home, as in the case of concentrated detergents or the dilutions necessary for wall painting. The applications are different and numerous so it is important to know how to properly perform the dilutions without compromising the effectiveness of the product in question.
Working questions	- What is a dilution? - When we use dilutions in daily life? - What is a ratio? - How do you calculate a ratio?
Learning outcomes and results	The students are able to calculate the correct amount for a dilution.
Reference to National Qualification Frame	

Working plan

Time (lessons)	Description of content/activities	Material	Methodical and didactic information[1]
20' +	1.Discover The teacher introduces the activity asking learners if they know what a dilution is and if they know when to use it. In this phase, all the contexts in which dilutions are used to emerge the frequency of applications are collected on the blackboard.	Blackboard	Questioning; discussion
45'	2. Ratio and exercise Learners are offered exercises with ratio and they are asked to carry out them independently. After this part, we discuss together the methods used to solve the exercises and about the concept of mathematical ratio. *Sharing strategies can be a useful tool.*	Exercises	Hand on learning; Discussion.
20'	3.Final discussion Students discuss the activity carried out, reconsider the concept of dilution and review the development of related problems.		Discussion

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

Appendix

2. Ratio and excercise

[SOME EXAMPLES]

a) DEVI USARE 36g DI TINTA PER CAPELLI DA USARE IN RAPPORTO CON L'ACQUA OSSIGENATA 1:1,5. QUANTA ACQUA OSSIGENATA TI SERVE?

b) PER DIPINGERE LA CAMERA DA LETTO USI UNA PITTURA DA DILUIRE AL 30% CON ACQUA. SE HAI 5 LITRI DI PITTURA, QUANTA ACQUA AGGIUNGI?

c) HAI A DISPOSIZIONE 5ml DI TEQUILA E VUOI PREPARARE IL PERFETTO MARGARITA. SAPENDO CHE LA RICETTA VEDE GLI INGREDIENTI IN RAPPORTO 7(tequila):4 (triple sec):3(lime) DI QUANTI ml DI LIQUORE E DI SUCCO DI LIME HAI BISOGNO?

d) DEVI RIUTILIZZARE UN FLACONE VUOTO DI DETERSIVO DA 1 LITRO. QUANTO DETERSIVO CONCENTRATO VERSI SAPENDO CHE ANDRà DILUITO 1:2 CON L'ACQUA?

e) UNA SOLUZIONE VIENE PREPARATA DILUENDO IL CONCENTRATO IN RAPPORTO 1:3 CON L'ACQUA. QUANTA ACQUA TI SERVE PER DILUIRE 150 ML DI CONCENTRATO?