TRAVELING WITH MATHS!

How to quickly calculate the currency exchange rate

There are countries in the world using a currency different from euro. To avoid nasty surprises in the bank account, let's learn how to estimate some prices by changing the currency.
In 2023 technology helps us on different fields; there are many apps developed for calculate in very short time the currency exchange, but we have to remember that our brain can do it by itself, needing more time for sure and the support of a calculator.
In this situation we will see the very simple mechanism to get the right currency just knowing its value, using some critical approach and discovering a few methods to do an estimate of the amount.

Overview "TRAVELING WITH MATHS"

Context:
Travel

Calculate the currency exchange

Cognitive processes
Managing situations
Processing informations

Content
Multiplication and division
Decimal numbers

Target group (incl. necessary prior skills and competences)

Adults

X2

Outcomes and results

Development of a method for calculating the currency exchange (without using apps or online support)

Dispositions
Flexibility
Curiosity

Co-funded by the European Union

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Main information

Content	Natural numbers Decimal numbers Multiplication and division
Target group	Adults and young adults Learners • recognize and understand simple, common quantitative representations and use the informa4on to make decisions • cope with one-step, simple operations such as counting, performing basic arithmetic operations to cope with everyday situations curious to other culture and fascinated by travel
Learning intention	Numeracy for personal and private purposes
Duration	3UE +
Material and resources	Table (some value currency), and picture cards
Group size	from 5 to 10 learners/ small group work: 2 learners
Problem statement	If you have the chance of travel around the world, and in some cases, out of Europe you will find different value from our well-known euro. Also, the the cost life could be different from ours, so to avoid unpleasant situations and excessive spending it is important to know how to calculate the exchange value.
Learning outcomes and results	Learners will understand how to calculate the exchange value, knowing when they have to multiplicate or divide the numbers in order to get the right results. Learners also get used to do that calculation with a critical approach that is important to analyze the results, especially when using the calculator or when someone else give them the final value. If there are learners with good ability on mind calculation, the activity could be integrated with some tricks to do some approximation of the value.
Reference to National Qualification Frame	Optional (country's decision)

Working plan

Time (lessons)	Description of content/activities	Material	Methodical and didactic information[1]
60’	**1.Discover and Analyze:** Using a table created by the teacher with the main currencies chosen, the various exchange rates are observed; this is followed by an activity to **analyze** and evaluate the relationships between the numbers *(when is the euro worth less/more than the other currency? what do we expect to get from the exchange rate? a higher or lower number?)* The learners work in pairs.	Table with some currencies (see appendix 1)	Questioning Collaborative learning
60’	**2. Calculate the exchange:** The teacher gives a brief explanation of what calculations need to be done to switch from the euro to a different currency and vice versa. Then learners will work independently on some proposed exercises, again using the table with the various exchange rates as support.	Table Exercises developed by the teacher	Explicite teaching, Hand on learning
45’	**3. Checking:** In pairs learners will do a control activity using cards prepared by the teacher. This activity does not require calculation, but they will simply take turns asking each other if the card presented by their partner reports a consistent exchange value or if they are facing a "catch."	Cards (see appendix 2)	Metacognitive strategies, Feedback

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

60’	**[4.eventually. Tricks to do approximation]:** Depending on the learners' level/skill in mental calculation, the teacher can present some tricks to mentally reach an estimate of the changed currency. (A couple of cases will be given in the appendix)	Material developed by the teacher (see appendix 3)	Explicite teaching, Metacognitive strategies

Appendix 1

1. Discover and Analyze

Example of a table with some currencies :

(of course, exchange rates are constantly changing, and it is important to remind learners of this, so they do not have to learn the rates by memory, but simply understand and use the calculation mechanism)

	USD	EUR	GBP	JPY	CHF	CAD	AUD	NZD
EUR	1,0991	1	0,8605	156,03	0,9824	1,4464	1,6202	1,7700

Appendix 2

3. Checking:

Some examples of cards for the game

(the learners will check the information written on the cards using exchange rates given by the teacher)

1500 € corrispondono a 3000 £ (GBP)

360 € corrispondono a 518 $ (CAD)

470 CHF corrispondono a 520 €

Se cambi 2000$ (USD) al tasso 1,18 ottieni 1200 €

Appendix 3

4. Some tricks to do approximation

The following are just some suggestion/examples of "math tricks" to mentally reach an estimation of changed currency:

- *STERLINE - EURO: exchange rate 0.89 to 1. The difference between the values is close to 10 percent in favor of the pound, so just add a tenth to the price reported with the British currency*
- *BATH - EURO: exchange rate 38 to 1. To approximate it may be easier to divide the price by 50. The same result can be more easily achieved by first dividing the figure by 100 and then multiplying by 2. This method provides a simple approximation in the absence of a calculator.*