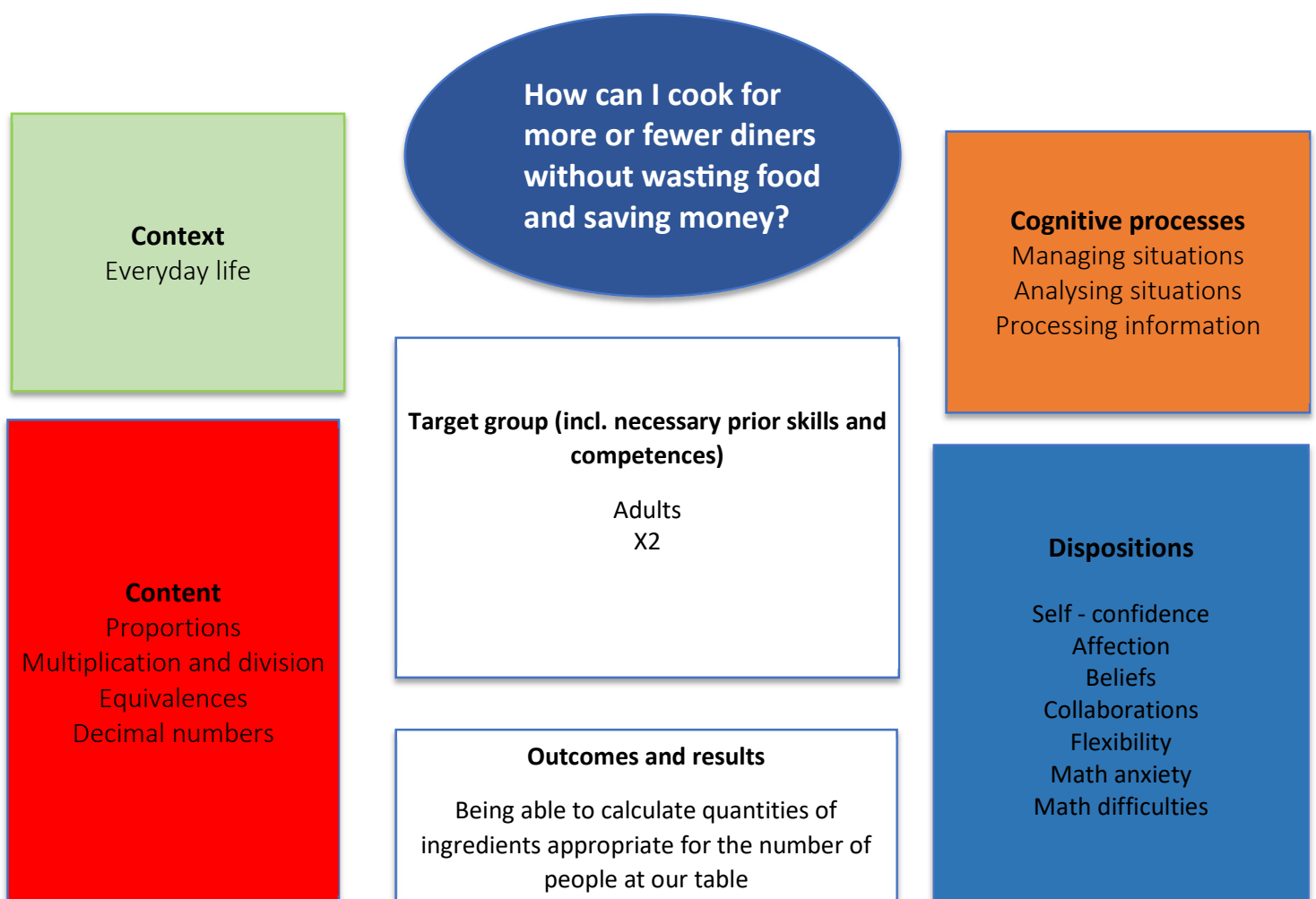


CHANGING PLANS!

Calculate how to adapt a recipe based on the numbers of diners.

To cook tasty dishes to share with family and friends we often use recipe books or consult recipes online. Often the ingredients listed do not perfectly fit the number of people we are cooking for. To avoid wasting food unnecessarily and consequently money, this common situation can be solved by using math. Knowing the proportions and knowing how to use them allows us to adjust the quantities of ingredients to be used to the number of our diners, saving money and getting tasty, well-balanced recipes.

Overview: "CHANGING PLANS!"



Main information

Content	<p>Proportions Natural and decimal numbers Units of measurement and equivalences Multiplication, division, addition and subtraction</p>
Target group	<p>Adults and young adults, learners who...</p> <ul style="list-style-type: none"> • Cope with one-step, simple operations such as counting, performing basic arithmetic operations to cope with everyday situations; • Recognize and understand simple, common quantitative representations and use the information to make decisions; • Interested in cooking • This situation can also be proposed to those who are going through a cooking class, and by having the opportunity to have a kitchen it will be possible to conclude the experience with the hands-on activity.
Learning intention	<p>Numeracy for personal and private purposes Numeracy for professional issues</p>
Duration	4 UE+
Material and resources	Teaching cards; Diagrams; video; Kitchen and everything necessary to prepare some meal
Group size	From 5 to 10 learners/ small group work: 2 to 3 learners
Problem statement	How to adjust the amount of ingredients reported by a recipe if there are more or fewer diners present
Working questions	How do ingredients vary as the number of guests changes?
Learning outcomes and results	<p>Students will know and be able to use proportions correctly. If time is spent on this, the concept of estimation can also be fortified, at least getting them used to predicting a result that will then have to be verified through mathematical procedure in any case. They will also know and be able to interpret the units of measurement most frequently found in recipes (mass and capacity)</p>
Reference to National Qualification Frame	EQF3/4



Working plan

Time (lessons)	Description of content/activities	Material	Methodical and didactic information ¹
45'	1. Review Review of basic operations (addition, subtraction, multiplication and division) with natural and decimal numbers.	Topic related sheets and exercise to solve	Flipped classroom followed by peer to peer approach
60'	2.1 Learn Notion of proportionality (direct and inverse); how to solve proportions.	Teaching cards; problems and situations related to real life already prepared (solved with proportions)	Frontal lesson + group exercise
60'	2.2.Learn Units of measurement and equivalence.	Diagrams ; video and exercise	Teacher assisted group work
120' +	3. Training Exercises comprising the above topics focused on the problem at hand, i.e., adapting recipes and use of ingredients as guests present change.	Exercices, see appendix 1 + 2	Individual and group work; every group has different exercises and at the end of the work they share the problems, the strategy of solving and the results using a peer to peer approach
240'+	4. (Eventually) Practical Activity Practical activity in kitchen laboratory.	Kitchen and everything necessary to prepare some meal; recipes	Pair work on specific situation: some has to adapt recipes to an increase of guests others to a decrease
60'	5. Discussion of work done and information gained. The discussion, in addition to taking stock of the situation with regard to the confidence with which students approach the topic once the lessons are over, can also be used to assess their ability to estimate results by asking small and intuitive questions.		

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

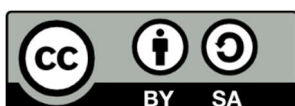
Suggestions for the teacher/user

The situation examined, which is quite common even for those who do not cook by profession, revolves around math and the aforementioned proportions. Often, however, students experience math anxiety that stops them in situations similar to these. A good approach might be not to focus too much on calculation per se by not putting pressure on the students from this point of view, but more to stimulate them to reason about the expected results and the strategy they think is most appropriate to deal with a problem that arises in professional life but also in common life.

Among the suggested methods is the flipped classroom, a brief though comprehensive explanation of which can be found at the following link: <https://www.cambridge.org/elt/blog/2020/07/01/how-to-get-your-flipped-classroom-started/>.

Once the students are known from a didactic point of view and from the point of view of internal class dynamics, one can proceed with the organization of working groups. In order for the method to be successful and for each student to benefit from the experience, attention must be paid to certain aspects in particular to the predisposition of some to assume a leader's attitude, a fundamental figure in carrying out the work. It is also advisable to assign other roles to the students in order to create a climate that fosters collaboration while avoiding the exclusion of some. The work performed independently by the students is constantly supervised by the teacher who, observing the progress and group dynamics, can make considerations on the effectiveness of the choices made and possibly decide how to adapt the experience in the future within the same class group. The objectives must be clear from the beginning precisely to allow the students to organize the work in an orderly and effective manner.

Clearly, it is important for learners to know mathematics, be able to apply it, and perhaps even be good at computation; however, it is increasingly important to stimulate them to reason, to question themselves, and to question whether what they are doing, whether the result they are getting, makes sense or not. The teacher, knowing the students, can try to do this throughout the course of the lessons, with the aim of leading them more and more toward autonomous thinking and judgment.



Appendix

Appendix 1: UNITS OF MEASUREMENT AND EQUIVALENCES:

<https://www.youtube.com/watch?v=oAtDAogdExw>

<https://www.youtube.com/watch?v=ZNX-a-5jGeM>

<https://www.metric-conversions.org/it/>

Appendix 2: RECIPE EXAMPLES:

https://www-alberghiera-it.translate.google.com/translate/MostraRicetta.asp?id_ricetta=1687& x tr sl=it& x tr tl=en& x tr hl=it

https://www-alberghiera-it.translate.google.com/translate/MostraRicetta.asp?id_ricetta=1421& x tr sl=it& x tr tl=en& x tr hl=it

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