## Numeracy in practice teaching and learning examples



### PLANNING PURCHASES

Should a shopping list become part of my life to help me save money?

We are used to going shopping – some of us do it nearly every day.

Nevertheless, when shopping, sometimes the overview is lost. Being famished you rush into the supermarket and buy whatever makes your mouth water. As a result, we buy too much and unnecessary thing spontaneously. This makes daily shopping even more expensive.

However, there are ways to help us save money. One of them is to plan the purchase of groceries for our daily needs. Maybe a shopping list could help us with this problem...

### Overview "Should a shopping list become part of my life?"

Context Everyday life Finances

Content
Quantity and number
Using digital skills

Can a shopping list help us save money?

## Target group (incl. necessary prior skills and competences)

Adults with basic arithmetic (and digital) skills

Adults willing to reflect their everyday life behaviour with regards to shopping

#### **Outcomes and results**

reflection on personal behaviour reality check with/without shopping list

Cognitive processes
Analysing situations
Problem solving

Dispositions
Self-confidence
Math difficulties



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# Numeracy in Practice Teaching and learning examples

| Main information              |   |  |  |
|-------------------------------|---|--|--|
| Content                       | Quantity and number: (whole) number addition up to 100; counting, sorting, basic arithmetic operations with integers, money, simple common quantitative representations (coins) possible Using digital skills   |  |  |
| Target group                  | Adults with basic arithmetic (and digital) skills Adults willing to reflect their everyday life behavior with regards to shopping   |  |  |
| Learning intention            | Numeracy skills for practical and personal purposes in daily life   |  |  |
| Duration                      | Approx. 6 lessons   |  |  |
| Material and resources        | Picture cards with food and refrigerated goods and their names, play money (€ and c), powerpoint slides with pictures for introduction, brochures of various food shops, shopping list template. brochures  |  |  |
| Group size                    | About 10 learners   |  |  |
| Problem statement             | It is difficult to plan the purchase of groceries and sometimes the overview is lost when shopping because of buying too much or spontaneously. This makes daily shopping even more expensive.  |  |  |
| Working questions             | Do you plan purchases and compare prices? Do you compare prices? Do you sometimes buy things you don't really need? Why do you like/dislike shopping? How often do you go shopping in a week? Can a shopping list help you save money? How can you organize your shopping list? |  |  |
| Learning outcomes and results | Learners prepare a shopping list with estimated prices Learners recognize (rising) prices Learners estimate what (food) they can by for a certain amount of money. Learners understand (whole number) addition up to 100. Learners transfer skills to personal and private life |  |  |





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### Working plan

|                   | Working plan   |   |  |  |  |  |
|-------------------|--|---|--|--|--|--|
| Time<br>(lessons) | Description of content/activities  | Material  | Methodical and<br>didactic<br>information <sup>1</sup>             |  |  |  |
| Lesson 1          | Cognitive activation: Introduction to the topic and cognitive activation; building on the experiences of the learners  • Tell a story with pictures ("The day started well"  • Link to the experiences of the learners | Picture card story (see appendix 1)  Possible questions: Is everything getting more expensive? Do you plan purchases and how? Do you compare prices? Do you sometimes buy things you don't really need? How often do you go shopping? | HITS Metacognitive strategies, Questioning, Collaborative learning |  |  |  |
|                   | Alternatively, teachers can present a picture of wasted food as a silent impulse as cognitive activation and introduction to the topic.  | silent impulse: "Bought<br>too much!" – see<br>appendix 2   |  |  |  |  |
| Lessons 2 - 4     | Modelling  Draw up a shopping list with picture cards, then estimate the prices. Put on coins accordingly.   | Picture cards of groceries coins and banknotes (play money)   | Scaffolding<br>Analyse<br>situation                                |  |  |  |
|                   | Create a written shopping list, enter the price as a whole number in the shopping list and introduce operators (mental arithmetic, calculate in writing, add to the model)   | shopping list (template)<br>– see appendix 3  | Putting learners<br>in a<br>mathematical<br>situation              |  |  |  |
|                   | Introduce limit for shopping (e.g.<br>€ 10 or € 20) and rebuild model<br>accordingly (by adding, giving<br>away)   |   | Problem solving  |  |  |  |
|                   | Draw up the final shopping list, reflection  |   |  |  |  |  |

 $<sup>^{1}</sup>$  for description and explanation of kinds of tasks, HITs and other background information please consult the teacher's/user's guide





## Teaching and learning examples



### Suggestions for the teacher/user

The example presented here should be considered as exemplary and inspirational material presenting a guideline with a high range of possibilities of adapting those suggestions to a specific group of learners or an individual learner with his or her very personal requirements.

In concrete terms, this example could be adapted these ways:

- Duration: Teachers can easily vary the duration of this example by adapting the phase of activation (letting out the picture card story and starting more "in-medias-res") or by changing the phase of transfer which, of course, not only takes time resources but also requires planning and a lot of activity within the learners.
- Further or additional material: Depending on the (digital) skills and equipment of the learners or the learning environment, teachers can bring in digital devices and tools that could help the learners solve the given tasks. These can be digital shopping lists (e.g. the app "Bring!"), apps to compare prices (e.g. the app "Smhaggle") or the online stores of supermarkets.
- Level of difficulty: The level of mathematical skills required, or the difficulty of the tasks
  presented in the example can be varied by a) only using whole numbers for the prices
  or b) also using decimal numbers which, of course, is much more realistic.

Our educational activities aim at numeracy skills being not only memorized, but first of all being practiced and functionally used by the learners in daily life or/and vocational situations. It is therefore recommended to implement the idea of HITS<sup>2</sup> (higher impacts of teaching skills) as far and often as possible: ...

- ... work with concrete and authentic material that learners will recognize from everyday life situations. In this concrete example, it is recommended to work with brochures and compare "real-life-prices". It would also be attractive to work with real (Euro) coins. If this is not desired (by the teacher or the learners), it is also helpful to use realistic play money.
- ... ask the learners questions and let them raise questions themselves. It can be crucial
  to discuss numeracy themes, contexts and numbers. We should put learners in a
  mathematical situation, allow discovery learning and promote problem-based learning.
- ... think of possible ways of transfer: In this example, we present a possibility of transfer in a real-life situation. It is also recommended that learners get to know digital devices (apps just like "Bring!") that could help them plan their purchases.

<sup>&</sup>lt;sup>2</sup> For general information and explanation on HITS please see the teacher's/user's guide





### Appendix 1

### Picture card story

Sources of pictures: www.pixabay.com [14.06.2023]



The day started well ...

After getting up, I went to my fridge. I opened the door.

The fridge was empty.



I don't like to go shopping. I always buy more than I need.
Those costs! Especially now as everything is getting more expensive.



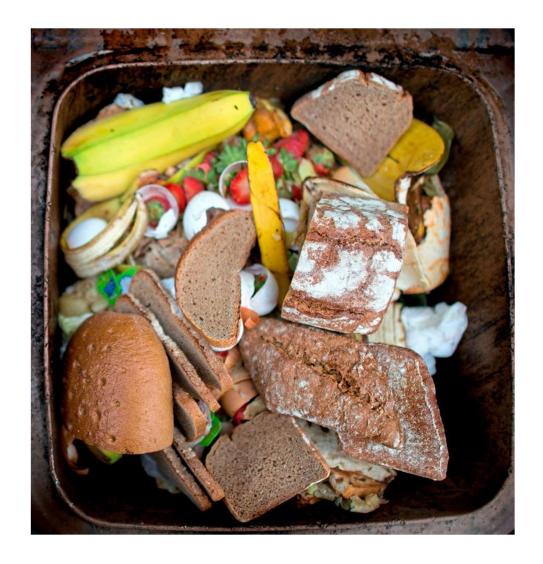
But today I really have to go shopping. To save money, I make myself a shopping list



### Appendix 2

#### Silent impulse for activation

Source of picture: <u>www.derstandard.at/story/2000108920183/wirtschaftskammer-lehnt-oevp-plaene-zum-umgang-mit-lebensmitteln-ab</u> [14.06.2023]



Bought too much. Do you know this too?

What do you think about it?

Share your thoughts with the person sitting next to you.





### Appendix 3

### Shopping list (template)

Source of image: <a href="www.unsplash.com">www.unsplash.com</a> [13.06.2023]

|                          | My shopping list |                                |
|--------------------------|------------------|--------------------------------|
| Vegetables and fruits    |                  | Estimated price  €  €  €  €  € |
| Milk and milk products   |                  | €<br>€<br>€                    |
| Fish and meat (products) |                  | €<br>€<br>€                    |
| Snacks                   |                  | €<br>€<br>€                    |
| Others                   |                  | €<br>€<br>€                    |