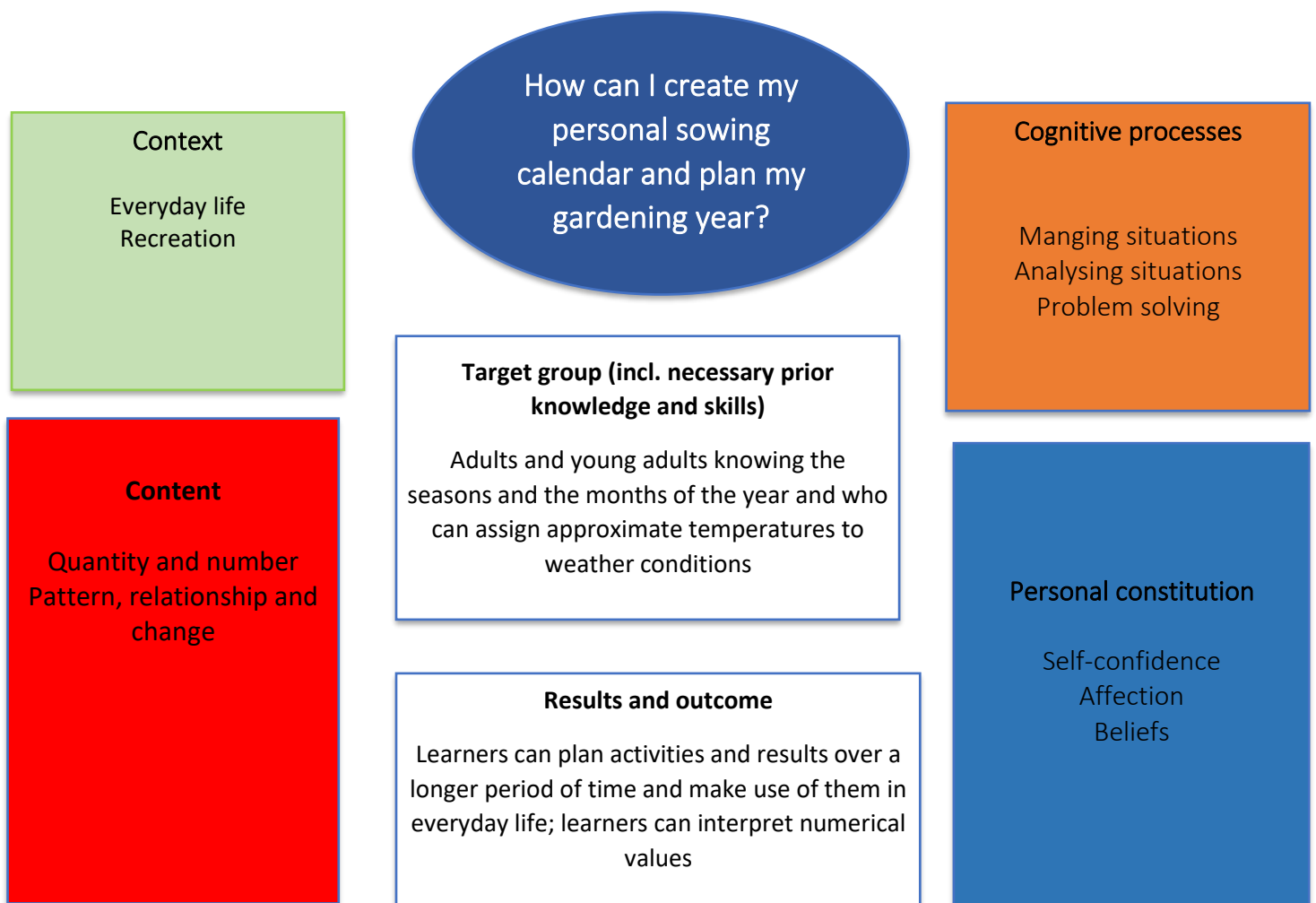


Growing vegetables on the balcony

Gardening is fun, and home-grown vegetables are healthy and taste much better than those we buy in the supermarket. How can we plan a personal kitchen garden, even if it's only on the balcony? What is a sowing calendar? How do I read a calendar? When do we have to sow our seeds in order to get a good harvest later on? There are so many different symbols and special characters on the seed bags. What do they mean?

Overview: „Growing vegetables on the balcony“



Main information

Learning content	<p>Natural numbers Time calculations Months and days Dimensions Assign temperatures Quantities Tables, diagrams and symbols</p>
Target group	<p>Adults and young adults who have enough space for at least one large flower pot in their home and who are motivated to garden.</p>
Learning intention	<p>What is the intention of adults to face this problem? - Numeracy for personal and private purposes</p>
Duration	<p>in the course: approx. 3 lessons, (realization: 3 seasons)</p>
Material and resources	<p>Calendar, sowing calendar, seed tapes, seed bags with description</p>
Group size	<p>7-10 participants</p>
Problem definition	<p>Having one's own kitchen garden requires some preparation. We have to consider various aspects before we can actually harvest our own vegetables later on.</p>
Working questions	<ul style="list-style-type: none"> • When should I start sowing? • How long does it take for the plants to grow? • What do the symbols on the seed bag mean? • What do the numbers mean (in relation to units of measurement)? • How much space and resources do I need for gardening? • What can I make yourself and what do I have to buy? • How do I read a calendar/sowing calendar? • How much will it cost? • Can I save money by gardening?
Learning outcomes and results	<p>Learners can plan a growing process over several months/seasons. They can also create a cost plan for the required resources and materials.</p>



Working plan

Time (minutes)	Description of content/ activities	Material	Methodical and didactic information ¹
10'+10'	<p>Activation</p> <p>The learners repeat or activate vocabulary on vegetables.</p> <p>They look at the symbols that can be found on seed bags and match the symbol cards with the correct word cards.</p>	<p>Picture cards (see Appendix 1)</p> <p>Word cards, Symbol cards (see Appendix 2)</p>	Cognitive activation
45' +	<p>Activity - Get to know and understand the numbers, symbols and text contexts of seed bags, sowing calendars and planting materials</p> <p>The learners get a seed bag (or an enlarged copy of its back side). They are asked to circle all the numbers they can find on it.</p> <p>They work in pairs and try to determine the meaning of the different numbers (units of measurement - cm; temperature - °C; days, weeks and months; price - €; best before date)</p> <p>They compare and discuss their results in plenary.</p> <p>Depending on the learners' prior skills, the trainer could offer further explanation and exercises on certain topics (i.e., converting time and length measurements...)</p> <p>The learners work in pairs and interpret the sowing calendar. The results are discussed in the plenary.</p>	<p>Seed bags (copies) (see Appendix 3)</p> <p>Sowing calendar with possible questions (see Appendix 4)</p>	<p>Hands on learning</p> <p>Collaborative learning</p> <p>Feedback</p>

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



<p>45'</p>	<p>Activity - Questions and answers</p> <p>The learners try to formulate questions about the information on the seed bags. Then they ask each other.</p> <p>Alternatively, they write their questions on a worksheet, and these must then be answered in writing.</p> <p>Possible questions:</p> <ul style="list-style-type: none"> • When can you start sowing? • Is it possible to sow in December? • How deep must the seed be put into the soil? • What distance is necessary between the seeds? • Until which month can you harvest? • Is it necessary to separate the pants? • When do you have to separate them? • Until which date should you use the seeds? • How much does it cost? • ... <p>Finally, the learners can compare the answer. The teacher assists individually.</p>	<p>Worksheet (see Appendix 5)</p>	<p>Collaborative learning Feedback</p>
	<p>Transfer</p> <p>Each learner can plan his/her personal kitchen garden (even if it's just a flowerpot), compare prices and calculate time periods in months or weeks.</p> <p>The personal planting plan (sowing calendar) can be compared and discussed in the course.</p>		



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.

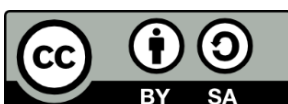
In concrete terms, the example (Growing my own vegetables on the balcony) could be adapted these ways:

- Individualisation: Some participants will deepen their knowledge of simple mathematical mental calculations, rough calculations (price comparisons).
- Further or additional material: Depending on the learners' interest the example can be extended:
 - What do I need to plant my own vegetables (on the balcony)? Flowerpots, soil, fertilizer, seeds, watering can, ... Where can I find all those things? The learners can do research on the Internet to compare prices.
 - The learners can fill in their personal sowing calendar on the Internet (i.e., www.knights.garden/dein-aussaatkalender)
 - The teacher can offer additional materials concerning length- and time- and temperature measurements.
 - Roman numerals can be introduced, as we often find them on seed bags to indicate the months.
 -

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 HITS² (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.
- ... ask the learners questions and let them raise questions themselves. It can be crucial to discuss numeracy themes, contexts and numbers.
- ... think of possible ways of transfer: The learners can plan their own kitchen garden. If time and circumstances permit, the learners could cultivate their vegetables in the course. The learners are able to compare prices and to use a calendar.

² For general information and explanation on HITS please see the teacher's/user's guide.

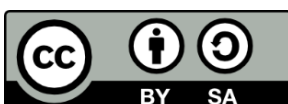


Appendix 1

Examples for picture cards (vegetables)



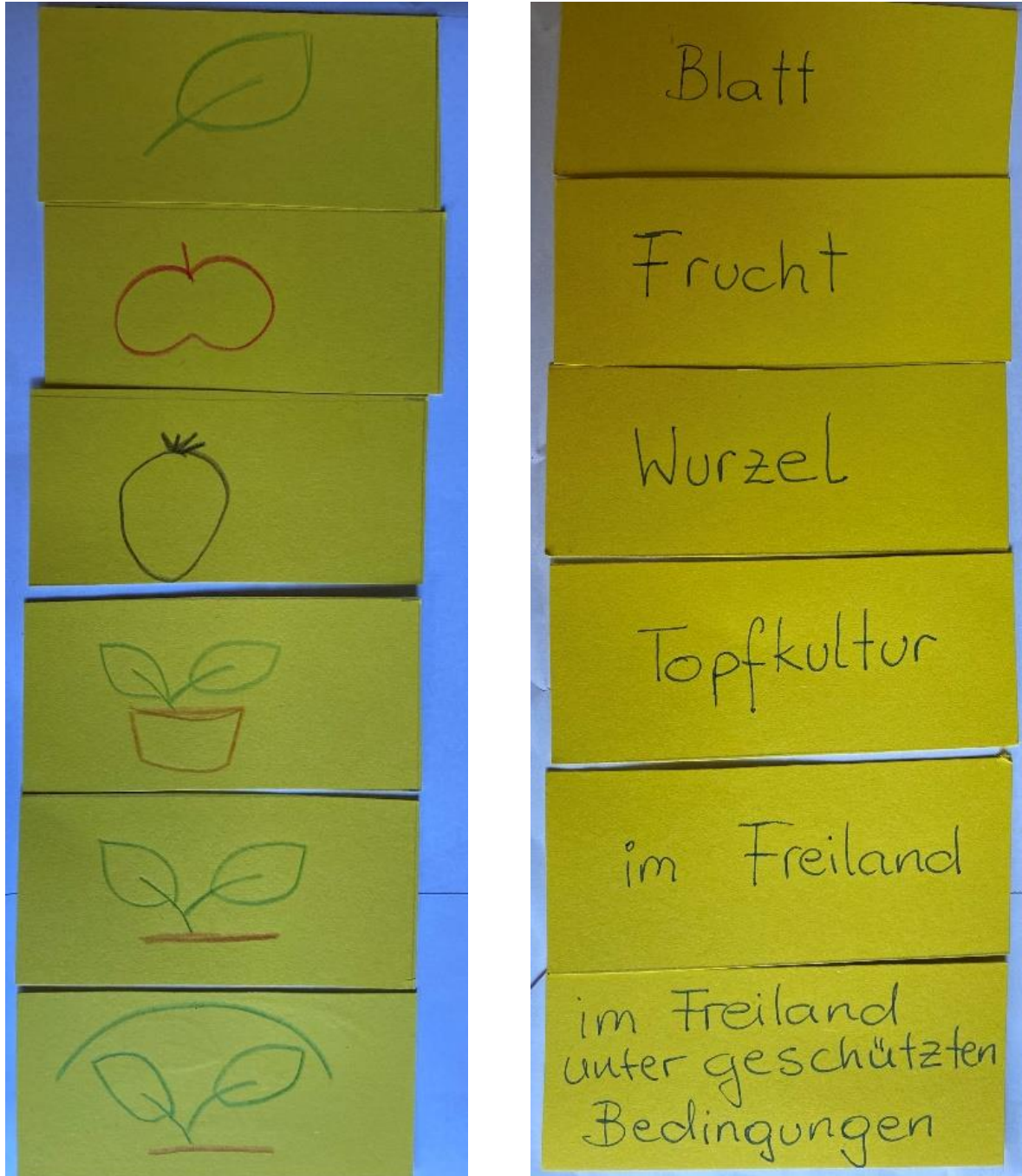
Pictures: www.pixabay.com



This work is licensed under CC BY-SA 4.0. To view a copy of this license, visit <https://creativecommons.org/licenses/by-sa/4.0/>

Appendix 2

Examples of symbol/word cards to activate prior knowledge for a better understanding of the sowing calendar and the symbols of the seed bags.



Source pictures: private photos

Appendix 3

Picture material and copy templates for activities with calendars, reading numbers, understanding numbers, measurements and temperatures etc.

Kremser Perle

Solanum lycopersicum L.

from € 3,50

including 13% VAT plus shipping costs



Traditional very robust, weather-tolerant Austrian hobby gardener variety. Semi-determinant growth form, very early high yield. Medium size, round, red fruits are burst resistant. Good taste. Ideal for pots cultivation. Fruit weight is about 70g.

Thousand grain weight: 2.52 g

Article number: To23

Portion contents: 40 Seeds

Ready to ship in 3 to 5 working days.

Cultivation

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pre-cultivation		■	■									
Plant outdoors					■							
Harvest							■	■	■			

Source: www.reinsaat.at/shop/EN/tomatoes/kremser_perle/; [01.03.2024]



AUSSAAT
Vorziehen April



ERNTÉ, GENUSSREIFE
VII - IX



LEBENSZYKLUS
einjährig



PFLANZUNG-ABSTÄNDE
Pflanzabstand 50x50 cm



STANDORT
sonniger Standort



WINTERHÄRTE
nicht winterhart (bis 0°C)



Bio-Saatgut von ARCHE
NOAH

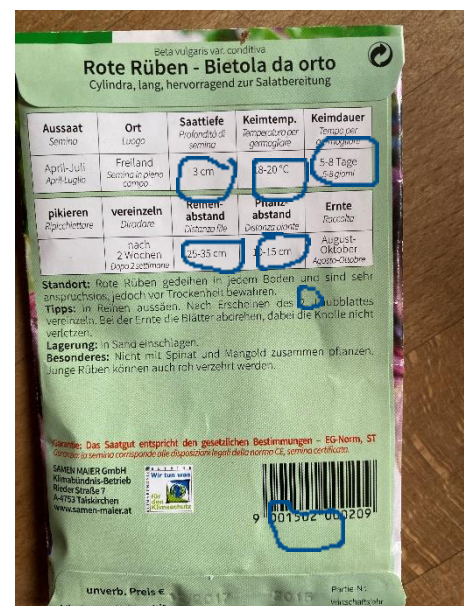
SALATPARADEISER

Justens Gelbe

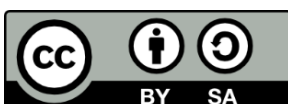
3,99 EUR (inkl. 13% MwSt.)

zzgl. Versandkosten

Source : www.arche-noah.at
[01.03.2024]



Source : private photo



This work is licensed under CC BY-SA 4.0. To view a copy of this license, visit <https://creativecommons.org/licenses/by-sa/4.0/>

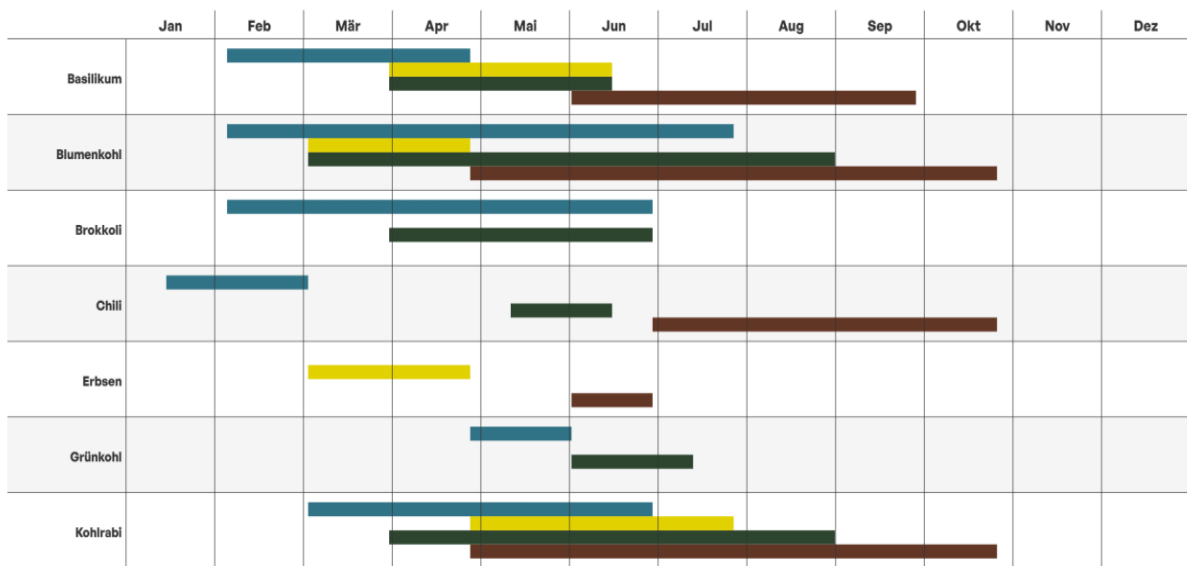
Appendix 4

Example sowing calendar (pre-cultivation, sowing outdoor, planting outdoor, harvesting)

Dein Aussaatkalender

Legende

■ Vorziehen
 ■ Ins Beet säen
 ■ Ins Beet pflanzen
 ■ Ernten



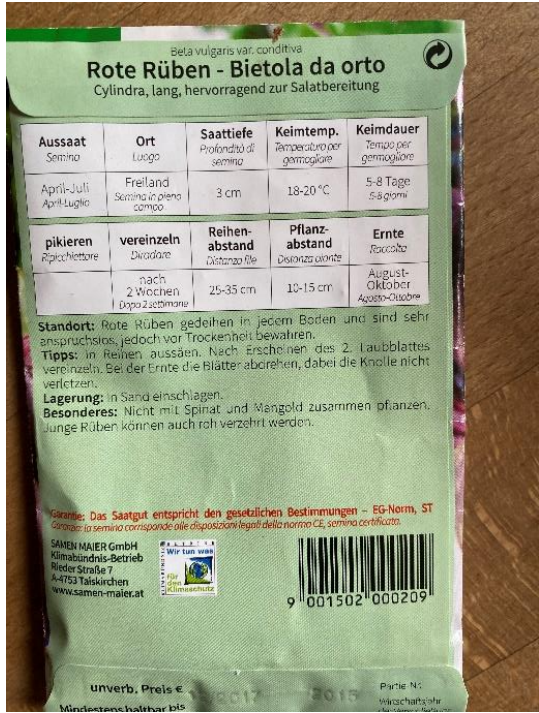
Source: www.knights.garden/dein-aussaatkalender/, [01.03.2024]

Possible questions :

- When can you start to pre-cultivate broccoli?
- During how many months can you do the pre-cultivation of broccoli?
- From which month can basil be sown outdoor?
- From which month can you harvest it?
- Which vegetable can you harvest in November and December?
- Which vegetables have the longest harvest time? How long is it?

Appendix 5

- Look at the information on the seed bag.
- Write 5 questions.
- Give the worksheet to your partner and let him/her answer the questions.
- Control and discuss the answers



Questions:

1. _____
2. _____
3. _____
4. _____
5. _____

Answers:

1. _____
2. _____
3. _____
4. _____
5. _____



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).



UNIVERSITAT DE
BARCELONA



Asturia vzw



D!SORA