

Situation:

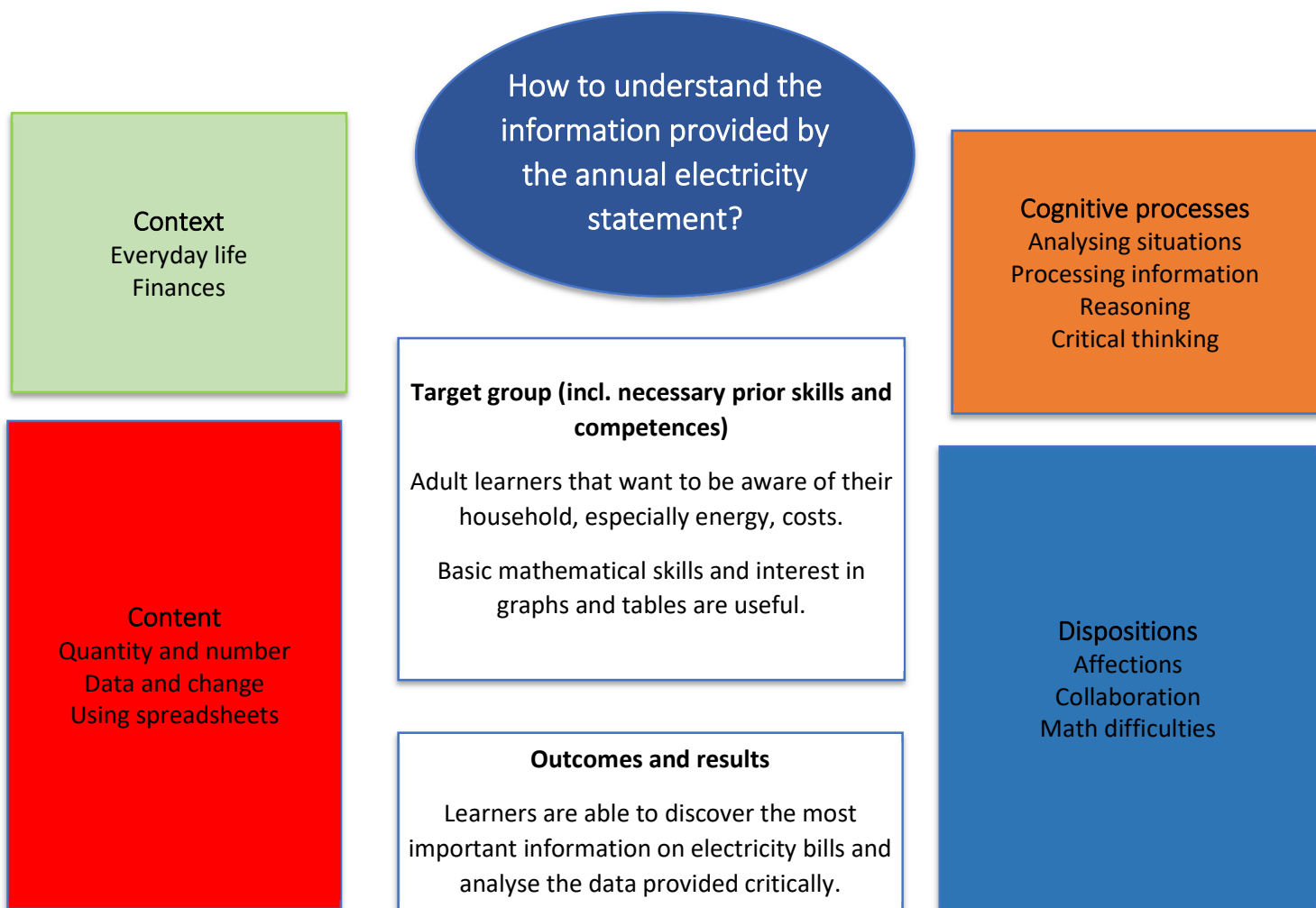
Breathtaking... the annual electricity statement

Once a year, the electricity bill is due. Most energy companies provide their customers with information about consumption and costs. It not only shows what is being consumed and the costs incurred but also how this compares to other periods and other users. The information is conveyed through text, tables, and graphics.

But how to read and understand this complicated information?
Which information is really important for me and my family?

Well, maybe it's easier only to look at what needs to be paid...

Overview “Breathtaking... the annual electricity statement”



Main information	
Content	Quantity and number Addition, subtraction, multiplication Decimal numbers Percentages Statistics and graphs
Target group	Adult learners that want to be aware of their household, especially energy, costs. Basic mathematical skills and interest in graphs and tables are useful.
Learning intention	What is the intention of adults to face this problem? – Numeracy for personal and private purposes – Numeracy to understand society
Duration	1 + lessons
Material and resources	Picture for activation (see appendix 1) Annual energy bills / fragments of bills (see appendix 2)
Group size	Range from 5 to 12 learners
Problem statement	In the context of annual electricity billing, there arises a challenge for consumers in deciphering and comprehending the provided information. While energy companies furnish details on consumption and costs, conveyed through various mediums such as text, tables, and graphics, the complexity of the data poses a significant hurdle.
Working questions	<ul style="list-style-type: none"> • Are learners aware of increasing living costs, including costs for energy? • Do learners, in their private lives, focus on annual electricity bills and the information they provide? • Are learners able to locate the most important information on annual electricity bills and to interpret it?
Learning outcomes and results	The students are able to read and understand the most important information on the annual electricity bill. The students reflect their energy consumption critically.
Reference to National Qualification Frame	Optional (country's decision)

Working plan

Time (lessons)	Description of content/activities	Material	Methodical and didactic information ¹
10 min	<p>Activation</p> <p>Show a picture to the learners to put them in the situation of energy costs. Ask the learners to share their personal experiences with energy costs and electricity bills, if they want to:</p> <ul style="list-style-type: none"> • Do you care about energy costs? • Do you feel like these costs have increased within the last months and years? • Do you know your annual electricity bill? Do you check it carefully? • In your family, do you care about your energy consumption? Only because of costs or are there other reasons as well? • ... 	<p>Computer, beamer</p> <p>Activating picture – See appendix 1 for an example</p>	<p>Questioning</p>
35 min	<p>Activity: The annual “hour of truth”</p> <p>Now, the learners engage with annual electricity bills and the information provided within these. Therefore, the teacher shows or hands out fragments of electricity bills. It could also be interesting for the learners to bring their own annual electricity bills if they want to.</p> <p>Discuss the information provided by the fragments of bills with the learners or let them hypothesize in small subgroups:</p> <ul style="list-style-type: none"> • Which information seems clear to you? Which not? • What does the information from the table mean? • How did the energy consumption develop compared to the year 	<p>Examples / Fragments of annual electricity bills – See appendix 2 for an example</p>	<p>Metacognitive strategies</p> <p>Multiple exposures</p> <p>Questioning</p>

¹ for description and explanation of kinds of tasks, HITs and other background information please consult the teachers’ guide

Suggestions for the teacher

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 “Breathtaking... the annual electricity statement” could be adapted these ways:

- **Further or additional material:** Ask your learners to bring their own annual electricity bills to this learning unit, if they want to do so. The more authentic the material you work with, the more your students will feel engaged.
- **Level of difficulty:** The level of difficulty can be raised by including further, more complicated tables and graphs on energy consumption within this teaching unit.
- **Dispositions taken into account:** Be aware of the fact that energy cost, or living costs in general, may pose a big problem for some of your learners. It is therefore important that your learners feel free to share their personal experiences and also data, but don't feel forced to do so.

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, liked described above.
- ... ask the learners questions and let them raise questions themselves. It can be crucial to discuss numeracy themes, contexts and numbers. Especially in complex situations like analyzing the annual electricity bill (providing a lot of text in fine print and large numbers) make sure that your students take the necessary time to find out what is clear to them and where there may arise questions.
- ... think of possible ways of transfer: In the context of energy consumption, it may help the learners in their everyday lives to discuss possibilities of saving energy or lowering energy costs. This could be a fruitful activity for the phase of transfer.

² For general information and explanation on HITS please see teachers' guide



Appendix 1

Appendix 1: Picture for activation (Source: pixabay.com)



Appendix 2

Appendix 2: Picture for activation (own photos)

Ablesedaten						
Zähler/Obis	Zeitraum	Stand alt	Stand neu	Einheiten	Faktor	Verbrauch
29336804/1.8.0	01.01.2022-28.02.2022	10.787,91 N	11.331,44 N	543,53		
29336804/1.8.0	01.03.2022-31.12.2022	11.331,44 N	13.432,71 N	2.101,27	1	543,53 kWh
Verbrauchsentwicklung						
Vorperiode:	3.074 kWh in 365 Tagen	8,42 kWh/Tag				
Aktuell:	2.644,8 kWh in 365 Tagen	7,25 kWh/Tag				
Energiekosten						
Position	Zeitraum	Verbrauchsbasis	Verbrauchspreis	Netto Betrag €	USt. %	
Nachh.Einf.bis 10000kWh	01.01.2022-28.02.2022	543,53 kWh	9,975 Cent/kWh	54,22	20	
Vario01	01.03.2022-31.12.2022	2.101,27 kWh	20,5 Cent/kWh	430,76	20	
Öko-Investitionsbeitrag	01.01.2022-28.02.2022	59 Tag(e)	0,032877 €/Tag	1,94	20	
Servicepauschale Nh. Einfach	01.01.2022-28.02.2022	59 Tag(e)	0,057534 €/Tag	3,39	20	
Servicepauschale Vario	01.03.2022-31.12.2022	306 Tag(e)	0,09863 €/Tag	30,18	20	
Ökostrom-Investitionsbeitrag Vario	01.03.2022-31.12.2022	306 Tag(e)	0,041096 €/Tag	12,58	20	
Energiekosten				533,07		

Die einfachste Stromrechnung Österreichs*!
Zeitraum 01.01.2022 bis 31.12.2022

Stromverbrauch	7.020 kWh
Gesamtkosten	1.774,79 Euro Guthaben 2122,21 Euro
	Eingelöste Gutscheine in Höhe von 1.080,00 Euro wurden unter geleistete Zahlungen berücksichtigt.
Neuer Teilbetrag	178,00 Euro bisher: 264,00 Euro
Ihr KWG Rabatt und Bonus:	
21,26 Euro wurden abgezogen	
Ihr KWG Strom:	
100% Ökostrom aus Österreich CO2 Emissionen: 0,00 g/kWh; radioaktiver Abfall 0,00 mg/kWh	