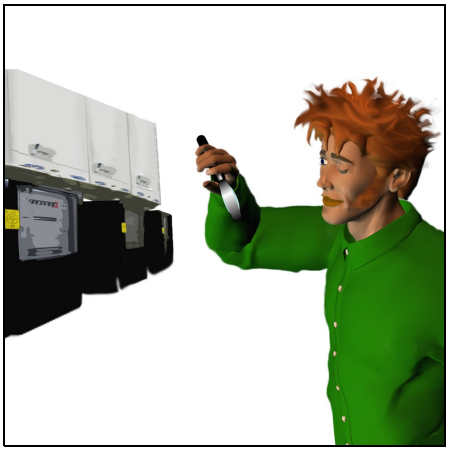
Checklist Electricity Consumption



School:.....

Group (names of all pupils):.....

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Taker of the minutes: .....

Tutor of the group (name, position): .....

Dialogue partner (name, position)): .....

Date: .....

Find out how much electricity we use! Ask the caretaker or another suitable person to answer the questions with you. You should solve the arithmetic problems yourselves.

Answer the questions in sequence! Be considerate when walking through the school! If possible take pictures that are in line with your topic!

1 Daily electricity consumption

a) Find out where there is the electricity of our school. Ask the caretaker which part(s) of the school building is/are covered by this meter and write down the following information:

Meter no. ..... Location of the meter .....

Meter covers the following part(s) of the building: .....

b) If there are other meters (a separate meter for the gym for example), copy the checklist and do the tasks 1.a) and 1.c) for this/these meter(s) as well.

c) Check the meter reading at the same times for a whole week early in the morning and after the end of school, calculate the electricity consumption (present count – last count) and enter these data into the measurement record. Keep in mind that there are cases where the count of the meter has to be multiplied by a certain conversion factor to get kWh!
Discuss with your teacher at which times you should do the counts.

Time specifications	date	time	count	consumption
Monday morning	.....	.....	.....	.....
Monday midday	.....	.....	.....	.....
Tuesday morning	.....	.....	.....	.....
Tuesday midday	.....	.....	.....	.....
Wednesday morning	.....	.....	.....	.....
Wednesday midday	.....	.....	.....	.....
Thursday morning	.....	.....	.....	.....
Thursday midday	.....	.....	.....	.....
Friday morning	.....	.....	.....	.....
Friday midday	.....	.....	.....	.....
Monday morning	.....	.....	.....	.....

2 Yearly electricity consumption

a) Evaluate together with your teacher of the caretaker the electricity bills of at least the last three years. If there is a group that works on electricity generation they should join in.

Take notes of the specific billing period (1) and the consumption (2) in the following table.
Enter the cost (3). If there are other meters, collect these data for each of them and add the values eventually.
Enquire the size of the surface that is used at this school (4). Then calculate the consumption per area (5). Enquire how many persons (pupils, teachers,...) there are at this school (6).
Determine the consumption per person (7).
Now take from the bill the amount of carbon dioxide set free during the generation of electricity; *in case* the bill doesn't indicate this calculate it yourselves: 1 kWh equals a nationwide average of 616g CO_2/kWh (8).

Meter no. .....

	last year	two years ago	three year ago
(1) period of time	.....	.....	.....
(2) consumption	.....kWh	.....kWh	.....kWh
(3) cost	.....€	.....€	.....€
(4) area used	.....m²	.....m²	.....m²
(5) consumption per area	.....kWh/m²	.....kWh/m²	..... kWh/m²
(6) number of persons	.....	.....	.....
(7) consumption/person	.....kWh/pers	.....kWh/pers	..... kWh/pers
(8) CO_2	.....kg	.....kg	.....kg

b) Think about why CO_2 is set free during electricity generation and if all energy carriers used for electricity generation cause the same amount CO_2! .....

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3 Responsibility

Ask the caretaker who is responsible for the electrical installations and the electronic devices.

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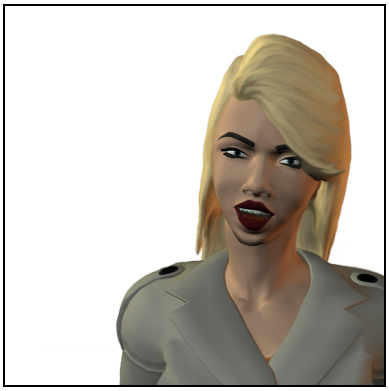
4 Evaluation and presentation



Now summarise your results clearly! If there are groups working on computers, lighting, generation of heat and cold as well as heating and ventilation systems, exchange your data for the tasks d) and e) .

a) In question 2 you calculated the electricity consumption per person or per area. Compare your results with the results listed in tables on the internet site www.umweltschulen.de/energie/k_elektro.html.

b) Depict the daily electricity consumption in a graph. First think about which kind of graph would be most suitable! Also consider if it might be more sensible to pool the data of different meters or if you depict them separately.
Does our school consume the same amount of electric energy every day?
How much electricity is used during classes, how much during times when there is no class?
If possible present the cost as well.

c) Depict the annual electricity consumption as a graph. Think again which kind of graph might be most suitable!

d) Think about which devices might be responsible for the electricity consumption during the times when there is no class. .....

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e) Think about which devices normally only have to be switched on on schooldays (class, maybe breaks).

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f) Now try to evaluate the electricity consumption at our school. Justify your assessment in such a way that teachers and pupils understand it!

It is good ...	It is not good ...
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Discuss what we could do better! Justify your suggestions!

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Think about how you would like to present your results to other pupils and teachers!

Elaborate a wanted poster for example, in which you issue a search warrant for the most important electricity guzzlers and ask your classmates, teachers and parents to disarm these together with you.

Design an „energy-saving book“, which you present to your headmaster of the caretaker so he can take notes of the kilowatt-hours that will be saved in the future. The energy-saving book should be clear and easy to handle and should contain some easy explanations about energy-saving as well as about how to work with it.

Or write a paper, in which you explain electricity consumption to your teacher and in which you try to get them to strongly support any energy-saving.

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Now get ready to present your results!