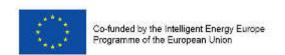


Teaching Material

Attachment to the
"Guidelines IT-Peer Education"
produced by
UseITsmartly Consortium
March 2016







Unit 1 Qualification: "Methodical Competences" ECVET Sheet, Level 2 Unit 1

KNOWLEDGE

He/She knows ...

- to express their expectations on the IT-peer training and multiplication process.
- to recognise the process of the IT-peer training.
- to emphasise the aim of peer education.
- to recognise and describe his/her tasks in the IT-peer training and in the role of multiplier.
- .to describe the function of a vehicle.
- to recognise the communication-habits of young adults (social media).
- about different presentation-techniques and presentation-medias.
- to select the most important didactical methods in peer education.
- to identify the most important pedagogical approaches in peer education.
- to recognise how to address and communication with young people in a proper way.

SKILLS

He/She can ...

- to create their own portfolio for the IT-peer training.
- to choose the optimal presentation-techniques and proper media from a pool of teaching material and didactical methods (supported by the trainers).
- to design and use an own teaching-concept for the multiplication process.
- to work with a vehicle presented by peers, who were already involved in a "vehicle-workshop" and optionally develop a vehicle on his/her own.

COMPETENCE

He/She acts as a facilitator and multiplier on his/her own. He/She monitor their own work and multiplication process.





Unit 2 Qualification: Green Internet ECVET-Sheet, Level 2 Unit 2

KNOWLEDGE

He/She knows ...

- to name the most important facts about the usage of the internet from youths around the world:
 - number of users
 - average usage
 - social media.
- to describe how the internet basically works:
 - net-configuration
 - provider
 - search engines
 - clouds, streaming.
- to report about the ecological impact of internet usage:
 - CO₂ emissions
 - power consumption.

SKILLS

He/She can ...

- to create their own portfolio for the IT-peer training.
- to choose the optimal presentation-techniques and proper media from a pool of teaching material and didactical methods (supported by the trainers).
- to design and use an own teaching-concept for the multiplication process.
- to work with a vehicle presented by peers, who were already involved in a "vehicle-workshop" and optionally develop a vehicle on his/her own.

COMPETENCE

He/She assumes responsibility for a conscious and ecological friendly way of internet use





IT-Peer Training - Curriculum	Unit 3
Qualification: Green IT ECVET Sheet, Level 2	Session 4,5,6

KNOWLEDGE

He/She knows ...

- to define the main components, advantages and specialities of a "green" PC:
 - hardware
 - software
- to express the ecological footprint:
 - raw materials and resources
 - waste-recycling
 - clean IT
- to emphasize sustainable usage:
 - energy efficient usage
 - repair
 - upgrade

SKILLS

He/She can ...

- mark the differences of a standard pc and a green pc
- see the ecological impact of IT.
- look up methods for the sustainable usage of IT.

COMPETENCE

He/She develops ideas for energy efficiency IT usage concepts. He/She monitor their own work and multiplication process.





IT-Peer Training – Curriculum	Unit 2
Qualification: SMART Technologies ECVET Sheet, Level 2	Session 7

KNOWLEDGE

He/She knows ...

- to describe the basics of different "smart" technologies and their goals:
 - smartmeter
 - smarthome
 - smartgrids
 - smartcities.
- to explain the advantages and disadvantages of "smart" technology.

SKILLS

He/She can ...

- to discuss the idea of "smart" technologies.
- to argue the advantages and disadvantages of "smart" technologies.

COMPETENCE

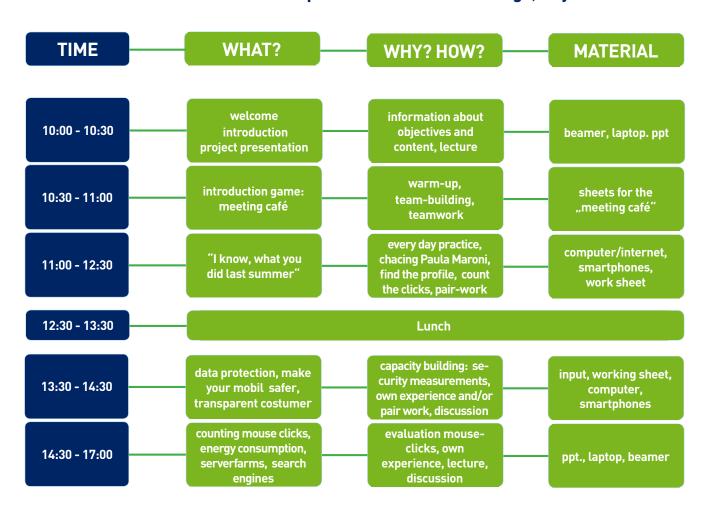
He/She communicates "smart" technologies.





Didactical Concept

Austrian Didactical Concept - Green IT-Peer Training I, Day 1

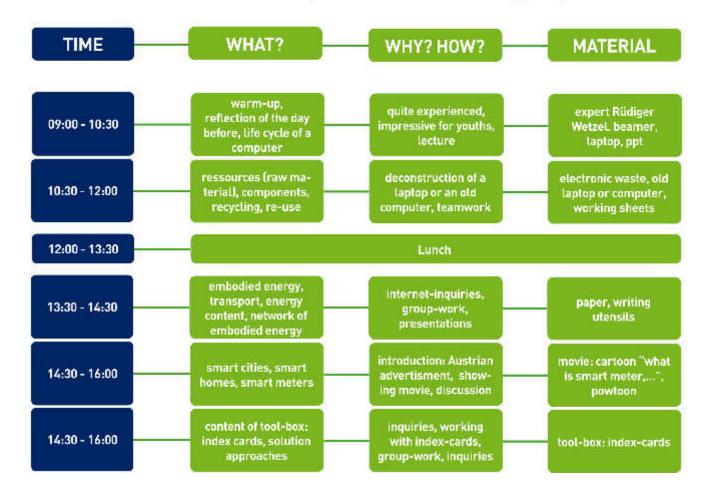


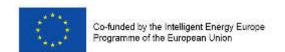




Didactical Concept

Austrian Didactical Concept - Green IT-Peer Training I, Day 2



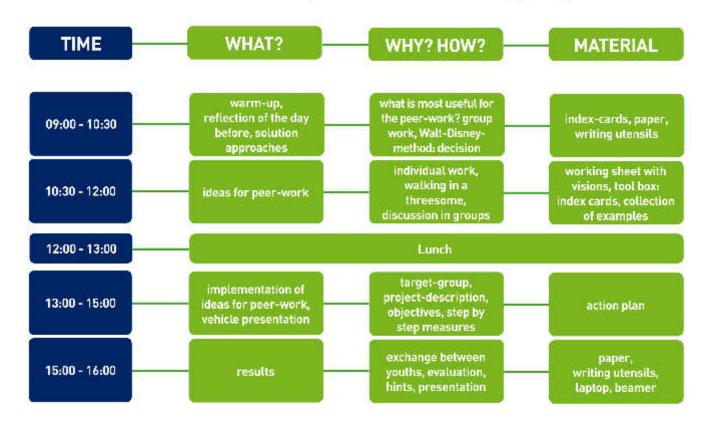






Didactical Concept

Austrian Didactical Concept - Green IT-Peer Training I, Day 3







Recruitment Material

Do you know, that ...

- ... for their server farms Google needs as much energy daily as a **town with 300.000** inhabitants.
- ... every day 2 billion people worldwide use the internet. Increasing dramatically!
- ... the internet is already responsible for more CO₂-emissions than the **airline industry**.

Within the EU-project "UseITsmartly" the Styrian Center of Environmental Education is teaching Austrian young people to become green IT peers. This peers get technical and methodical knowledge and show their friends and colleagues, how IT can be used in a smart and energy saving way.

Interested?

optionally for specialised paper and master thesis

- attendance for max. 6 young people per federal state
- · free of charge, with certification





Contact

Umwelt-Bildungs-Zentrum Stelermark
Brockmanngasse 53, 8010 Graz
greentT@ubz-stmk.at
0316/835404 - 7
www.ubz-stmk.at

www.ubz-stmk.at www.useitsmartly.com







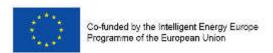
Survey before starting the IT-peer training

Use of IT in daily life

Thank you for participating in our project about young people's use of Π and energy. This questionnaire includes a few questions about you and some about your use of information technology (Π) in your everyday life. Please answer the following questions.

I. How old are you?ycars				
2. Your gender? (please write)				
3. What is your housing situation? (please mark 1 live with my parent(s) 1 live alone 1 live with my girlfriend/boyfriend 1 live with my roommates (share an apartme 1 live in a dormitory		similar)		
4. Which of the following devices do you use in	general? (p.	lease mark all re	levanti	
Television at home, which I share with othe Television in my own room Laptop PC at home PC at school Mobile phone Sanat phone Tablet (e.g., iPad) Game console (e.g., Xhox, PlayStation, Nint MP3-player (e.g., iPad) Other (pleace write):	rs (e.g. telev	ision in living roc		
5. Do you sometimes use a laptop? (please mari	U .		□ Yes	□ No
6. Do you sometimes use a stationair PC? (plea	About 2 h			lore No
If yes: 6.1 How many hours do you use a PC on a typi	cal weekday	? (please mark)		
	About 2 h		3 hours N	fore
7. Do you sometimes use a mobile or smart pho	nte? (please	mark)	□ Yes	□ No
	About 2 h	ours 🗆 About		rrkj lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar	About 2 ho t phone or t	ours 🗆 About		
7.1 How many hours do you use a mobile or sn Less than 30 minutes About I hour	About 2 ho t phone or t	ablet for At least weekly (but not every		
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar (please mark the name or that applies best to your Send/seceive photos or video by e-mail	About 2 ho t phone or t ase)	ablet for At least weekly (but	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About I hour 11. How often do you use a mobile phone/smar feleuse mark the annuer that applies heat to your Send/receive photos or video by e-mail Video calls (e.g. Skype) Upload or watch photos or video on social media (e.g. Facebook or Instgram) Upload photos or video to YouTubo Winco or	About 2 ho t phone or t ase)	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar fplease mark the name that applies best to your Send/seceive photos or video by e-mail Video calls (e.g. Skype) Upload or watch photos or video on social media (e.g. Facebook or Instigram) Upload photos or video in YeuTube/Wimoe or similar video-sturing Streaming music via the internet (e.g. Spotify)	About 2 ho t phone or t ase)	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar feleure mark the annuer that apolles heat to your Send/receive photos or video by e-mail Video calls (e.g. Skype) Upload or watch photos or video on social media (e.g. Facebook or Instagram) Upload photos or video by VeuTube/Winco or similar video-staring Streaming maics via the internet (e.g. Spotify) Streaming video or television programmes from the internet (e.g. YouTube, Winco, Netflix or national television website)	About 2 ho t phone or t ase)	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar please mark the annuer that applies best to your Sendweeeive photos or video by e-mail Video calls (e.g. Skype) Upload por which photos or video on social media (e.g. Facebook or Instagram) Upload photos or video to YouTube/Winco or similar video-starring Streaming music via the internet (e.g. Spotify) Streaming video or television programmes from the internet (e.g. YouTube, Winno, Notflix or national television website) Download video, music or podeasts to your own device (not streaming) Ouline gaming (playing games on the internet,	About 2 ho t phone or t ase)	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar fplicase mark the aurore that applies heat to your Send/receive photos or video by e-mail Video calls (e.g. Skype) Upload or watch photos or video on social media (e.g. Facebook or Instagram) Upload photos or video to You Tube Winne or similar video-charing Streaming music via the internet (e.g. Spotify) Streaming video or television programmes from the internet (e.g. You'Tube, Winneo, Netflix or national television website) Download video, music or podeasts to your own device (not streaming)	About 2 ho t phone or t ase)	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar fplicase mark the annuer than apollies heat to your Sendireceive photos or video by e-mail Video calls (e.g. Skype) Upload or watch photos or video on social media (e.g. Facebook or Instagram) Upload photos or video to YouTube/Wimoo or similar video-staring Streaming nusic via the internet (e.g. Spoiffy) Streaming video or television programmes from the internet (e.g. YouTube, Wimoo, Natflix or national television website) Download video, music or podeasts to your own device (not streaming) Ouline gaming (playing games on the internet, e.g. World of Wacraft or free colline games) Play games (not online gaming) Participate in virual worlds (e.g. Second Life or similar online virual worlds)	About 2 ho t phone or t ase)	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar (phone mark the annow that apolies heat to your Sendweelve photos or video by e-mail Video calls (e.g. Skype) Upload or watch photos or video on social media (e.g. Facebook or Instagram) Upload photos or video to Yesthub-Wimoo or similar video-situring Streaming video or television programmes from the internal (e.g. You'fube, Wimoo, Natflix or national television website) Download video, music or podeasts to your own device (not streaming) Online gaming (playing games on the internet, e.g. World of Wacraft or free colline games) Flay games (not online gaming) Participate in virual worlds (e.g. Second Life or similar online virtual worlds) Read nows or goesip on websites Use sawch engines (e.g. Googde) Download reports or other kinds of larger text	About 2 ho t phone or t ase)	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar please much the annier that applies best to your Send veceive photos or video by e-mail Video calls (e.g., Skype) Upload or watch photos or video on social media (e.g., Facebook or Instagram) Upload photos or video to YouTube/Winneo or similar video-starring Streaming music via the internet (e.g., Spotify) Streaming music via the internet (e.g., Spotify) Streaming video or television programmes from the internet (e.g., YouTube, Winneo, Notflix or national television website) Download video, music or podeasts to your own device (not streaming) Ouline gaming (playing games on the internet, e.g., World of Wateraft or free colline games) Participate in virtual worlds (e.g., Second Life or similar online virtual worlds) Read news or gossip on websites Use scarch engines (e.g., Google) Download reports or other kinds of larger text documents	About 2 ho t phone or t ase)	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About I hour 11. How often do you use a mobile phone/smar felence mark the name or that apolles heat to your Send veceive photos or video by e-mail Video calls (e.g. Skype) Upload or watch photos or video on social media (e.g. Facebook or Instagram) Upload photos or video on social media (e.g. Facebook or Instagram) Upload photos or video to YeuTubeWintoo or similar video-starsing Streaming maics via the internet (e.g. Spotify) Streaming video or television programmes from the internet (e.g. VooTube, Winno, Natflix or national television website) Download video, music or podeasts to your own device (not streaming) Online gaming (playing games on the internet, e.g. World of Waterall or free ordine games) Play games (not online gaming) Participate in virtual worlds (e.g. Second Life or similar online virtual worlds) Read news or grossip on websites Use scarch engines (e.g. Google) Download reports or other kinds of larger text documents Photo or video editing (e.g. using Pototohop) Monitor your health (e.g. using pedomater apps)	About 2 ho t phone or t ase)	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar please much the annier that applies best to your Sendweether photos or video by e-mail Video calls (e.g., Skype) Upload or which photos or video on social media (e.g., Facebook or Instigram) Upload photos or video to YouTube/Winco or similar video-starring Streaming music via the internet (e.g., Spotify) Streaming music via the internet (e.g., Spotify) Streaming video or television programmes from the internet (e.g., YouTube, Winno, Notflix or national tolevision website) Download video, music or podeasts to your own device (not streaming) Ouline gaming (playing games on the internet, e.g., World of Wateraft or free colline games) Participate in virtual worlds (e.g., Second Life or similar online virtual worlds) Reed news or goesip on websites Use sawch engines (e.g., Google) Download reports or other kinds of larger text decuments Photo or video edicing (e.g. using Photoschop) Monitor your health (e.g. using pedemeter apps) 12. How often do you use a game convole for	About 2 hr t phone or t asse) Daily	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About I hour 11. How often do you use a mobile phone/smar feleuse mark the annuer that apolles heat to your Send/weetive photos or video by e-mail Video calls (e.g. Skype) Upload or watch photos or video on social media (e.g. Fueebook or Instigram) Upload photos or video on social media (e.g. Fueebook or Instigram) Upload photos or video on social media (e.g. Fueebook or Instigram) Upload photos or video in YeuTubo Wimoo or similar video-staring Streaming music via the internet (e.g. Spotify) Streaming music via the internet (e.g. Spotify) Streaming music via the internet (e.g. Spotify) Ordine paning (playing games on the internet, e.g. World of Wacreaft or free colline games) Play games (not online gaming) Participate in virtual worlds (e.g. Second Life or similar online virtual worlds (e.g. Second Life or similar online virtual worlds) Book and the gaming (e.g. using Photoshop) Booknice your health (e.g. using pedometer apps) 12. How often do you use a game convole for (private work the annuar that apolitis heat to your	About 2 hr t phone or t asse) Daily	ablet for At least weekly (but not every	3 hours	lore
7.1 How many hours do you use a mobile or sn Less than 30 minutes About 1 hour 11. How often do you use a mobile phone/smar please much the annier that applies best to your Sendweether photos or video by e-mail Video calls (e.g., Skype) Upload or which photos or video on social media (e.g., Facebook or Instigram) Upload photos or video to YouTube/Winco or similar video-starring Streaming music via the internet (e.g., Spotify) Streaming music via the internet (e.g., Spotify) Streaming video or television programmes from the internet (e.g., YouTube, Winno, Notflix or national tolevision website) Download video, music or podeasts to your own device (not streaming) Ouline gaming (playing games on the internet, e.g., World of Wateraft or free colline games) Participate in virtual worlds (e.g., Second Life or similar online virtual worlds) Reed news or goesip on websites Use sawch engines (e.g., Google) Download reports or other kinds of larger text decuments Photo or video edicing (e.g. using Photoschop) Monitor your health (e.g. using pedemeter apps) 12. How often do you use a game convole for	About 2 hr t phone or t asse) Daily Daily	At least weekly (but not every day) At least weekly (but not every day)	Less than every week	Never

8. Do you sometimes use a tablet (e.g. iPad)? (p	lease mark)		□ Yes	No
If yes: 8.1 How many hours do you use a tablet on a ty	pical week	day? (please mari	k)	
☐ Less than 30 minutes ☐ About 1 hour ☐	About 2 h	ours About	3 hours Mo	ore
9. Do you sometimes use a game console (e.g. P	layStation)	? (please mark)	□ Yes	□ No
If yes: 9.1 How many hours do you use a game console				
☐ Less than 30 minutes ☐ About 1 hour ☐	About 2 h	ours About	3 hours Mo	ore
10. How often do you use a laptop or PC for (please mark the answer that applies best to your	use)			
	Daily	At least weekly (but not every day)	Less than every week	Never
Send/receive photos or video by e-mail				
Video calls (e.g. Skype)				
Upload or watch photos or video on social				
media (e.g. Facebook or Instagram)				
Upload photos or video to YouTube/Wimeo or similar video-sharing				
Streaming music via the internet (e.g. Spotify)				
Streaming video or television programmes from the internet (e.g. YouTube, Wimeo, Netflix or national television website)				
Download video, music or podcasts to your own device (not streaming)				
Online gaming (playing games on the internet, e.g. World of Warcraft or free online games)				
Play games (not online gaming)				
Participate in virtual worlds (e.g. Second Life or similar online virtual worlds)				
Read news or gossip on websites				
Use search engines (e.g. Google)				
Download reports or other kinds of larger text documents				
The second of th				



similar online virtual worlds)





Worksheet "Meeting Café"

Meeting - Café



likes to work with young adults.	has already done a "peer- project" project with young adults.	is involved in environmental protection.	The most used gadget ofis a tablet.	already got angry about IT today.
knows different methods for teaching.	has the newest gadgets.	knows about green computing and is experimenting himself.	knows how young adults use IT.	Knows how to recycle mobile phones.
Knows how many computers are running at his/her company.	has read his eMails in the morning.	is keen on knowing, what will happen at this meeting.	knows how a smart-meter is working.	knows what a server does.
Knows which group of persons is online the most.	has some smart-home- devices at home.	has no computer at home.	is experienced on working with IT-technicians.	is using green search engines.





Worksheet "Google nows"

Google knows what you did last summer!

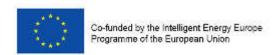
Marcello Martinez, a young boy from Austria
Look for information and count the mouse-clicks!

•	How old is Marcello Martinez?
•	Which place did he visit on August 10 th , 2014 and which transport mode did he use to come there?
•	Why did he spend the New Year's eve 2015/15 in bed?
•	Where is he working at?
•	Which sea did Marcello visit on January 1 st , 2015?
•	Which sports-team does she like most?

How many clicks did you count?_____

Which charity event did he join in August 2014?

Which nick name has Marcello?







Worksheet "Counting Mouseclicks!"

How many clicks do you have needed?

Every click on the internet consumes 0,3Wh (declared by Google) of electrical energy. How much energy did your research need?

Total consumption:

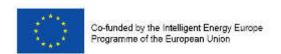
How long could you have used the following devices with this amount of energy?

Device	Power in W	Usage-time in h	Usage-time in min
LED-Lamp	10		
Laptop	60		
TV-Set	120		
Radio	15		
Refrigerator	50		
Gaming-PC incl. Screen	800		
Light bulb	75		

Now we imagine, that ha	alf of the worldwide internet-users do a search like that a day.
With a given amount of	2,7 billion users (as of 2014), there would be a total amount
of	clicks.

How many kWh were used during these tasks?

The average household needs 4500kWh a year. How many households could have been fully supplied?







Worksheet "Energy in a Smartphone"

How much energy is contained in a Smartphone?

In a Smartphone there are 220 kWh of energy.

• From the mining of raw materials to the manufacturing of the components

0	Mainboard(+Display)	91 kWh
0	Plastics	1 kWh
0	Aluminium	1 kWh
0	Glass	0,5 kWh
0	Rest(small parts)	2,5 kWh
em	bling	120 kWh

To produce 1kWh by yourself, you would have to pedal on a bicycle with an attached generator for ten hours.

4 kWh

How long do you have to pedal to produce just one smartphone?_____

Other electronic devices in comparison:

Transport

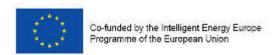
Device	embodied energy	pedaling (Duration) in h
Smartphone	220 kWh	
Laptop	400 kWh	
Flat Screen	1450 kWh	

In comparison the average annual power consumption:

Device	Annual consumption
Smartphone	100 kWh
Laptop	90 kWh
Flat Screen	91 kWh

How long would i have to use my smartphone, Laptop or flatscreen, so that i have used the same
amount of energy, which is already embodied?

Smartphone	Laptop	Flat Screen



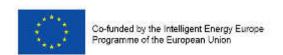




Daily Reflection during the IT-peer Training

Name of the school:	Class:
Name of the student:	
Name of the teacher:	
Date:	
Issues:	

- 1. What was most interesting today?
- 2. What can I integrate in my future peer-work?
- 3. About what do I need more in depth information?
- 5. Everything I still want to tell:







Example for a Certificate







Example for a Certificate



Name

School

successfully completed the technical and methodical training to become an

GREEN IT-PEER

in the schoolyear 2014/15 to the extent of 24 teaching units.

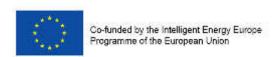
Through peer work she directly reached 150 further students and informed them about the possibility for energy saving in IT.

Name of politician function

Managing director Name of company











Worksheet:

Google Game

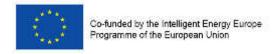
Set Up

- (PC/Notebook/Tablet) with internet connection
- Two browser windows simultaneously open
- A list of words (nouns)

Rules

- Form two groups
- Give the same word (nouns) to each group and give them 30 seconds time to form a compound (a word consisting of components that are words as *rowboat, strawberry, goldfish* etc., e.g.)
- Explain beforehand that players are only allowed to make noun-noun-compounds (not *highschool*, e.g.), so that the results are comparable
- Explain beforehand what Google-purpose the word will serve (three options: the fastest search*, the most hits, the least hits)
- Play three rounds for each kind of search
- Keep a list, of which group won how many rounds
- Reflection of the game with material (see next page, source: http://www.truteam.com/404/?aspxerrorpath=/ blog/2010/03/google-energy-use-infographic/)

^{*}Makes visible that Google-searches take different routes through the net, every time, and that data travels long distances, is nicely combined with information on data traffic, servers etc.







Worksheet: Google Game - 2



As the world's largest search engine, Google processes nearly 13 Billion monthly searches. They are lable to handle such large volume of data because they have huge datacenters with thousands of servers, capable of handling immense capacities. Such large amounts of computing power require a great deal of electricity. This electricity consumption translates directly into carbon emissions. Take a look below:



