

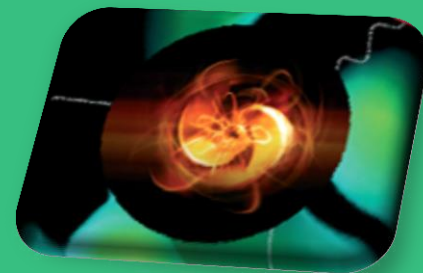


Zavod
Republike
Slovenije
za šolstvo

Konferenca učiteljev naravoslovnih predmetov

Od opazovanja in raziskovanja do znanja

Laško, 19. november 2013



Delavnica in predstavitev **Vpliv človeka na okolje**



Ogljični odtis
(S. Kregar, S. Slavič
Kumer)

**- Čistilna naprava-
model**(B. Dvornik)

- Učilnica v naravi
(M. Kuraj, B. Gojtan, K.
Jug)

Ekosferna družba

- Nekoč je človek izkoriščal naravne vire predvsem iz ekosistemih, ki so ga obdajali.
- Danes izkoriščamo naravne vire iz vse bolj oddaljenih krajev.



<http://www.featurepics.com/online/Eco-Sphere-1718903.aspx>

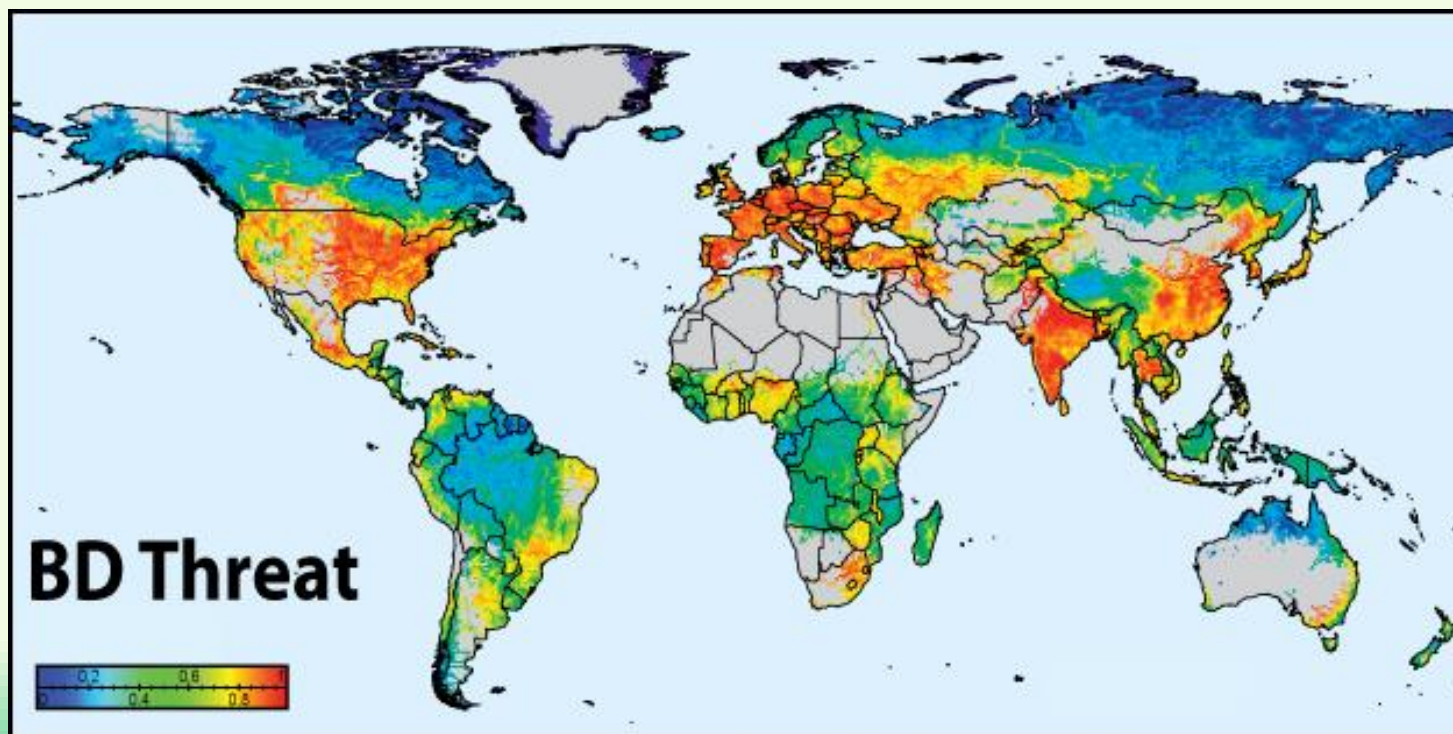
Ekosistemske storitve ali kaj nam nudijo ekosistemi?

- Hrana
- Pitna voda
- Zrak
- Gorivo
- Gradbeni material
- Ogrevanje
- Preprečevanje erozije
- Preprečevanje širjenja bolezni, ...



Kdaj ekosistem izkoriščamo trajnostno?

- Kadar se v ekosistemu viri kljub izkoriščajo lahko obnovijo.
- Kadar se ohranja biološko raznovrstnost.



SPLETNA UČILNICA za VITR

- predstavitev projekta in mreže,
- povezave do organizacij, društev ... ki spodbujajo VITR,
- kriteriji kakovosti,
- pogoji za sodelovanje šol v projektu,
- predstavitev šol in njihovih projektov.

<http://skupnost.sio.si/mod/resource/view.php?id=259398>

CoDeS

Spletna stran projekta:
<http://comenius-codes.eu/>



Comenius



Education and Culture DG



Je projekt v okviru mednarodne mreže ENSI. Osrednja tema projekta je sodelovanje med šolami in različnimi deležniki v duhu trajnostnega razvoja.



Trajanje: 1.10.2012-30.9.2014

Koordinator: Education for Sustainable Development in Switzerland (education21), vodja Christine Affolter

Osnovni cilji projekta:

- predstaviti primere uspešnega sodelovanja med šolami in različnimi skupnostmi/deležniki na področju VITR,
- spodbujanje in vzpostavljanje sodelovanja šol z okoljem,
- spodbujanje didaktičnih pristopov in metod za aktivno učenje.





Prihajajoči dogodek

ZAKLJUČNA KONFERENCA *Barcelona, 2014*

Designing a sustainable
future through school
community collaboration

www.comenius-codes.eu

CoDeS
Schools and Communities - Working together
on Sustainable Development

Final Conference - Barcelona, May 21-23th, 2014

UAB
Universitat Autònoma
de Barcelona

Lifelong
Learning
Programme



Pričakovani rezultati

- **Vodnik** (Travelling guide for collaboration)
- **Zbirka orodij** (Toolbox) za uspešno sodelovanje
- **Digitalni priročnik** (Digital Handbook)
- **Raziskava Sodelovanje med šolo in skupnostjo v izoliranih okoljih in vloga IKT**
- **Publikacija Ključni elementi sodelovanja med šolo in skupnostjo za trajnostni razvoj**
- **Blog primerov** (CoDeS Cases Blog)
- **Spletna stran/portal**: ICT tools for school-community collaboration



-**BLOG PRIMEROV** (CoDeS Cases Blog)

Kategorije:

<https://codescases.wordpress.com/>

- sodelujoči (lokalna skupnost, družine, učitelji, občani, zasebne organizacije...),
- skupnosti (mesta, država, regija, soseska...),
- države (13 sodelujočih),
- šole (srednje šole, osnovne šole, vrtci, glasbene šole, mreže šol),
- področje (kmetijstvo, energija, VITR, transport, arhitektura, voda, življenjski slog..),
- metode, sodelovanje, programi skupnosti...



Primer iz Slovenije: **UREJANJE ŠOLSKEGA VRTA IN NJEGOVA PROMOCIJA V LOKALNEM OKOLJU**, OŠ Domžale

PRIMERI PREDSTAVLJENIH OKOLJSKIH PROJEKTOV SODELOVANJA MED ŠOLAMI IN DRUGIMI DELEŽNIKI

Primer iz Slovenije: UREJANJE ŠOLSKEGA VRTA IN NJEGOVA PROMOCIJA V LOKALNEM OKOLJU, OŠ Domžale



Tending the school vegetable garden and promoting it locally

author: Katarina Vodopivec Kolar (MA) mail: kvk.sola@gmail.com

DOMŽALE PRIMARY SCHOOL, Bistriška 19, SI-1230 Domžale, Slovenija, <http://www.os-domzale.si>

Primary public school, center of town Domžale, 626 pupils, 68 teaching staff, established 40 years ago.

Domžale is a municipality of approx. 34,000 inhabitants in 51 settlements, Domžale itself being the biggest with a population of over 12,500. Domžale is located close (approx. 17 km) to Slovenia's capital Ljubljana.

FOCUS : The school garden is an integral part of the practical aspect of teaching natural sciences at our school. It effectively promotes good work habits and illustrates the importance of self-sufficiency for the local environment.

AIM OF THE COLLABORATION:

- Furthering pedagogical work and work habits of pupils at the school vegetable garden with the purpose of promoting the importance of self-sufficiency and cultivation of vegetables in the local environment.
- Combining knowledge of several subjects within the school curriculum and of several members of the Integrated several natural science subjects of the school curriculum into field work (examining ecosystems in the school's vicinity).
- Collaborating with third parties – Domžale municipality, the local community, nation-wide projects (International Eco-Schools project, Network of school gardens, several volunteer projects etc.) – by following and responding to calls and appeals, and often to promote collaboration by ourselves, in order to direct special attention to topics of ecology and preservation of nature.



ESTABLISHING THE SCHOOL GARDEN



TENDING THE SCHOOL GARDEN



ORCHARD PLANTING



PROMOTION AT BIO DAY

DESCRIPTION OF THE COLLABORATION

- The school vegetable garden was established 3 years ago as part of the school's »Ecoday«.
- The school garden is gradually growing. At first, it had only been a herb garden, but was later expanded to include a vegetable garden and after that, an ornamental garden as well. We planted a small orchard alongside it with the help of the local community.
- We plan to establish an »open-air classroom« with the garden serving as the focal point of practical lessons in natural science subjects in nature itself, but also as a space for relaxation for younger pupils.
- The school vegetable garden is invariably represented on the organic market festival Bio Day, where we inform the local community of our work and its fruits.
- The preparations for the Bio Day festival (harvesting and processing crops, drying herbs, preparing food and drink) are an efficient reminder of the importance of self-sufficiency for the pupils and an important motivation to keep cultivating the garden.

DESCRIPTION OF SOME TOOLS - CONTRIBUTING TO LEARNING IN ESD

Cultivating the school garden is vertically incorporated into most of the school curriculum's natural science topics. Pupils may learn basic gardening skills and maintaining a man-made ecosystem as well as about biodiversity and the differences between man-made and natural ecosystems. They may observe natural cycles and the interconnections of the living world in the school's immediate surroundings.

Avtorji: Katarina Vodopivec, Daša Sojer, Jelka Miklavčič



CoDeS Case Bayston Hill in UK

Bike it!

<http://codesbaystonhill.wordpress.com/>



CoDeS Case BSF in UK

School-community collaboration for the engagement of pupils, teachers and governors in the science, engineering and technology of “carbon neutral” schools

<http://codesiesdbsf.wordpress.com/>



Spletna stran/portal:ICT tools for school-community collaboration

www.sustain.no/codes

CoDeS

Welcome to our collection of international ICT tools for school-community collaboration!

Here you will find a selection of learning activities for schools that can be used as a starting point for school-community collaboration. The activities is recommended by the CODES project, a Comenius multilateral Network funded by the Lifelong Learning Program from EU that focuses on school community collaboration addressing sustainability.

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Extreme weather

Investigate and report consequences of extreme weather in your community. Interview the locals about their views on climate change.



Tree phenology

Investigate and report seasonal variations of trees. This European school project started up in 2009, and is still running.



CO2 on the way to school

Investigate and report how much Co2 your class use on the way to school.



Check the school's energy use

How much energy is used in your school?



Climate change in the classroom

A reflective role play about climate negotiations.

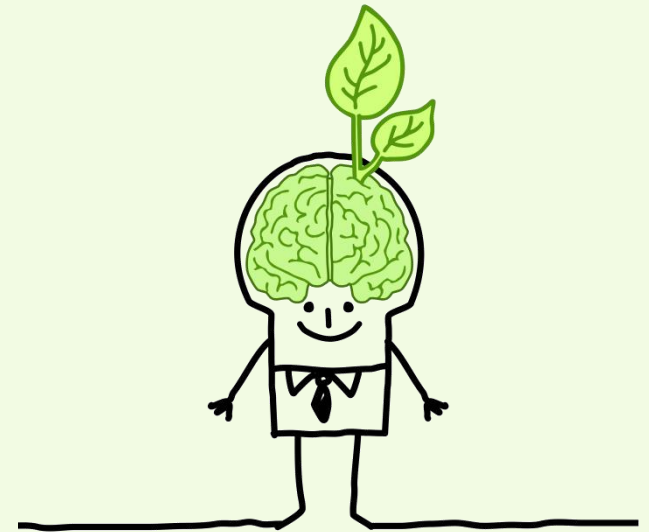
Ogljični odtis (carbon footprint)

Je seštevek izpustov toplogrednih plinov, ki jih neposredno ali posredno povzročijo organizacija, izdelek, storitev ali druga aktivnost, ki povzroča ali prispeva k povzročanju toplogrednih plinov v določenem časovnem obdobju. Izražamo ga z enoto ekvivalenta CO₂.



Nizko ogljična družba

- Temelji na načelih trajnostnega razvoja
- Emisije toplogrednih plinov so nižje od absorpcijske sposobnosti naravnega ekosistema

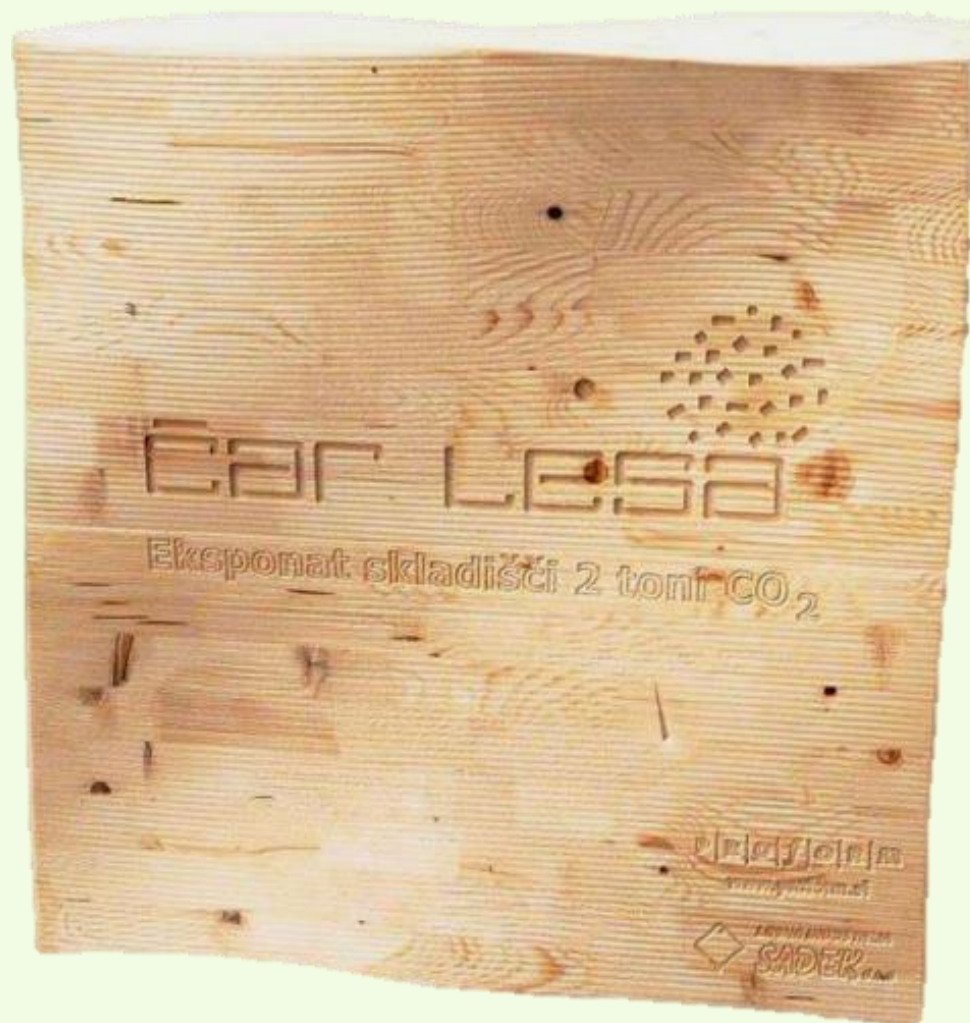


Kdaj smo ogljično nevtralni?



Ponor ogljika

Je kateri koli proces, dejavnost ali mehanizem, ki odstranjuje toplogredni plin iz ozračja.



Vir: Pohleven, F. <http://www.se-f.si/uploads/11/10/111032df686d0b5cf3c65c7de0d58ea7/POHLEVEN - E forum POSTOJNA www.pdf>

Konferenca učiteljev naravoslovnih predmetov
Laško, 19. november 2013



Delavnica: CO2 na poti v šolo



10 korakov

Poglej podatkovni list

Vnesi podatkovni list

Naloži klimatsko idejo

Naloži fotografije

Naloži projekt

Deset korakov kampanje

1. Planirajte in pripravite se za kampanjo (učitelji, po možnosti skupaj z učenci). Seznanite se s spletno stranjo, o pristopu in o aktivnostih. Naredite šolski/razredni plan za svoje delo pri kampanji. (Glejte tudi **Strani za pomoč** za namige o metodah). Poiščite lokalne partnerje ali partnerje v šolah in planirajte, kako boste sodelovali).

Not logged in.

► Log in



<http://co2nnect.org/>



Delavnica: Pomen samopreskrbe

Učenci razumejo:

- pomen trajnostnega izkoriščanja naravnih virov,
- zmanjšanje tveganja vnosa tujerodnih vrst pri koriščenju naravnih virov iz domačih ekosistemov,
- pomen skrajšanja dolžine prevoza za zmanjšanje ogljičnega odtisa.



Popis živil in urejanje podatkov

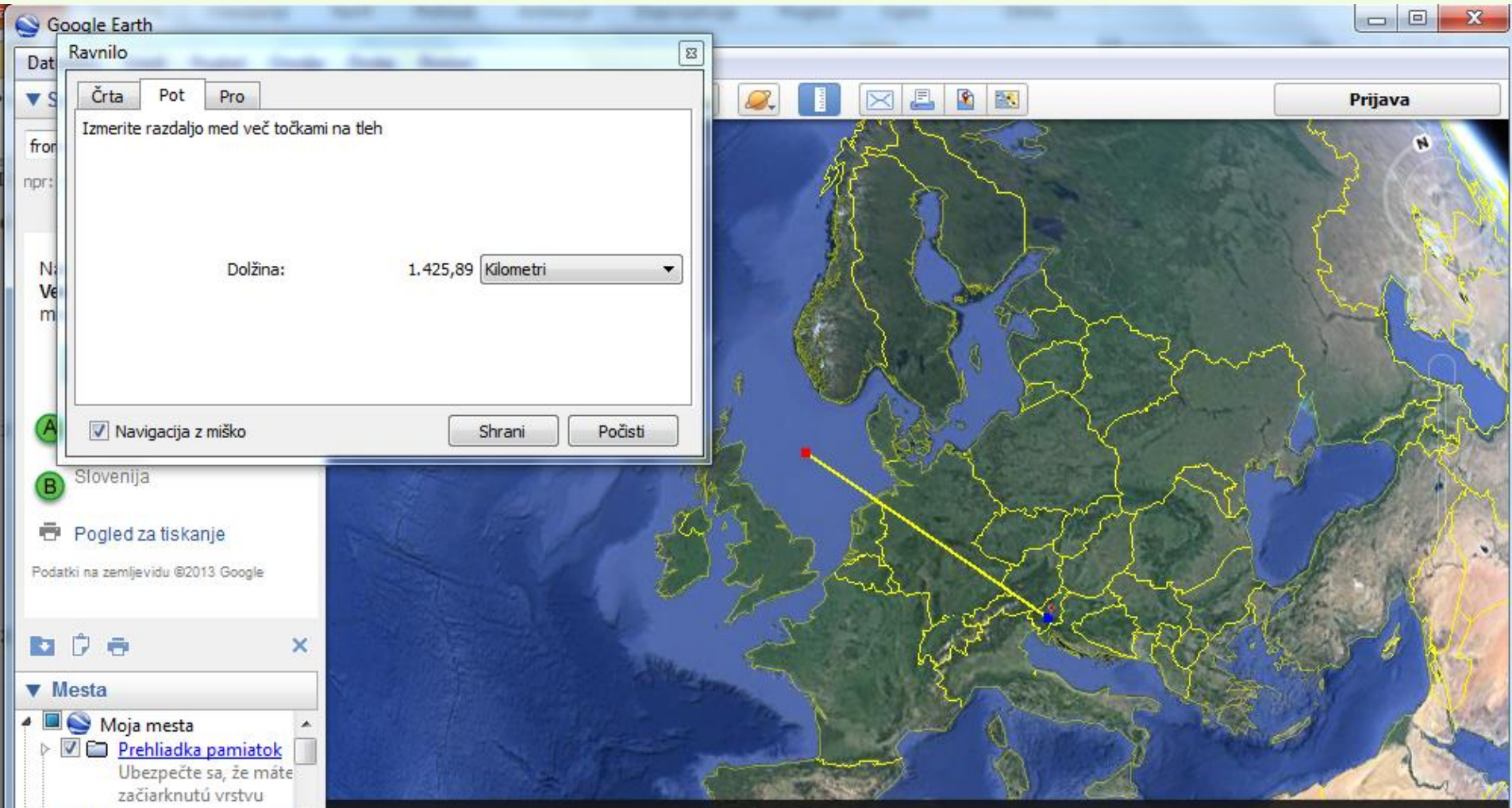
https://docs.google.com/document/d/19_xJsZY8cWBQqPIgxHUnSecIAzhiedEifT_3q0HlfFU/edit



IME ŽIVILA	<i>Zamrznjeni morski sadeži</i>
VRSTE ORGANIZMOV V ŽIVILU	
IZVOR ORGANIZMOV: država	
celina	
podnebni pas	
RAZDALJA TRANSPORTA ŽIVILA	
IZRAČUNAN OGLJIČNI ODTIS	



Izračun razdalje transporta (google earth, google map)



Kaj delamo

- Plan B za Slovenijo
- Zeleni razvojni preboj
- Zelena proračunska reforma
- Ogledalo vladi
- Tretji člen
- Slovenija znižuje CO₂: dobre prakse
- Evropska zelena pisarna
- Ogljični odtis
- ČISTA ZMAGA
- Trajnostni razvoj: predavanje in delavnica
- Krilca

Izračunaj svoj CO₂ odtis

elektrika in ogrevanje v gospodinjstvu

število članov v gospodinjstvu:

mesečna poraba

električna energije iz omrežja:
(vrednost najdete na položnici za elektriko)

vrednost

kWh

letni rezultat

kg CO₂

kg CO₂

Nasveti - elektrika

skupaj elektrika na osebo na leto:

potovanja z letalom v letu dni:

destinacija iz Ljubljane:

Norveška - Oslo

število povratnih letov:

1

izbrani leti:

Norveška - Oslo (1x350)

letni rezultat

350 kg CO₂

Nasveti - letalski prevoz



492-1268 kg CO₂

1268-2650 kg CO₂

2650-3748 kg CO₂







več kot 3748 kg CO₂



home

Calculate and offset your carbon footprint

carbon calculator

 flight	 car	 quick	 gift	 house	 business
---	--	--	--	--	---

flight emissions

Flying from:

Going to:

Via (longhaul flights):

Passengers:

Flight type:
 Return One way

carbon emissions

0.33
tonnes of CO2

£2.49
cost to offset

1826
miles travelled

add to basket

buy offsets

Hello...

This calculator works out how much CO₂ your lifestyle emits in a year. It shows what impact you are having on the environment.

If you get stuck ask your teacher or your parents to help you.

When you have finished, try again. This time see what changes you could make to reduce your footprint.

What happens if you watch half an hour less TV a day, or take a shower instead of a bath?

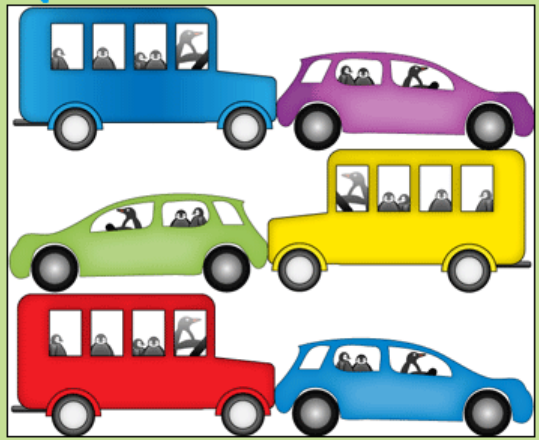


The Kids Carbon Calculator

Transport

Your CO₂ emissions from travelling to and from school are:

1618 kgs CO₂ every year



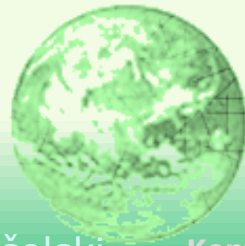
Walking or riding a bike produces no CO₂ at all!



Predlogi za raziskovalna vprašanja in diskusijo

- V čem se razlikujeta „nizko“ in „visoko“ ogljični način življenja?
- Katere ekosisteme slovenski kupec vsaj posredno izkorišča?
- Kakšna je ocena ogljičnega odtisa nekega transporta, izdelka, obroka, našega vsakdana...?
- Iz katerih delov sveta je vnos tujerodnih organizmov najbolj verjeten?
- ...

Medpredmetna obravnava





“We’re looking for someone with an MBA, five years of sales and marketing experience, and a low-carbon footprint.”



HVALA ZA POZORNOST!

„Prihodnost je bolje ustvarjati, kot pa jo napovedovati.“

Viri in literatura

- <http://skupnost.sio.si/mod/resource/view.php?id=259398>
- <http://comenius-codes.eu/>
- www.sustain.no/codes
- Vrezec, A., Vrh Vrezec P. (2013) Samopreskrba slovenske družbe in njen globalni vpliv na ekosisteme na Zemlji. Posodobitve pouka v osnovnošolski praksi. Ljubljana, Zavod RS za šolstvo, str. 164-169.
- <http://www.umanotera.si/index.php?node=263>
- <http://www.climatecare.org/home.aspx>
- [http://www.sef.si/uploads/11/10/111032df686d0b5cf3c65c7de0d58ea7/POHLEVEN - E forum POSTOJNA www.pdf](http://www.sef.si/uploads/11/10/111032df686d0b5cf3c65c7de0d58ea7/POHLEVEN_-_E_forum_POSTOJNA_www.pdf)

