



THE **GLOBE** PROGRAM

Welcome to the Autumn Campaign

Introduction to Autumn Tree Campaign
plans, green-down and carbon activities
and tree height measurements.

Lenka Kleger, GLOBE Europe and Eurasia RCO
20 September 2023



WHAT IS PHENOLOGY?

- Response of living organisms' to seasonal and climatic changes in the environment - animals and **plants**
- One of the oldest areas of environmental science
- Phenological **data are important** for various aspects of our life
- Easy and costless **way, how to prove climate change**



2023 AUTUMN CAMPAIGN

- Greening-down of trees
- September → November / December
- Over 200 school teams from 18 countries

Croatia, Czech Republic, Estonia, Georgia, Germany, Greece, India, Ireland, Italy, Lithuania, Netherlands, North Macedonia, Poland, Portugal, Slovakia, Slovenia, Ukraine, USA

- Cooperation with scientists



CHARLES
UNIVERSITY



UNIVERSITY
OF LATVIA



WHY TO BE INVOLVED

- Learning about nature in nature
- Sharing and cooperation in an international environment
- Source of information for schools projects and scientists



WHAT TO EXPECT

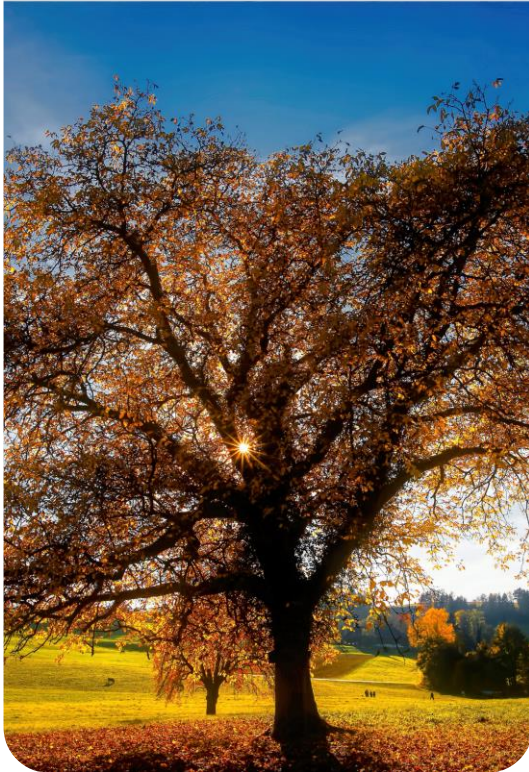
- Activities to learn about your tree
- Newsletter
- Certificate for active schools

All activities are voluntary.
Let us know, how it goes!

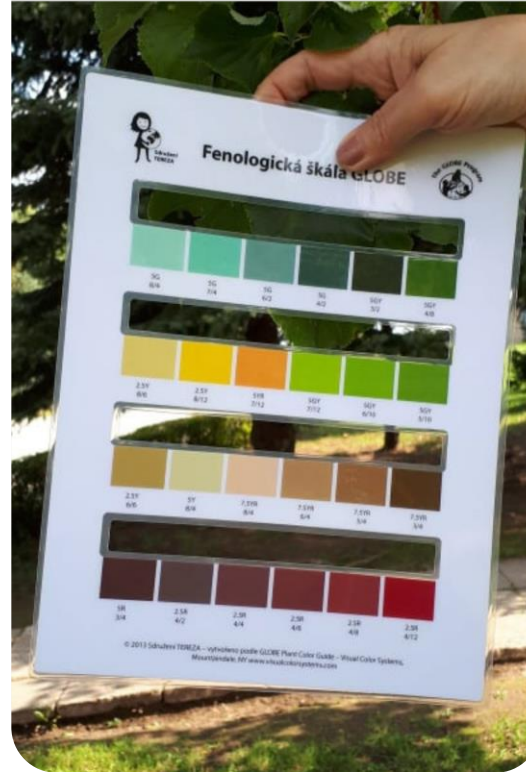


GREEN-DOWN ACTIVITIES

ACTIVITY 1 MY TREE



ACTIVITY 2 COLOR CHANGE



ACTIVITY 3 GREEN DOWN DATA



ACTIVITY 1 — MY TREE

- Find a **suitable tree**
 - Close
 - Low branch — south facing
 - Not shaded, fertilised...
- **Describe the tree** and the site where it grows
- Mark **4 leaves** at one branch
- Take pictures with GrowApp
- Share pictures and results at the discussion forum



ACTIVITY 2 — COLOR CHANGE

- Twice per week until leaves fall down
- Observe color change and falling of leaves and record
 - the dominant color using the **GLOBE Plant Color Guide**
 - snow covered
 - fallen
- Optional: record also temperature and precipitation



GLOBE

5G
6/2

5G
4/2

5GY
3/2

5GY
4/8

5GY
6/10



- Record data into the data sheet

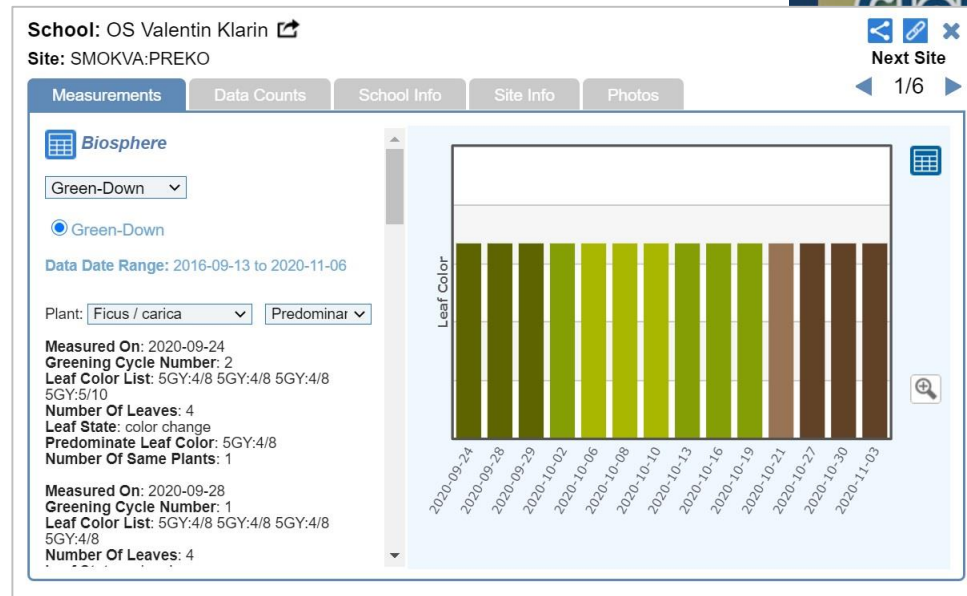
Example of Completed Green-Down Data Sheet

Tree, Shrub, and Grass Green-Down

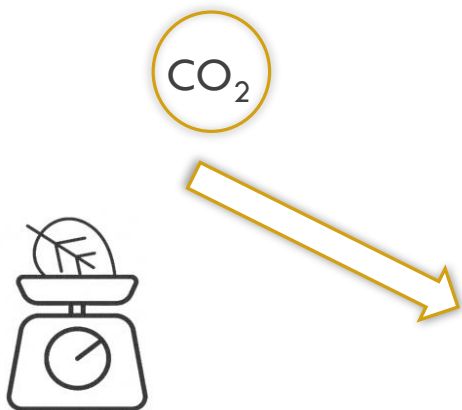
Date YYYY-MM-DD (year-month-day)	Growing season cycle (1, 2 or 3)	Leaf 1 (Color, fallen, snow covered)	Leaf 2 (Color, fallen, snow covered)	Leaf 3 (Color, fallen, snow covered)	Leaf 4 (Color, fallen, snow covered)	Data submitted to GLOBE
2013-09-30	1	5 G 7/4	5 G 7/4	5 G 7/4	5 G 7/4	<input type="checkbox"/>
2013-10-03	1	5 G 7/4	5 G 7/4	5 G 7/4	2.5 Y 8/6	<input type="checkbox"/>
2013-10-07	1	5 G 7/4	2.5 Y 8/6	5 G 7/4	2.5 Y 8/6	<input type="checkbox"/>
2013-10-11	1	5 G 7/4	2.5 Y 8/6	2.5 Y 8/6	2.5 Y 8/6	<input type="checkbox"/>
2013-10-14	1	5 G 7/4	2.5 Y 8/6	2.5 Y 8/6	2.5 Y 8/6	<input type="checkbox"/>
2013-10-16	1	2.5 Y 8/6	2.5 Y 8/6	SNOW COVERED	FALLEN	<input type="checkbox"/>

ACTIVITY 3 — MY GREEN-DOWN DATA

- Upload your green-down data to database on GLOBE website
 - Login to your **GLOBE account**
 - Use data collected during activities 1 and 2
 - New – uploading data using the GLOBE Observer (observer.globe.gov)
- Try GLOBE Visualization tool
 - See the data on world map
 - Draw and share a graph with your data
- Compare your data with
 - another school
 - your data from previous years

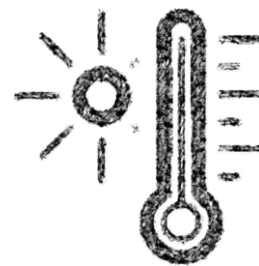


WHAT ELSE CAN YOU DO?



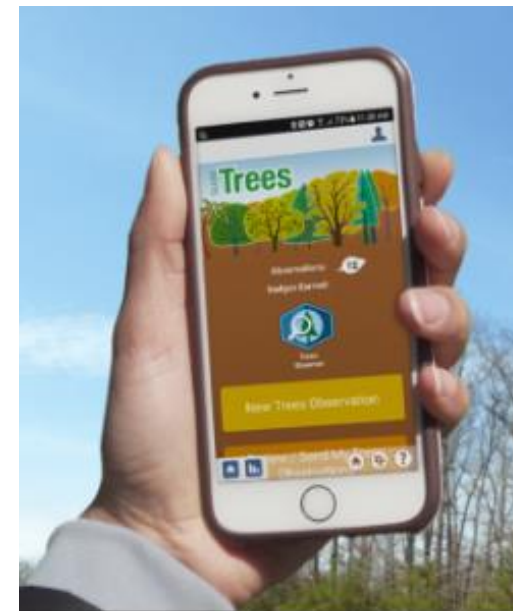
Find out, how much carbon is stored in leaves

How leaves lose weight



Measure tree height with clinometer or using GLOBE Observer tool

How tall is my Tree



SHARE YOUR RESULTS - GROWAPP

- Simple mobile app
- Time lapse videos from you pictures visible in a map
- Use # to describe tree species and your school



www.growapp.today

<https://www.globe.gov/web/european-phenology-campaign/overview/growapp>

SHARE YOUR RESULTS - DISCUSSION FORUM

- Post your pictures and results, get e-mails with news from other schools
- How to do it?
 - Sign in to GLOBE account
 - Choose News and discussion category „2023 Autumn“ (1)
 - ✓ Add New Thread (2)
 - ✓ Add pictures
 - ✓ Publish your post

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European Phenology Campaign

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[Our Measurements](#)
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[2023 Spring](#)

News and Discussion



Here members can share their pictures, results and ideas with other community members. Posts will be automatically sent by email to all subscribers.

Instructions on how to subscribe to the forum and how to post are available [here](#).

Categories Recent Posts Statistics

Home

Categories

-  2023 Autumn
Post here for the 2023 Autumn Campaign
0 Categories
6 Threads
-  (archive) 2017 Autumn
0 Categories
18 Threads

2

Categories Recent Posts My Posts My Subscriptions Statistics

Home > 2023 Autumn

2023 Autumn

Add Category **New Thread**

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2023 Spring

My Tree in Autumn



In autumn, the trees shine with shades of yellow and red as they prepare for winter sleep. Their leaves gradually change colour and fall down in a process called green-down.

Let's experience the beauty of autumn change together!

Schools registered for the campaign will receive **three educational activities for students** and a **regular newsletter** with invitations to webinars. Active schools will be awarded a **GLOBE certificate** for being part of the vibrant campaign community!

Join the 2023 Autumn Campaign - register now!

Registration is open by September 15. For further information about the campaign, please read below or email lenka.kleger@terezanet.cz.

www.globe.gov/web/european-phenology-campaign



How to start?

Choose one or more of the seven species (hazel, fig, lime, oak, sour cherry, birch, beech) that GLOBE students monitor throughout Europe in autumn. Follow the activities (below) and watch how your tree changes during autumn.



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- Invitation to upcoming webinars
- Recordings of archived webinars
- Trees Around the GLOBE Campaign Webinars



THE GLOBE PROGRAM

EUROPEAN PHENOLOGY CAMPAIGN WEBINAR

Our Autumn With Trees

Teachers and students share experiences and inspiration from the Autumn Campaign.

29 November 2023, 1 pm CET on ZOOM



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European Phenology Campaign - Inspiration from GLOBE Schools

Get inspired by student activities and research projects

Videos

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One day of Poltava Nature Researchers



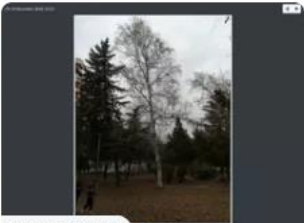
Video • 01:02

UK_Poltava video

Meet GLOBE researchers from Poltava School No38, Ukraine. Join them for a visit to their autumn tree.

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With GrowApp, time flies fast




growapp.today

Padlets

2

Great Autumn International Cooperation




Padlet • petra sekulic

School from Croatia, Czech Republic, Switzerland and Ukraine started cooperating within the Phenology Campaign...and they don't stop.

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2022 Phenology Collaboration



Padlet • zrinka klarin

European Phenology Campaign

Padlet board used for collaboration of Elementary school Šime Budinić Zadar, Croatia and CŠOD, Slovenia filled with interesting information


Wakelets

wakelet.com

The teams from Ukraine, the Czech Republic and Croatia were connected by the observation of the same tree species - oak. They shared their results via an online noticeboard.

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A year with trees in Osijek, Croatia



wakelet.com


An online Wakelet collection for team collaboration and sharing information about phenology research was created by the team from OS Ivan Filipovica Osijek, Croatia.

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Book Creators

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Autumn Campaign 2022 in OS Rugvica




read.bookcreator.com

Student activities, collaboration with several schools, GrowApp... all in one wonderful online book.

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Virtual book of autumn tree activities




read.bookcreator.com

The team of Primary school

Presentations

+

Spring 2021 at Česká Třebová, Czech Republic




globe

In which lessons you can do phenology? Can students enter data? This and a lot more in the presentation by Česká Třebová High School.

2

Autumn leaf art




PDF

Beautiful and creative art pieces made from autumn leaves by students of ICPG 3 San Paolo Perugia, Italy

Carbon

+

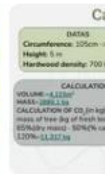
Primary s Slovenia



CARBON CYCLE SCHOOL DRAG

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Birch tree




Ca

DATAS
Circumference: 105cm
Height: 1 m
Hardwood density: 700 kg/m³

CALCULATION
VOLUME = 4,50 m³
MASS = 3150 kg
CALCULATION OF CO2 (in kg) mass of tree (kg) of fresh tree biomass mass: 3076 kg can 120% 3691 kg

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What a tree How a tree stores ca



ene

YouTube

GLOBE YEAR OF CLIMATE AND CARBON

- **August 2023 - August 2024**
- **Aim - climate education and an understanding of carbon in the Earth System**
- Studying local ecosystem, data collection, learning activities, Green-up, Green-down and Carbon Cycle protocols, webinars
- Aligned with the European Phenology Campaign and other ongoing climate-related GLOBE initiatives
- Connected with the [2024 International Virtual Science Symposium \(IVSS\)](#) - theme "Climate Investigations: Understanding Earth as a System."
- Details at: <https://www.globe.gov/web/year-of-climate-and-carbon-campaign-1/year-of-climate-and-carbon-campaign>







THANK YOU!

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lenka.kleger@terezanet.cz

www.globe.gov/web/european-phenology-campaign

