

Trees and Phenology - Data Literacy Learning Activities

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Data Literacy Toolkit

- A collection of **short learning activities** designed to enhance and expand students' data literacy skills
- Two learning activities per sphere:

 Atmosphere

 Hydrosphere

 Biosphere

 Pedosphere

Who is the toolkit for

- **GLOBE teachers** introducing their students to data literacy skills at a beginner's level
 - Elementary to high school students
- **GLOBE teacher trainings**
- Audience from many different countries using **different languages**



- Based on examples from GLOBE teachers
- Tested by GLOBE trainers

Content of each activity

- Introduction
- Questions for students
- Data to be used for the activity
- Answers to the questions for students

What is (not) needed to do the activities

- Primarily designed for classroom use
- No specific GLOBE measurement tools or practical measurement skills required
- Extensive knowledge of the activity's topic not needed

Europe and Eurasia

GLOBE Tips for Learning under COVID-19

About & Contacts

Countries

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Events

GLOBE Slice

Equipment Suppliers

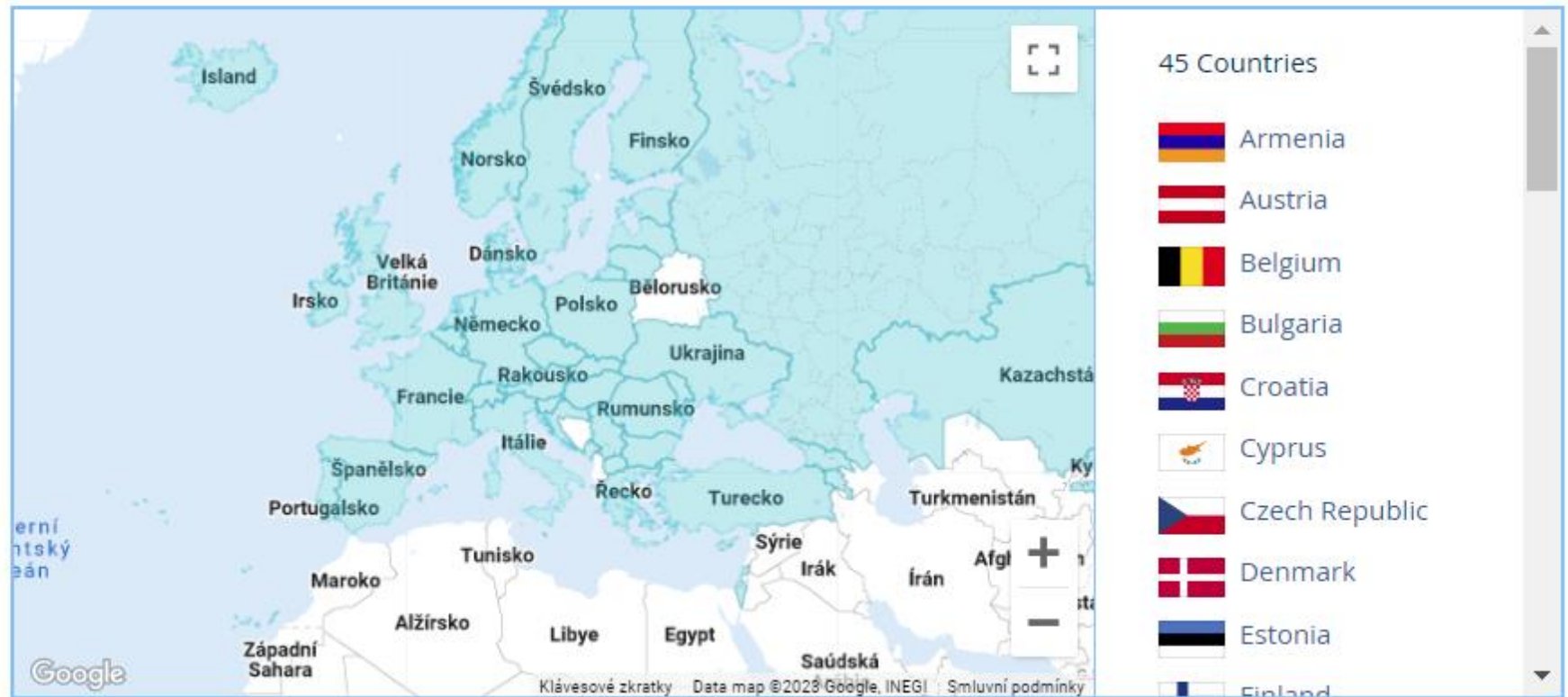
Collaborating Organizations

Documents

Learning Activities

Europe and Eurasia

Países | Schools / Informal Education Organizations | Mediciones - Últimos 7 Días



List of Data Literacy Activities

Each activity **can be downloaded in Pdf or in Power Point version** (pptx format) suitable for translations.

Atmosphere

- Air Temperature Across GLOBE During a Year - [Pdf](#) / [Pptx](#)
- Air Temperature Across GLOBE on the Same Day - [Pdf](#) / [Pptx](#)

Biosphere

- Comparison of Tree Height Measurements - [Pdf](#) / [Pptx](#)
- Comparison of the Green-up Timing at Different Locations - [Pdf](#) / [Pptx](#)

Hydrosphere

- Air and Water Temperatures Changes during the Year - [Pdf](#) / [Pptx](#)
- Water Temperature Trend - [Pdf](#) / [Pptx](#)

Pedosphere

- Soil Properties Along the Cetina River Basin - [Pdf](#) / [Pptx](#)

Data literacy learning activity 1 + outdoor practice

Evaluation of Tree Height Measurement Data (12-15 years)

- **Topic:** Comparison of tree height measurement results using clinometer and GLOBE Observer app
- **Skills developed:** the ability to compare two data sets, analyze and interpret the differences and recognize and identify potential sources of measurement error in these data sets
- The activity is available here: [Pdf](#) / [Pptx](#)

Data literacy learning activity 2

Comparison of the green-up timing at different locations (10-12)

- **Topic:** Comparison of the timing of budburst and leaf growth at two locations in Croatia (Varaždin and Belišće)
- **Age of students:** Skills developed: comparing and examining collected datasets, calculating average, finding potential measurement errors
- The activity is available here: [Pdf](#) / [Pptx](#)



Autumn Phenology (Green-down observations)

- Observation of the leaf color change twice per week until leaves fall down
- Recording the observation:
 - the dominant color using the GLOBE Plant Color Guide
 - snow covered
 - fallen
- Optional: record also temperature and precipitation

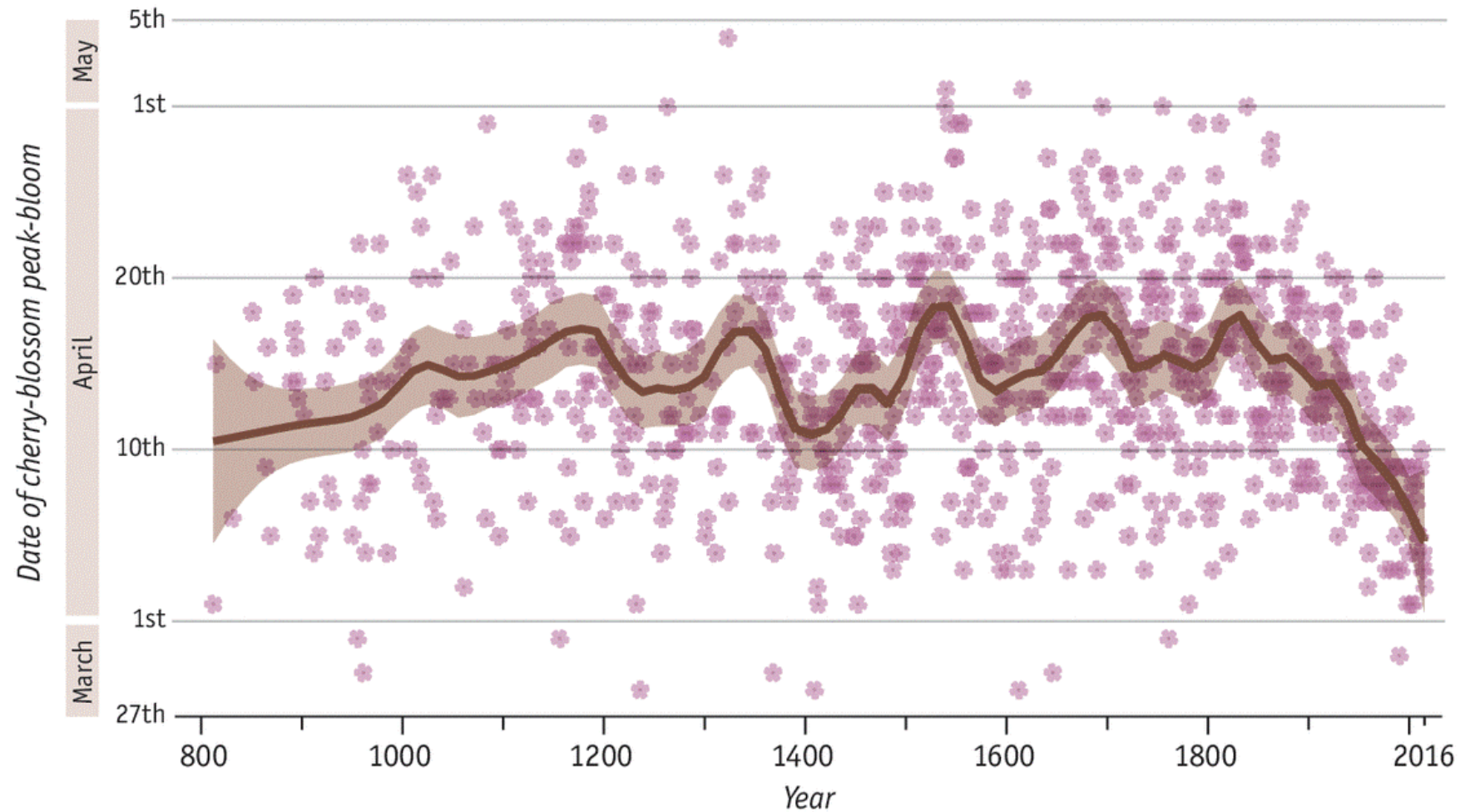


Importance of Phenology observations for understanding climate change.

Cherry bomb

Date of cherry-blossom peak-bloom in Kyoto, Japan, 800AD - 2016

— Trend ■ Confidence interval



Source: Yasuyuki Aono, Osaka Prefecture University

GLOBE European Phenology Campaign Carbon Activities

- European Phenology Campaign offers a **set of activities focused on the role of trees in the global carbon cycle.**
- The activities are **available here:** <https://www.globe.gov/web/european-phenology-campaign/overview/download-materials>
- Following pages show examples of student work done following the activities

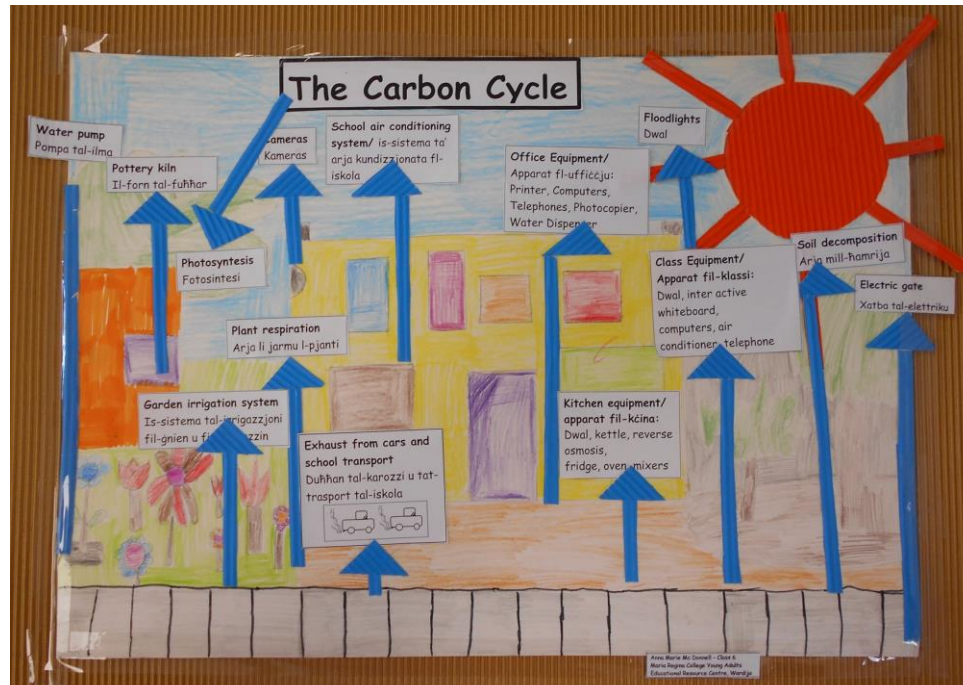
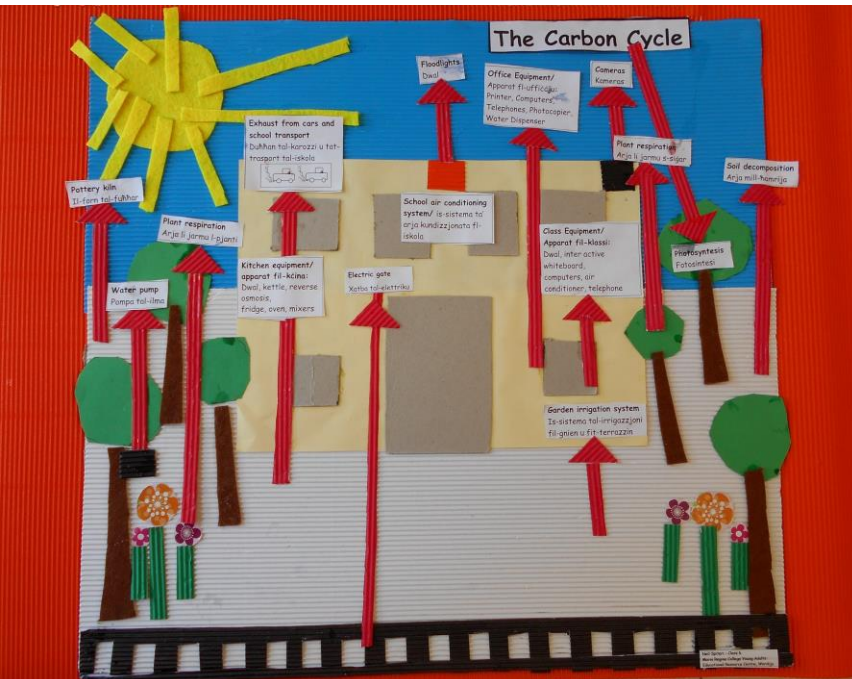
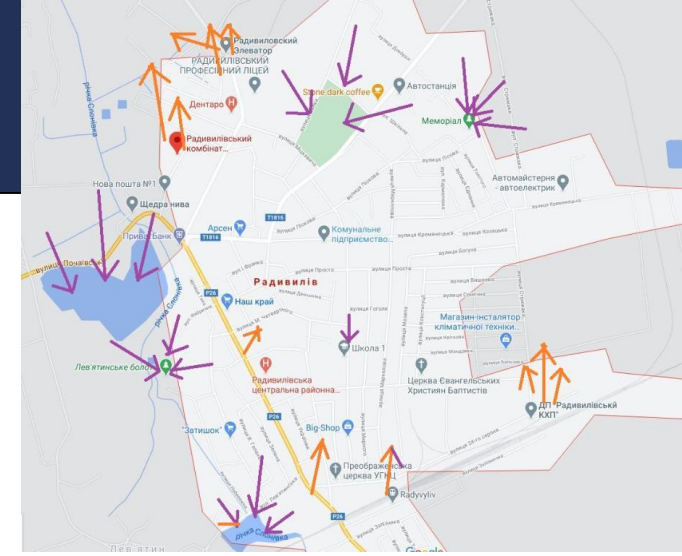
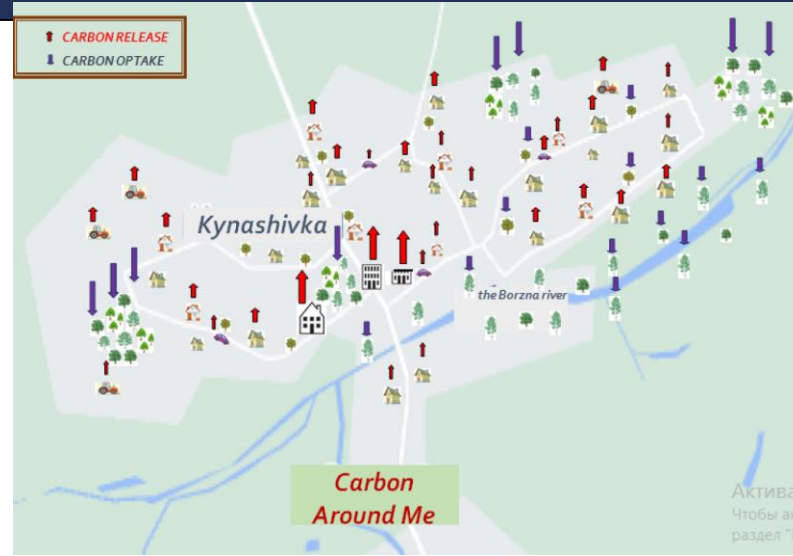
Activity: Carbon in my tree - photosynthesis

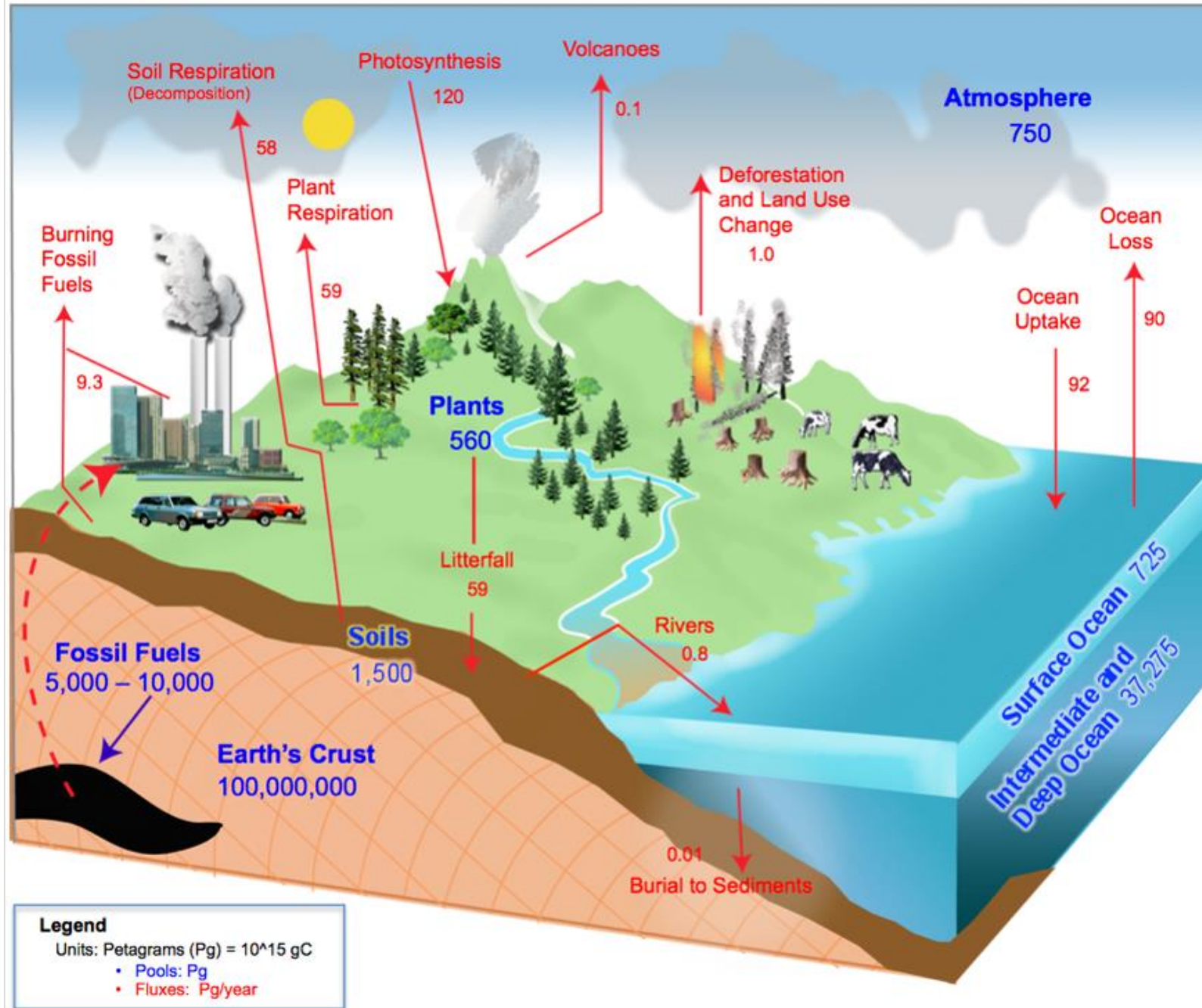




The GLOBE Program

Activity: Carbon around me – carbon pools and fluxes





European Phenology Campaign Padlet offers large set of resources from schools:

https://padlet.com/ee_region_globe/european-phenology-campaign-inspiration-from-globe-schools-d7ruqbr3kjs7rd2o