

GLOBE Program and PULCHRA Project for Climate Education in Schools



Inese Liepina

Children's Environmental
School

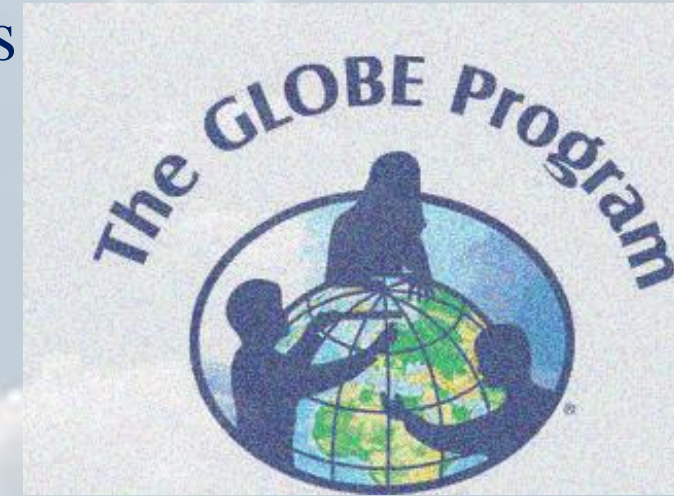
04.04.2022

Children's Environmental School

- Non-governmental organization for environment and education
- Aim: promoting the incorporation of environmental education into school
 - Organising national and international environmental education projects
 - Prepares and publishes learning materials
 - Provides continuing education for teachers and school leaders
 - Organizes environmental camps and expeditions for students



- *The Global Learning and Observations to Benefit the Environment*
- Worldwide environmental science programme, launched on 1995' (Latvia joined on 1999')
- Students do scientific inquiry in collaboration with scientists
- Unified research methodology
- Unified database, more than 218 million measurements
- 126 countries, >40'000 teachers





Africa

Asia and Pacific

Europe and Eurasia

Latin America and Caribbean

Near East and North Africa

North America

27 Countries

19 Countries

45 Countries

20 Countries

13 Countries

2 Countries

Atmosphere



Biosphere



Earth as a System

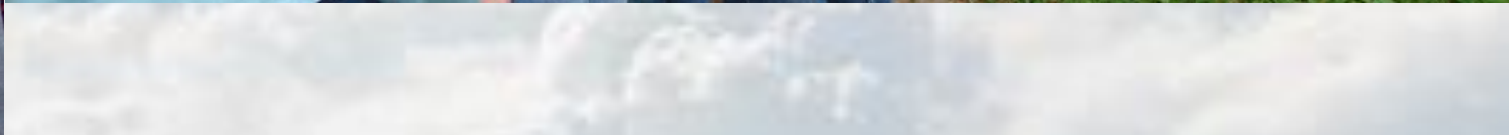


Pedosphere

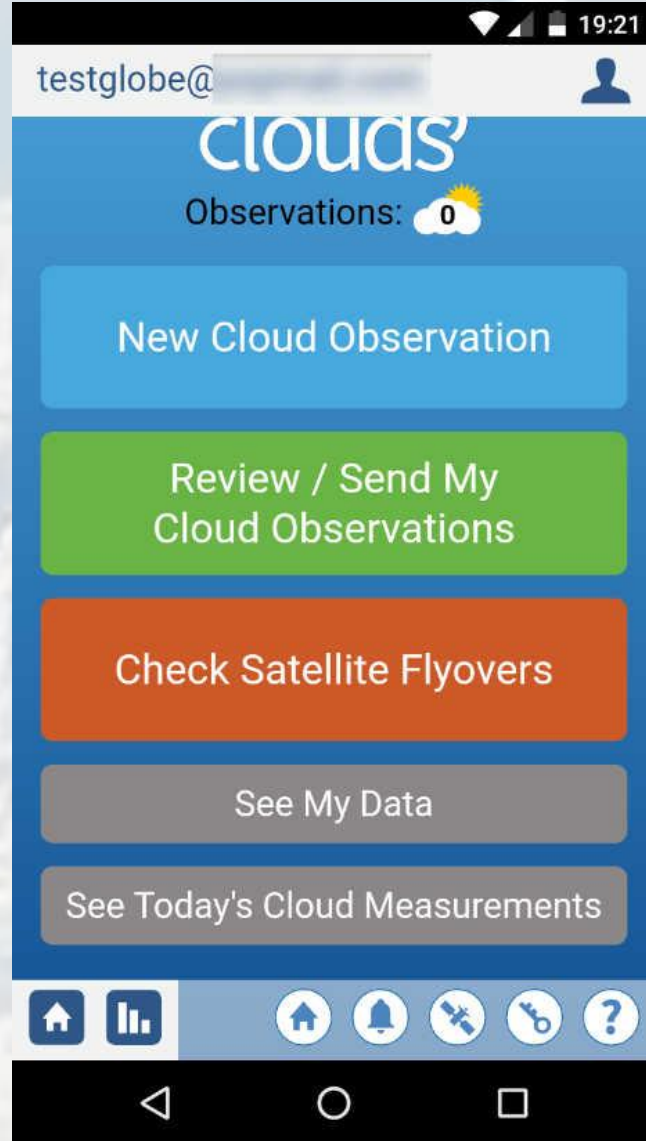


Hydrosphere









GLOBE Observer

- Mobile app for smartphones (iOS un Android)
- Available to anyone, with simple registration and in-app training
- Easy to use everywhere and in any time
- Engage citizen scientists
- Connected with a satelite missions



Apply Filter

Clear

Load

Save

Data Last Updated: 2022-03-14

[Instructions](#)

Select a Filter:

Data Filters

[Select Protocols](#)[Date Range](#)[Data Count Range](#)

Site Filters

[Site Name](#)[Country or State/Territory](#)[In proximity of a lake
or river:](#)[School/Teacher/Partner/Team](#)[Elevation Range](#)

Instructions

This tool allows you to find and retrieve GLOBE data using several different search parameters. You will be presented a summary of sites that have data available based on your search parameters. From those sites you can further refine your search and or download the data into a CSV file for detailed analysis. A summary CSV file is also available that summarizes the amount of data available for each site.

General guidelines:

- At least 1 protocol must be selected.
- Multiple filters are encouraged.
- Each filter type can have multiple parameters.
- The default is that all data for all sites in the site list will be included in the measurement data CSV file.
- The "-" must be used for southern hemisphere latitudes and western hemisphere longitudes.
- Save your search parameters by using the Save and Load functions above. Log-in required.

To begin, select a filter item on the left.

[GLOBE Data User Guide](#)





Join us!

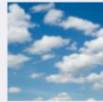


- GLOBE - worldwide community of students, teachers, scientists and other enthusiasts
- Real science!
- Diversity of learning and inquiry activities, compatible with demands of national education curricula
- Protocols on all aspects of our environment
- Opportunity to participate in international events
- <https://www.globe.gov/join/become-a-globe-teacher>

Protocol eTraining

[Atmosphere](#)[Biosphere](#)[Hydrosphere](#)[Pedosphere \(Soil\)](#)[eTraining Requirements](#)[Discussion Forums](#)

Atmosphere



INTRODUCTION TO ATMOSPHERE

Learn about the GLOBE student investigations that explore the Earth's atmosphere, weather and climate. After completing this module, you will be able to describe the structure and composition of the atmosphere and explain how differential heating of the Earth's surface generates our planet's air circulation patterns. You will be able to identify the atmosphere as one of the interacting components of our Earth system, and become familiar with the Atmosphere Protocols followed by GLOBE students when they collect data for their scientific investigations. Finally, you will explore the steps of setting up a GLOBE Atmosphere study site for and be introduced to GLOBE data reporting and visualization tools.

[Download Module](#)[Assessment Test](#)**Test not completed**

REGULAR MODULES

CLOUDS

Learn how to select and define a GLOBE atmosphere Clouds protocol study site and get a step by step introduction of the protocol. After completing this module, you'll know how to explain what clouds are and how they form; explain why clouds are an important element of the Earth system; explain why cloud observations are important for understanding our changing Earth system; identify a Clouds study site and take observations of the sky; upload data to the GLOBE database; visualize data using GLOBE's Visualization Site and have ideas for questions you can address using cloud observations.

[Download Module](#)[Assessment Test](#)**Test not completed**

Supporting Material:

[Contrail Formation Tutorial](#)

In this tutorial, you can explore the physics of contrail formation in the atmosphere and develop the ability to recognize the several types of contrails that form under varying atmospheric conditions. Practice classifying the type and abundance of contrails.

[Cloud Cover Practice](#)

This interactive web-based tool allows you to calibrate your eye by practicing cloud cover estimation using images on the computer.

[Cloud Type Practice](#)

This interactive web-based tool asks a series of questions to help you narrow down the type of cloud you are observing. It can be used both for practice and in the field to identify clouds.



THE **GLOBE** PROGRAM

Protocol eTraining Assessment Test

Introduction to GLOBE Module

Click the "Start Quiz" button to begin. Good luck!

Start Quiz



Science in the City: Building Participatory Urb Learning Community Hubs through Research and Activation (PULCHRA).



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824466



The PULCHRA project at a glance

- International cooperation network with 50 schools from ten EU countries
- Cities as *urban ecosystems*
- Pupils in urban schools aged 12-18 are involved in research into local environmental, climate and sustainability issues
- *Inquiry Based Learning* and the **Open School Approach** - participatory learning open to the local community
- Strong link to the **Sustainable Development Goals of United Nations.**
- Interaction with Universities, research centers, private enterprises, local authorities, NGOs, etc.
- Virtual platform and Mobile App





According to the projections of the European Environment Agency (2017) by the **year 2030, 75% of Europeans will live in cities:**

- A number of environmental, climate, social and economic problems will appear;
- inequality will increase, the quality of life will decrease





Why cities as urban ecosystems?

- Cities are more than agglomeration of buildings.
- They are instead “**living organisms**” which face environmental threats and the impacts of climate change.
- They exchange heat, mass, energy, information, ideas and culture.
- It is to this end, that cities are addressed **as urban ecosystems** - a complex system of: (a) the natural environment, (b) the built environment and (c) the socio-economic environment.





Why cities? Why as urban ecosystems?

Furthermore, the perspective of the **cities as urban ecosystems** is directly linked to the Sustainable Development Goals of the United Nations as well as a number of recent European Union strategies for:

- (a) Nature Based Solutions (NBS)
- (b) Circular economy in cities
- (c) **Low carbon economies by the year 2050**
- (d) **Climate Friendly Cities** and
- (e) Smart cities.





City Challenges

The project has identified several common issues/opportunities that European cities face due to increased urbanization. These are environmental, climatic, social, and economic in nature.

In response the project partners designed specific ‘**City Challenges**’ for participating schools to explore. These will:

- build good scientific knowledge;
- promote expert and community participation; and encourage active engagement in shared living environments and futures.





City Challenges Themes

City Challenge	Theme	Indicative topics
1	Powering Cities without Harming the Climate	Climate Neutral Cities, Clean energy and energy efficiency
2	Buildings for the Future City	Climate Neutral Cities, Green Buildings, urban heat adaptation and mitigation, thermal comfort
3	Regenerating Urban Space to connect People in a Healthy Environment	Sustainable urbanization, nature based solutions, air quality, public spaces
4	From waste disposal to resource efficiency – Circular economy at the city scale	Waste management, resource efficiency, circular economy
5	Mobility Patterns that support Community Development	Climate Neutral Cities, green transport, air quality, social cohesion
6	Innovation for Social and Environmental Benefit	Smart city, carbon footprint, earth observation, big data





How PULCHRA works

Partnerships with external experts from science, administration, politics, business, NGOs, and parents.



City challenge: The school selects a topic from a pool of City Challenges themes/topics in the context of “Cities as urban ecosystems”

Science Team: Students, teachers, parents, representatives from the academia, the research community, the business sector, public administration, local authorities, NGOs, etc.



Projects course: Performed by the **Science Team** - Teaching with the Open Schooling concept, inquiry-based learning

City Challenges events: Public events for information and discussion

Science Reporters:
Students report on the project

City Challenges Platform: Online platform of the PULCHRA project where school projects are hosted. Provides Education material and online tools, assists partnerships and brings together **PULCHRA’s school network.**





The project

Together with external experts from science, administration, politics, business, NGOs, and parents, students and teachers form a **Science Team**.





- Methodical materials for all City Challenges in all partner languages
- Open Course for City Challenges
- School projects
- <https://platform.pulchra-schools.eu/>





PULCHRA APP





Thank you!

- www.videsskola.lv
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- <https://www.facebook.com/videsskola>
- <https://www.facebook.com/GlobeLatvija>
- <https://www.twitter.com/videsskola>



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