



# Introduction to Hydrosphere

## Вступ до Гідросфери е-тренінг



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## Protocol eTraining

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## eTraining Requirements

### For New GLOBE Teachers:

The following modules must be completed to become a trained GLOBE Teacher (to enable you to enter data for any protocol):

- Introduction to GLOBE
- Introduction to a Sphere (Atmosphere, Biosphere, Hydrosphere or Pedosphere)
- 1 Protocol Module (from the same sphere as the introduction module)
  
- The Land Cover Sample Site Description module is also required for the Biometry protocol
- The Selecting, Exposing and Defining a Soil Characterization Site module is also required for the Soil Characterization protocol



## Protocol eTraining

Atmosphere

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(Soil)

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## Hydrosphere



### INTRODUCTION TO HYDROSPHERE

This introductory module introduces GLOBE's hydrosphere investigation area. You will learn why it is important to document and monitor the hydrosphere. You will be introduced to the different GLOBE protocols used to collect hydrosphere data. Step by step instructions for documenting a hydrosphere study site are outlined, as well as the steps you need to follow to report a new hydrosphere study site to the GLOBE database using GLOBE's mobile data app.

[Download Module](#)

[Assessment Test](#)

**Test not  
completed**



### MOSQUITO LARVAE Using GO MHM App

Learn how to collect, sort, identify and count the number of mosquito larvae, and determine whether your specimens represent taxa that potentially transmit disease. Support community health initiatives by

eradication breeding sites in containers in your community. You will learn



# THE GLOBE PROGRAM

A Worldwide Science and Education Program

# Ukraine



## THE GLOBE PROGRAM

### Protocol eTraining Assessment Test

## Introduction to Hydrosphere Module

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

[Start Quiz](#)



Якщо ви маєте 3 ділянки, яку з них найкраще вибрати для гідрологічних спостережень?

If you have three potential sites to choose from, which of the following is the most preferable Hydrosphere Study Site for your GLOBE investigation?

- Irrigation ditch
- Pond
- Stream or River

Струмок або річка



When using a GPS receiver, how many measurements should you make at one minute intervals? You will average these measurements.

- 2 or 3 (2D or 3D)
- 4
- 5

Визначаючи ваше місцезнаходження за допомогою GPS навігатора, скільки вимірів ви повинні зробити протягом хвилини? Ви візьмете їх середнє значення.

Submit All

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If your water body does not have a name, what do you record on the Hydrosphere App?

Leave this field blank

Якщо досліджувана водойма не має назви, як ви запишете її в протоколі?

Create a descriptive name, such as Unnamed Stream, Tributary to Bear Creek.

Створимо описову назву: “Безіменний струмок”, “Притока Ведмежої затоки”

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Чому гідрологічні дослідження GLOBE важливі?

Why is the GLOBE Hydrosphere Investigation Important?

- To document the chemical and physical characteristics of our water bodies
- To fill in gaps in our understanding of our Earth's waters
- To monitor the quality of Earth's water bodies for the health of ecosystems as well as humans.
- A and B only
- All of the above

Документувати хімічні та фізичні характеристики наших водойм

Заповнити прогалини в розумінні ролі води на Землі

Моніторинг якості водойм для здоров'я екосистем та людини

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When we say “everything is connected to everything else” we could be referring to:

Коли ми кажемо “все пов’язано зі ВСИМ”, ми маємо на увазі:

- Interconnections in the Earth system
- The Hydrologic (water) cycle
- The fact that matter flows and energy cycles
- The observation that changing any part of the Earth system, such as water chemistry or water transparency can affect the rest of the system

All of the above

Все вказане вище

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До гідросфери належить:

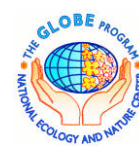
Hydrosphere refers to:

- All life on Earth
- Rocks, soil and the Earth's crust
- Air
- Water Вода

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### What is true about GLOBE protocols?

Яке твердження правдиве про протокол GLOBE?

- It is recommended to use them when collecting data, unless the teacher wants to use a more scientific procedure they learned in college.
- They ensure that the data collected by GLOBE schools around the world can be compared because the data collection procedures are the same.
- GLOBE protocols are only a suggestion how to collect data. As long as you report the data to the GLOBE data center, it is fine.
- A and B
- All of the above

Вони забезпечують те, що дані, зібрані школярами в усьому світі, можна порівнювати між собою тому, що процедура збору даних у всіх однакова.

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### GLOBE Hydrosphere Investigations are important because:

Гідрологічні дослідження важливі тому що:

- In many areas of the world there are only a few water bodies that are monitored. В багатьох куточках Землі є лише декілька водойм, за котрими ведеться спостереження.
- They provide a way for students to collect data and ensure the data that they collect can be used by scientists around the world. Вони дають можливість школярам збирати дані, які можуть бути використані вченими
- Students can identify their own concerns and those of their community and conduct research investigations to solve local problems.
- A and B студенти можуть визначати свої інтереси та інтереси спільноти і проводити наукові дослідження для вирішення місцевих проблем
- All of the above



If you are interested in the pH of a water body because you want to know whether the water is suitable for a certain fish, why would you need to take water temperature and electrical conductivity measurements?

You don't - you can always just check the pH with your class.

You must determine the electrical conductivity and know the temperature to get an accurate pH measurement.

Якщо ви зацікавлені вимірювати рН води, щоб з'ясувати чи підходить вона для певних видів риб, чому потрібно вимірювати температуру води та електропровідність?

Ви повинні визначити електропровідність і знати температуру, щоб отримати точні показники рН.

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Which of the following water properties is described as a master variable, because it affects almost all other properties of water?

- pH
- Electrical Conductivity
- Dissolved Oxygen
- Temperature
- Transparency
- All variables affect other properties of water equally

Яка з перелічених властивостей води найбільше впливає на всі інші

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When should you require students to wear protective gloves and eye gear?

Коли ви рекомендуєте школярам одягати захисні рукавички та окуляри?

- When you use commercial chemical test kits
- Whenever you conduct any hydrosphere protocol
- Whenever your principal is looking

Коли вони працюють з будь-яким протоколом

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Where can you find information about which instruments to use, and what specifications are necessary?

Де ви можете знайти інформацію про те, які інструменти потрібно використовувати і які технічні вимоги потрібні?

- Any distributor of commercial water test kits meets GLOBE specifications
- GLOBE Teacher's Guide Learning Activities
- The GLOBE Teacher's Guide Toolkit
- Hydrology Study Site Data Sheet

Путівник по інструментах для вчителів

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Which of the following protocols must be conducted using a commercial test kit?

- Water pH Protocol
- Dissolved Oxygen Protocol
- Electrical Conductivity Protocol
- Water Nitrate Protocol
- Mosquito Protocol

Який з перелічених протоколів вимагає використання комерційного набору?

Вимірювання нітратів у воді

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Which types of documentation are necessary for your hydrosphere study site?

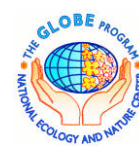
Яку документацію потрібно підготувати для гідрологічних досліджень ділянки?

- Photographs taken in 4 directions: N, S, E, and W  
Зробити фото у 4 напрямках: схід, захід, північ, південь.
- Written description with comment about surrounding landscape features that may impact water quantity or quality
- Map of the study site, including a key so it can be interpreted by others
- A and B only  
Зробити карту досліджуваної ділянки
- All of the above  
Зробити опис навколишнього ландшафта та особливості, які можуть впливати на кількість та якість води.

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A eutrophic water body has too many nutrients, which cause overgrowth of plants and algae and set up poor oxygen conditions for other aquatic organisms. Besides phosphate, what is one of the most common pollutants that runs off from farm fields and lawns, causing this condition?

- Total dissolved solids (TDS)
- Nitrogen compounds
- Acid rain
- pH

Сполуки азоту

Евтрофіковані водойми містять багато поживних речовин, які спричинюють інтенсивний ріст рослин та водоростей, що в свою чергу призводить до зниження у воді кисню та виникнення несприятливих умов для інших організмів. Крім фосфатів, які є одними із найпоширеніших забруднювачів, які стікають з полів, що ще призводить до цього?

Submit All

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What scientific instrument is used to determine the latitude and longitude of your study site?

- Clinometer
- Compass
- GPS
- Geospatial Probe

Які прилади ви використовуєте, коли потрібно визначити координати (довготу і широту) вашої ділянки?

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Which of the following is not a way that you can submit GLOBE data?

Яким способом ви не вносите дані на сайт?

- Live data entry using a computer to link to the GLOBE website
- Use the GLOBE Mobile Data Entry App
- Email data entry (when Internet bandwidth is insufficient to upload directly)
- All of the above are ways to submit data

Будь-яким з вище вказаних способів можна вносити дані

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Чи можна мати більше, ніж одну досліджувану ділянку на річці чи на озері?

Can you have more than one site on a river or a lake?

- Yes, there may be differences exhibited at different depths,
- near different land cover, or near tributaries of a larger river or body of water.
  - One site is the ideal, because water mixes everything up and measurements will be the same throughout the water body.

Так, вони можуть бути різними.



Який розмір повинна мати ділянка гідрологічних досліджень?

When creating a site map, how big should your study area be?

Щонайменше 50 м вздовж берега.

- At least 50 meters long, along the bank of the water body.
- If the water body is small the entire water body can be considered your study site.
- Both are correct

Якщо водойма маленька, то повністю вся може розглядатись як досліджувана ділянка.

Submit All

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When creating a site map, how big should your study area be?

- At least 5 meters by 5 meters
- If the width is 5 meters, the length can be 10 meters
- Both are correct

Are you sure you want to submit all answers and finish the quiz?

Submit All





Congratulations! You successfully completed the Introduction to Hydrosphere module. Click 'Finish' to record your results.

### Quiz Result

Your Score: **89.5%**

Passing Score: **80%**

Review Quiz

Finish



## My eTraining Requirements



Recently completed module: **INTRODUCTION TO HYDROSPHERE**

To be considered trained in a protocol, you must complete the assessment tests for an Introduction to a Sphere module (Atmosphere, Biosphere, Hydrosphere or Pedosphere) and the protocol you wish to be trained in. You only need to pass an introduction module once.

[View your training records](#)

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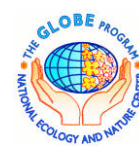
Assessment Test

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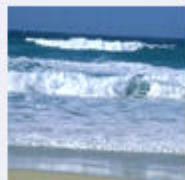
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[Download Module](#)

[Assessment Test](#)

**Test completed  
10/08/2018**



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