



**GEO-ACADEMY**

GEO-Hub for teachers in Europe

**Innovative digital GEO-Tools for  
enhancing teachers' digital, green and  
spatial skills towards an effective STEAM  
Education for Sustainability Development**

27 April 2026

# **GEO-Academy Vision and Methodology**

International Teachers Conference



# Unified Competence Framework (UCF)

## Integrating **Spatial**, **Digital** and **Green** Competences for Sustainability Education



# The challenge

## Teachers face fragmented competence frameworks

Students need:

- Digital skills
- Sustainability competences
- Spatial thinking
- Critical thinking

But these are often taught separately.

### **Our question:**

How can we integrate them?



# Our solution

**Unified Competence Framework (UCF)** integrates

**Spatial  
competences**



**Digital  
competences**

**Green  
competences**

**Focus: Solving real sustainability problems  
through geospatial thinking**



# The three competence domains

## Spatial

Spatial thinking  
GIS  
Mapping

## Green

Systems thinking  
Sustainability  
Responsibility

## Digital

Data literacy  
Digital tools  
Communication

Complex problem solving



# Core competences developed

## UCF develops:

- Systems thinking
- Critical thinking
- Spatial thinking
- Data literacy
- Problem solving
- Collaboration
- Communication



# How competences connect



## **Green + Spatial:**

→ Environmental planning

## **Spatial + Digital:**

→ GIS analysis

## **Digital + Green:**

→ Data-driven sustainability decisions

## **All three:**

→ Solving complex real-world problems



# Example applications

- Protected area planning
- Water management
- Sustainable cities
- Disease mapping
- Food systems analysis



# Key message

## Key takeaway

Teaching sustainability today requires integrating:

Spatial thinking  
Digital competence  
Green competence

**Not separately — but together.**



# The BOOKLET

The **Booklet** is a **guide for teachers** that provides a comprehensive **overview** of three years of **Geo-Academy project work**.



# The BOOKLET

Where can you find the **Booklet**?

<https://geoacademy.eu/resources/>



# The BOOKLET

<https://geoacademy.eu/resources/>

Home

About

Partners

**Resources**

Media

Contact



**GeoVoices: Map Storytelling School Competition**

English



**GEOBSERVE  
PLATFORM**

**Paris International Conference**



# The BOOKLET

[Home](#) [About](#) [Partners](#) [Resources](#) [Media](#) [Contact](#)



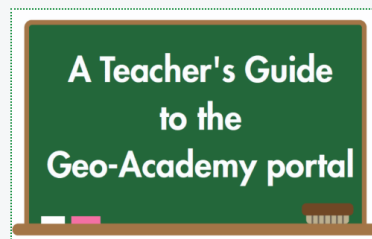
**GeoVoices: Map Storytelling School Competition**

English

**GEOBSERVE  
PLATFORM**

**Paris International Conference**

## Geo-Academy Booklet



### Geo Academy booklet

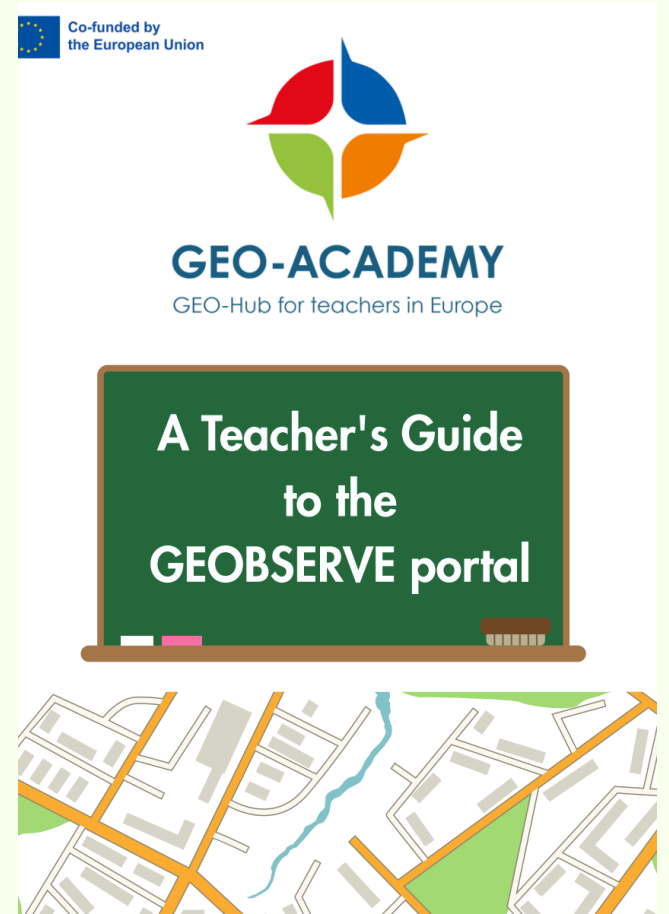
Download the Geo-Academy booklet with instructions about the Geobserve platform



# The BOOKLET

## Where can you find the Booklet?

[https://geoacademy.eu/wp-content/uploads/2026/03/Booklet-GEO-Academy-Portal\\_v9-final.pdf](https://geoacademy.eu/wp-content/uploads/2026/03/Booklet-GEO-Academy-Portal_v9-final.pdf)



# The BOOKLET

Of course, there is also an **unabridged** version of the GEO-Academy ...

**But that can be pretty overwhelming at the beginning.**



# The BOOKLET

Anyway, you can find the **whole thing** our

## **SUPER-POWERS**

on our “PORTAL website”.

<https://portal.geoacademy.eu/e-modules/>



# The BOOKLET

<https://portal.geoacademy.eu/e-modules/>

The screenshot shows the GEO-ACADEMY website interface. At the top, there is a navigation bar with the following items: Home, Resources and Tools, GEO-Hubs (with a dropdown arrow), E-modules (with a dropdown arrow), Events & News (with a dropdown arrow), Contact, and Login (with a dropdown arrow). A search icon is located on the right side of the navigation bar. Below the navigation bar, there are five blue rectangular cards arranged in a grid. Each card contains an icon, a title, and a brief description. The cards are: 1. Cartography & Spatial Thinking (icon: stacked layers), description: Cartography, map literacy and development of spatial skills. 2. GIS for Earth Sciences (icon: globe), description: Geographical Information Systems (GIS), tools and techniques. 3. EO, RS & Sat Apps (icon: satellite), description: Remote sensing (RS), Earth Observation (EO) and applications. 4. Map Storytelling (icon: map), description: Visualisation and synthesis of information through map storytelling. 5. Coding for Urban Sustainability (icon: code symbols), description: STEAM education, robotics and coding. In the center of the grid, there is a large logo consisting of four stylized leaves in red, blue, green, and orange.



# The BOOKLET

**Home Resources and Tools GEO-Hubs v E-modules v Events & News v Contact Login v**

- Cartography & Spatial Thinking**  
Cartography, map literacy and development of spatial skills
- GIS for Earth Sciences**  
Geographical Information Systems (GIS), tools and techniques
- EO, RS & Sat Apps**  
Remote sensing (RS), Earth Observation (EO), and applications
- Map Storytelling**  
Visualisation and synthesis of information through map storytelling
- Coding for Urban Sustainability**  
STEAM education, robotics and coding

Co-funded by the European Union

**GEO-ACADEMY**  
GEO-Hub for teachers in Europe

**A Teacher's Guide to the GEOBSERVE portal**



# The BOOKLET

Home Resources and Tools GEO-Hubs ▾ E-modules ▾ Events & News ▾ Contact Login ▾

**Cartography & Spatial Thinking**  
Cartography, map literacy and development of spatial skills

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# The BOOKLET



**GEO-ACADEMY**  
GEO-Hub for teachers in Europe

07

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## Cartography & Spatial Thinking



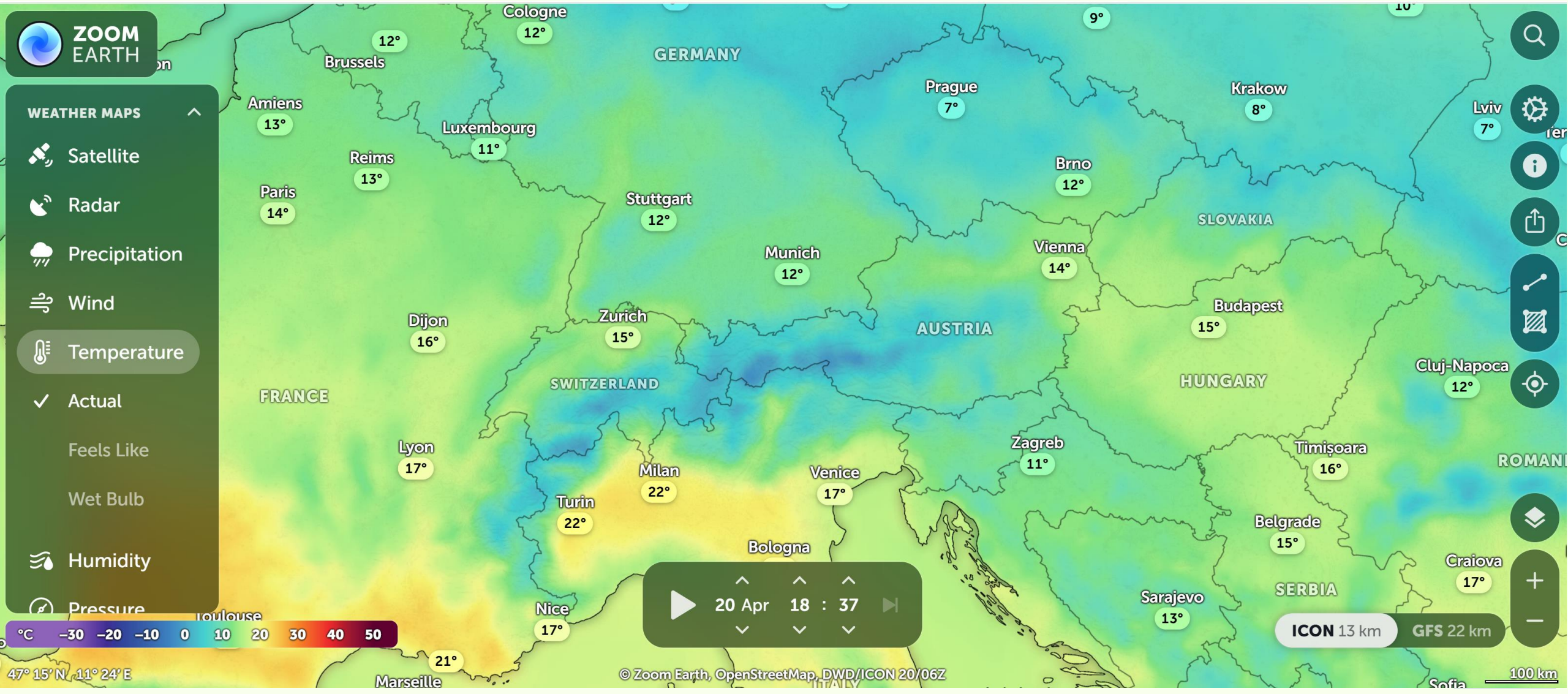
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GEO-Hub for teachers in Europe

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Co-funded by the  
Erasmus+ Programme  
of the European Union



# The BOOKLET - Example



# The BOOKLET - Example

<https://zoom.earth/>

**ZOOM EARTH**

**WEATHER MAPS**

- Satellite
- Radar
- Precipitation
- Wind
- Temperature
- Actual
- Feels Like
- Wet Bulb
- Humidity
- Pressure

20 Apr 18 : 37

22

**GEO-ACADEMY** 40 50

GEO-Hub for teachers in Europe

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# The BOOKLET

**Home Resources and Tools GEO-Hubs E-modules Events & News Contact Login**

- Cartography & Spatial Thinking**  
Cartography, map literacy and development of spatial skills
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Visualisation and synthesis of information through map storytelling
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# The BOOKLET



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## Map Storytelling

13

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24

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# The BOOKLET

Map stories are supposed to be digital and web based, so as to easily share and disseminate the content and reach out to a broader audience without the need for special software or hardware.

In the classroom, Map Storytelling can be used in 3 ways:

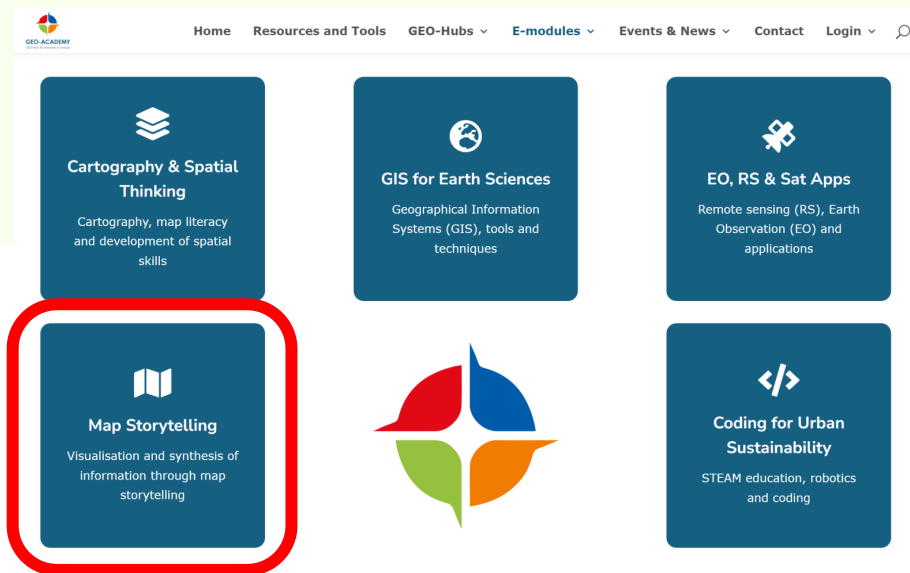
- By reuse of ready made geostories such as the [ArcGIS StoryMaps collection](https://arcgis.com/storymaps) or the [Mapstories Gallery](https://mapstories.reedu.de/en/gallery/all) (<https://mapstories.reedu.de/en/gallery/all> (in German))
- By preparing a learning course by the teacher in a map storytelling form
- By encouraging students to prepare a geostory for a specific topic



# The BOOKLET - Example



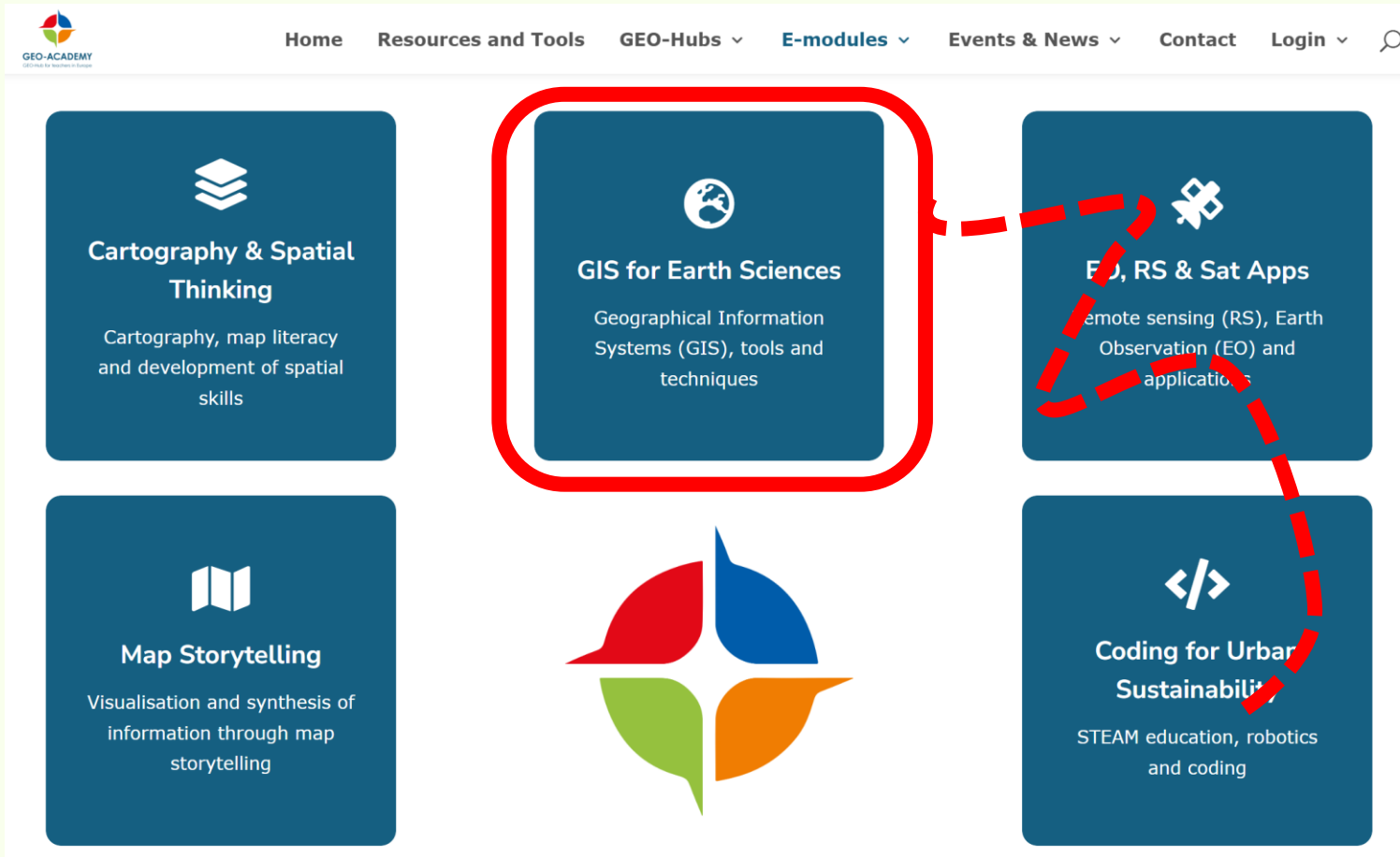
## Map Storytelling



<https://www.youtube.com/watch?v=k60qGUVmtbY>



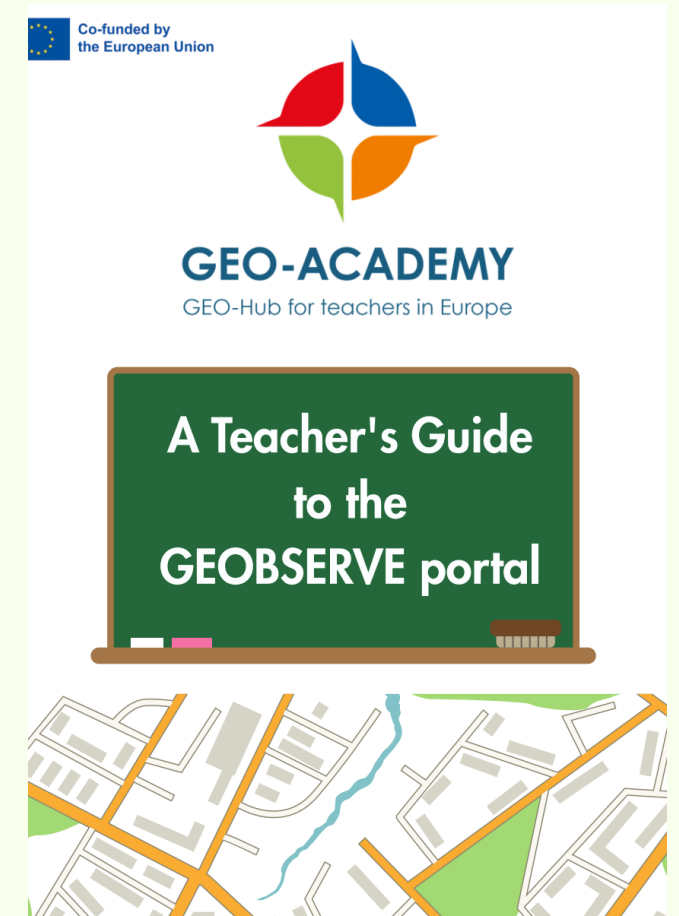
# The BOOKLET



The screenshot shows the GEO-ACADEMY website home page. The navigation bar includes: Home, Resources and Tools, GEO-Hubs, E-modules, Events & News, Contact, and Login. The main content area features five resource cards:

- Cartography & Spatial Thinking**: Cartography, map literacy and development of spatial skills.
- GIS for Earth Sciences**: Geographical Information Systems (GIS), tools and techniques. This card is highlighted with a red border and a red dashed arrow pointing to the 'EO, RS & Sat Apps' card.
- EO, RS & Sat Apps**: Remote sensing (RS), Earth Observation (EO) and applications.
- Coding for Urban Sustainability**: STEAM education, robotics and coding.
- Map Storytelling**: Visualisation and synthesis of information through map storytelling.

A large GEO-ACADEMY logo is centered below the cards.

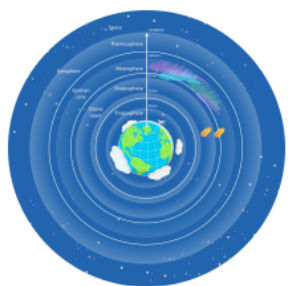


The booklet cover features the GEO-ACADEMY logo at the top, with the text 'GEO-ACADEMY GEO-Hub for teachers in Europe'. Below this is a green chalkboard with the title 'A Teacher's Guide to the GEOBSERVE portal'. The bottom of the cover shows a stylized map of a city street grid.



# The BOOKLET

10



## GIS (Geographic Information Systems) for Earth Sciences



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GEO-Hub for teachers in Europe



# The BOOKLET - Example

Where are the optimal locations for **offshore wind turbines** in Greece?

## Offshore wind

Accelerating deployment of the backbone of our future energy system and maximising industrial benefits



# The BOOKLET - Example

GEO-Academy showcases teaching concepts that work even without a digital classroom — using simple materials like scissors and paper.

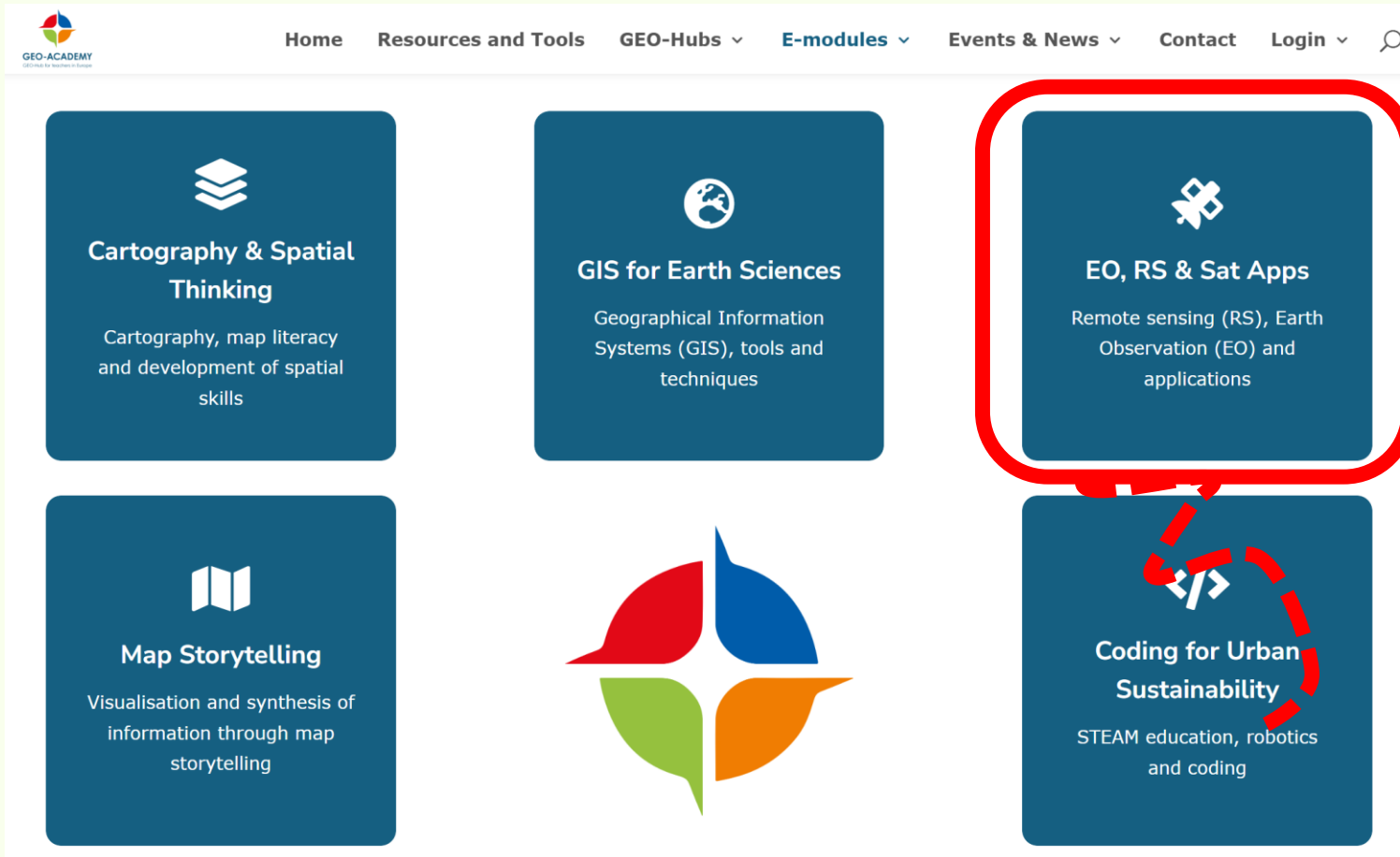


# The BOOKLET - Example

Using the hands-on Multi-Criteria Problem-Solving approach ...



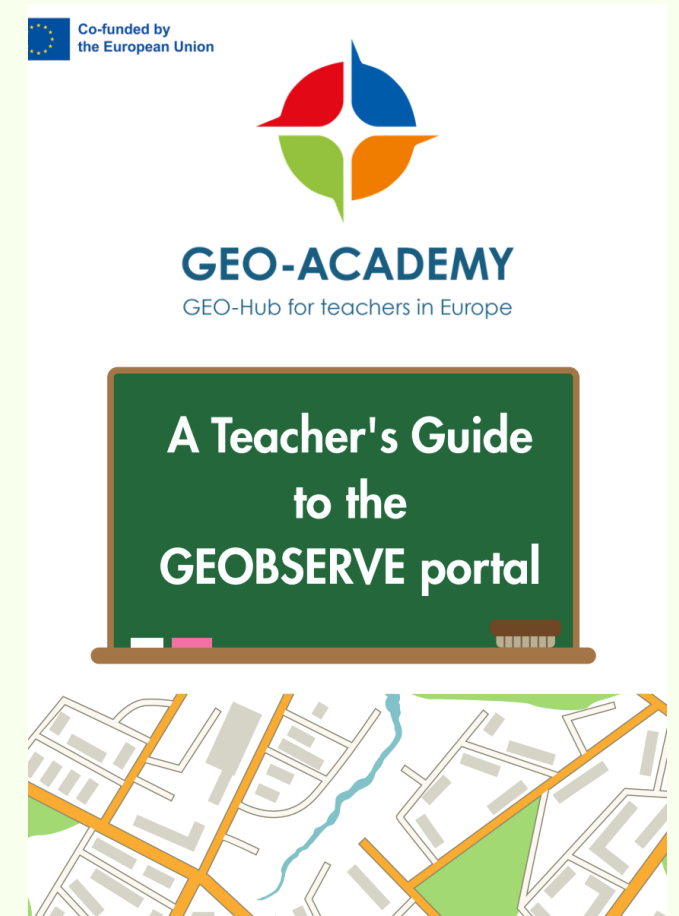
# The BOOKLET



The screenshot shows the GEO-ACADEMY website home page. The navigation bar includes: Home, Resources and Tools, GEO-Hubs (with a dropdown arrow), E-modules (with a dropdown arrow), Events & News (with a dropdown arrow), Contact, and Login (with a dropdown arrow). There is also a search icon. The main content area features five blue cards with white icons and text:

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- GIS for Earth Sciences**: Geographical Information Systems (GIS), tools and techniques.
- EO, RS & Sat Apps**: Remote sensing (RS), Earth Observation (EO) and applications. This card is highlighted with a red rounded rectangle.
- Map Storytelling**: Visualisation and synthesis of information through map storytelling.
- Coding for Urban Sustainability**: STEAM education, robotics and coding.

In the center of the page is the GEO-ACADEMY logo, which consists of four stylized leaves in red, blue, green, and orange.



The booklet cover features the GEO-ACADEMY logo at the top, with the text "GEO-ACADEMY" and "GEO-Hub for teachers in Europe" below it. A small European Union flag and the text "Co-funded by the European Union" are in the top left corner. The main title "A Teacher's Guide to the GEOBSERVE portal" is displayed on a green chalkboard. Below the chalkboard is a stylized map of a city street grid.



# The BOOKLET



## Earth Observation (EO), Remote Sensing (RS) & Sat Apps

11

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# The BOOKLET - Example

<https://browser.dataspace.copernicus.eu/>



# The BOOKLET - Example

**Opernicus BROWSER**    EN    Login    <

**VISUALISE**    SEARCH

DATE: SINGLE    [Calendar]    [Globe]    [Refresh]    [Up Arrow]

<    YYYY-MM-DD    >    30%

Show latest date ↗

[Find products for current view](#)

CONFIGURATION:  
Default    ▾

DATA COLLECTIONS:    [Layers]    [Star]    [Refresh]    [Pin]    [Up Arrow]

Sentinel-2    ▾    [Info]

Go to Place    [Layers]    [Info]

Please zoom in or search for a location of interest

Map showing Europe with country labels: Denmark, Netherlands, Belgium, Luxembourg, Germany, Poland, Belarus, Czechia, Slovakia, Austria, Liechtenstein, Switzerland, Slovenia, Hungary, Ukraine, Moldova, Romania, Monaco, San Marino, Croatia, Bosnia and Herzegovina, Serbia, Bulgaria.

[Home]    [Share]    [Location]    [Layers]    [Image]    [3D]    [Bar Chart]    [+]



# The BOOKLET - Example

The screenshot displays the Copernicus Browser interface. On the left, there is a sidebar with the following sections:

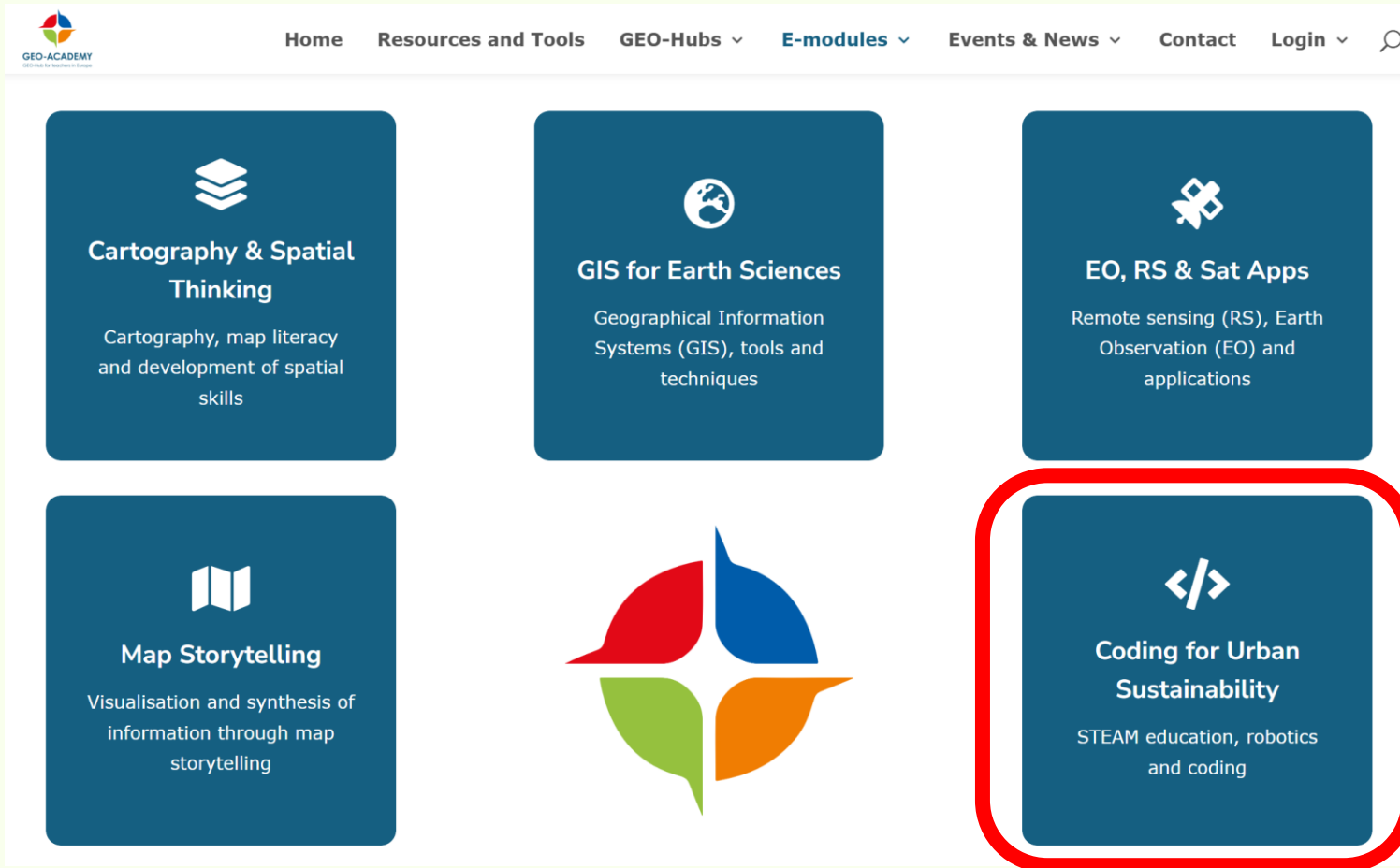
- Top:** Copernicus BROWSER logo, language selector (EN), and Login button.
- Buttons:** VISUALISE and SEARCH.
- DATE: SINGLE:** Includes a date input field (YYYY-MM-DD), a 30% zoom indicator, and a 'Show latest date' button.
- CONFIGURATION:** A dropdown menu currently set to 'Default'.
- DATA COLLECTIONS:** A dropdown menu currently set to 'Sentinel-2'.

The main area shows a satellite map of Europe. A yellow banner across the top of the map reads: "Please zoom in or search for a location of interest". A search bar at the top right contains the text "Go to Place". The map shows various countries including Denmark, Netherlands, Germany, Poland, Belgium, Luxembourg, Austria, Hungary, Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Romania, Bulgaria, and Moldova.

<https://browser.dataspace.copernicus.eu/>



# The BOOKLET



The screenshot shows the GEO-ACADEMY website home page. At the top, there is a navigation bar with the following items: Home, Resources and Tools, GEO-Hubs (with a dropdown arrow), E-modules (with a dropdown arrow), Events & News (with a dropdown arrow), Contact, and Login (with a dropdown arrow). A search icon is located to the right of the navigation bar. Below the navigation bar, there are five blue cards with white text and icons. The cards are: 1. Cartography & Spatial Thinking (with a stack of books icon), 2. GIS for Earth Sciences (with a globe icon), 3. EO, RS & Sat Apps (with a satellite icon), 4. Map Storytelling (with a map icon), and 5. Coding for Urban Sustainability (with a code icon). The fifth card is highlighted with a red rounded rectangle. In the center of the page, there is a large logo consisting of four stylized leaves in red, blue, green, and orange.

Home Resources and Tools GEO-Hubs ▾ E-modules ▾ Events & News ▾ Contact Login ▾

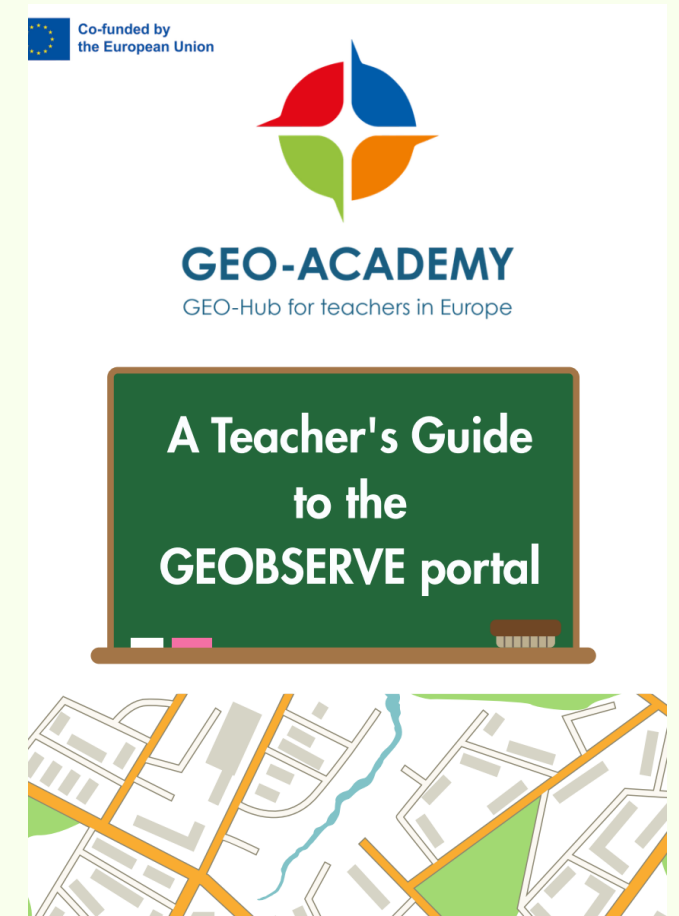
**Cartography & Spatial Thinking**  
Cartography, map literacy and development of spatial skills

**GIS for Earth Sciences**  
Geographical Information Systems (GIS), tools and techniques

**EO, RS & Sat Apps**  
Remote sensing (RS), Earth Observation (EO) and applications

**Map Storytelling**  
Visualisation and synthesis of information through map storytelling

**Coding for Urban Sustainability**  
STEAM education, robotics and coding



The image shows the cover of a booklet titled 'A Teacher's Guide to the GEOBSERVE portal'. At the top left, there is a logo for the European Union and the text 'Co-funded by the European Union'. Below this is the GEO-ACADEMY logo, which consists of four stylized leaves in red, blue, green, and orange. Underneath the logo is the text 'GEO-ACADEMY' and 'GEO-Hub for teachers in Europe'. The main title 'A Teacher's Guide to the GEOBSERVE portal' is written in white text on a green chalkboard background. Below the chalkboard, there is a stylized map of a city with buildings and streets.

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GEO-Hub for teachers in Europe

**A Teacher's Guide to the GEOBSERVE portal**



# The BOOKLET

16

## Coding for Urban Sustainability

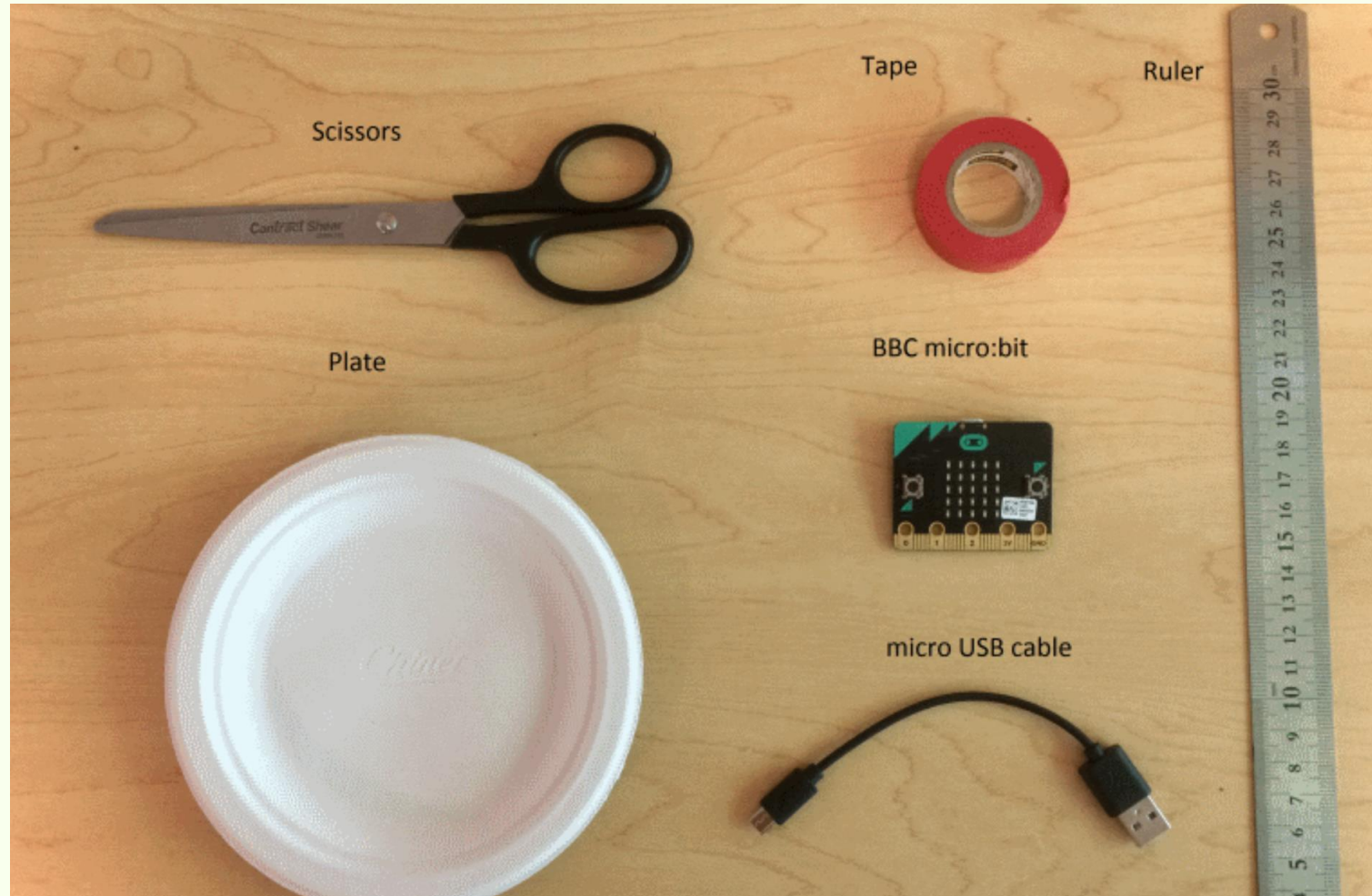


# The BOOKLET - Example

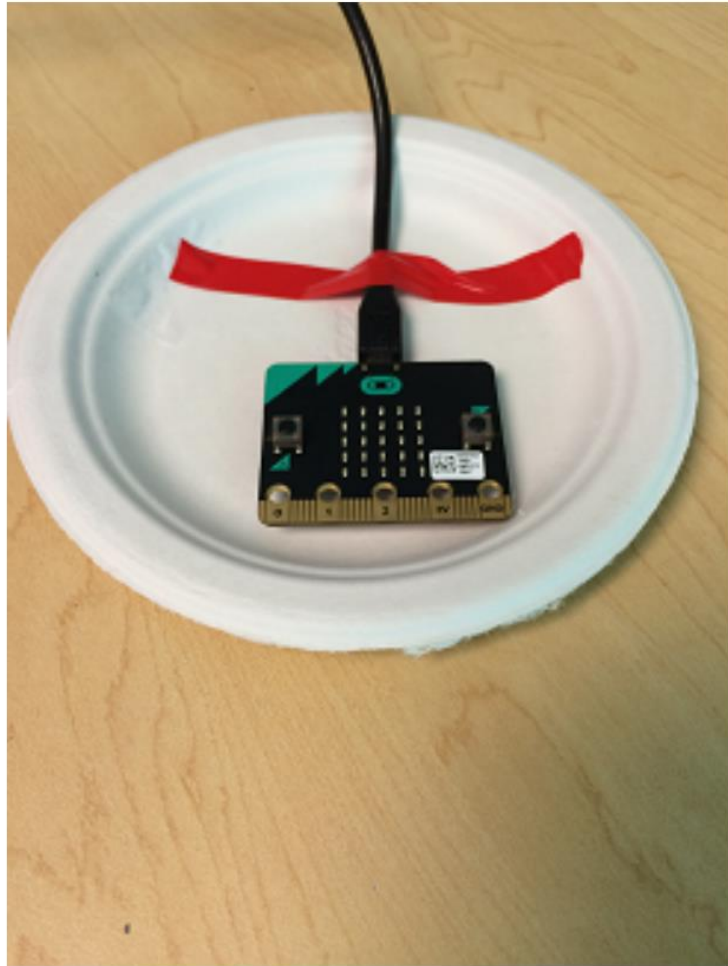
## Seismograph Activity



# The BOOKLET - Example



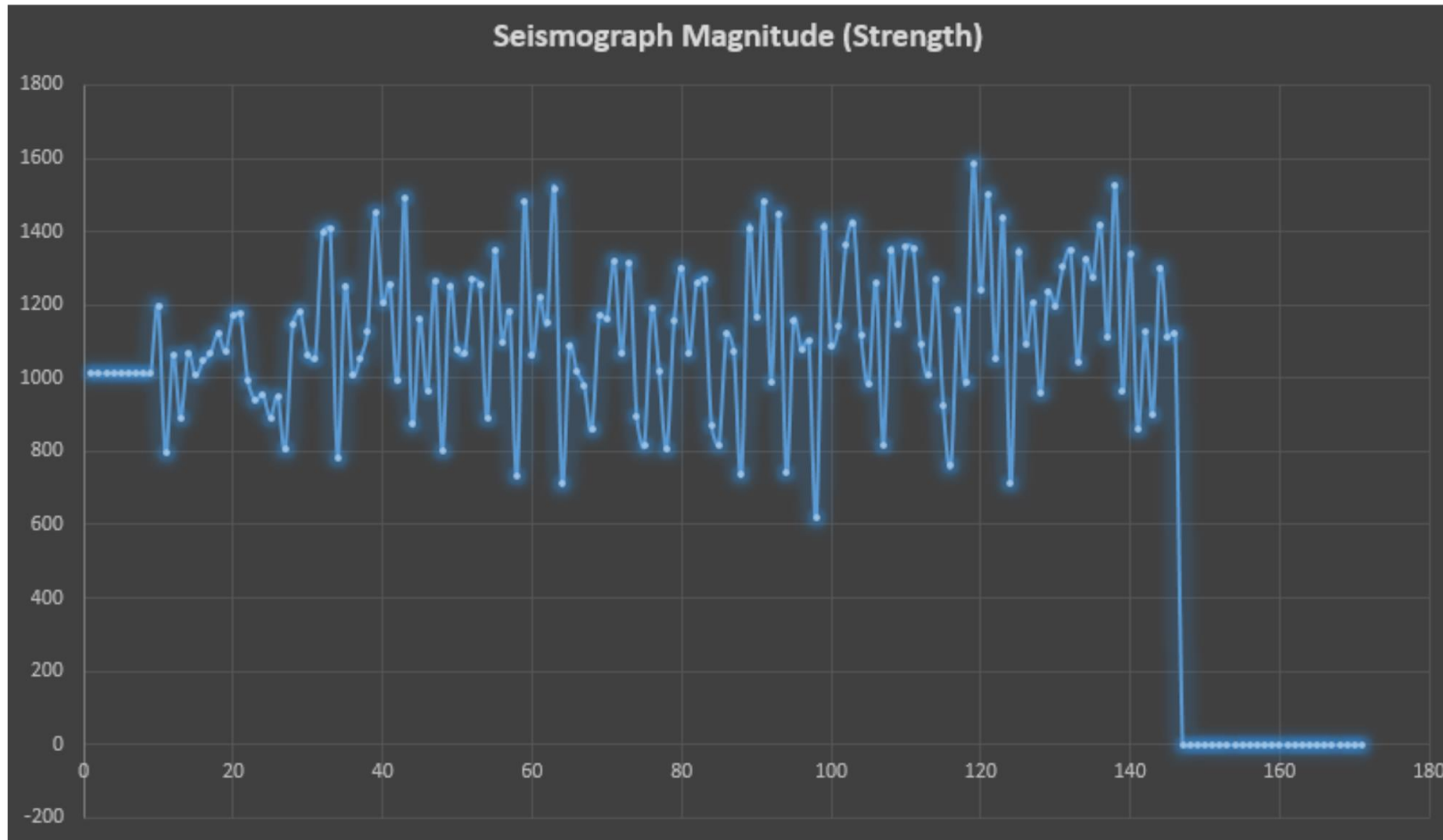
# The BOOKLET - Example



```
forever
  plot bar graph of acceleration (mg) strength ▼
  up to 0
  +
```



# The BOOKLET - Example



# The BOOKLET

