

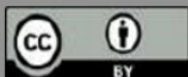


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Erasmus+
Geocaching

Geocaching Resource Kit





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GEOCACHING RESOURCE KIT

Disclosure statement

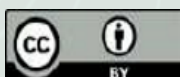


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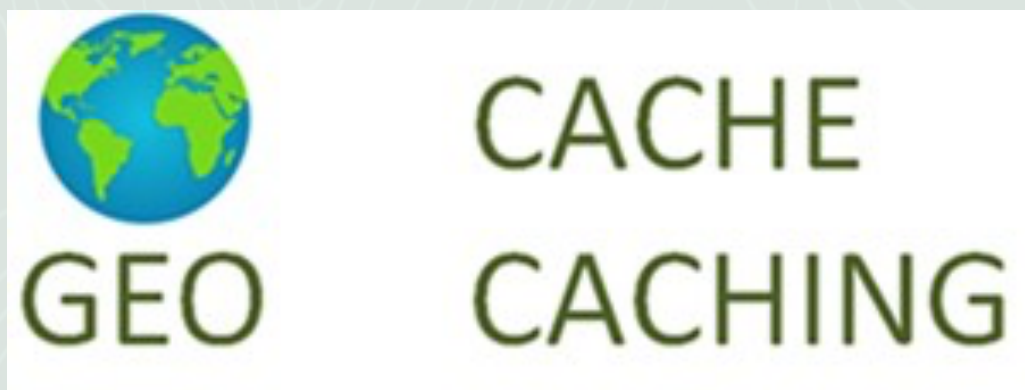


INTRODUCTION

What is Geocaching?

Geocaching (Greek geo – Earth, English cache – to hide, a hiding place, a hiding place) is a game of exploration and discovery that allows GPS users to search for "caches" or hidden containers, located somewhere on Earth. Geocaches have been found worldwide by thousands of people in thousands of locations. Geocache locations are cataloged online at www.geocaching.com. To find a cache, users first find a list of online locations, enter the geographic coordinates as a "waypoint" into their GPS device, and then use it to find the cache. A cache is typically a container containing a logbook. Geocachers can physically record their visit in the logbook and leave it at the location. Geocachers can also report and log their visit to a cache online.

There are over 3.4 million active geocaches worldwide, located in 191 countries on all seven continents (including Antarctica). This figure primarily includes official geocaches registered on Geocaching.com, and since the game's inception in 2000, over 1.2 billion finds have been recorded.

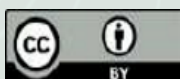




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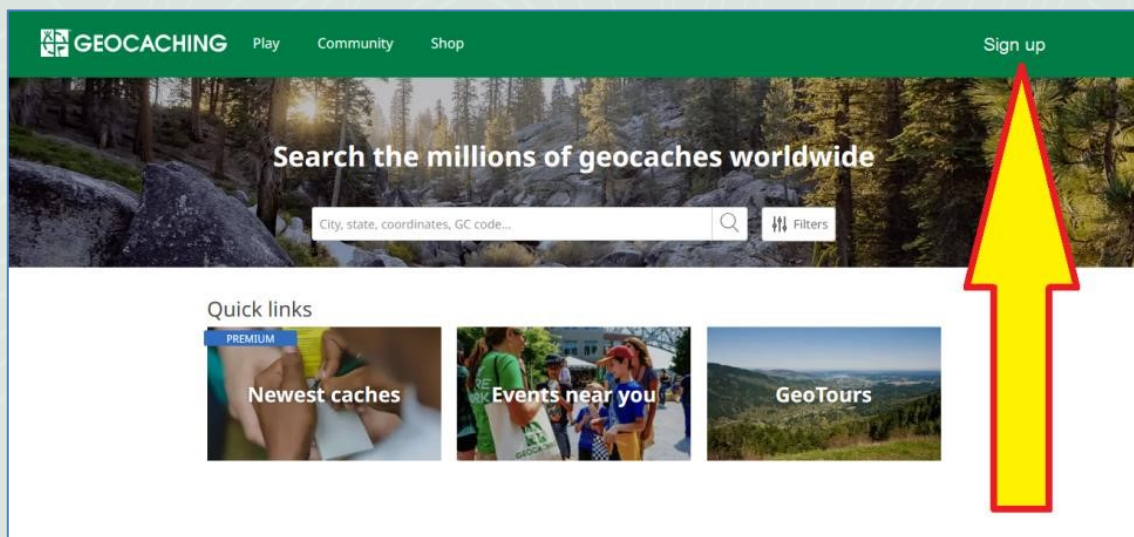


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HOW TO BECOME A GEOCACHER?

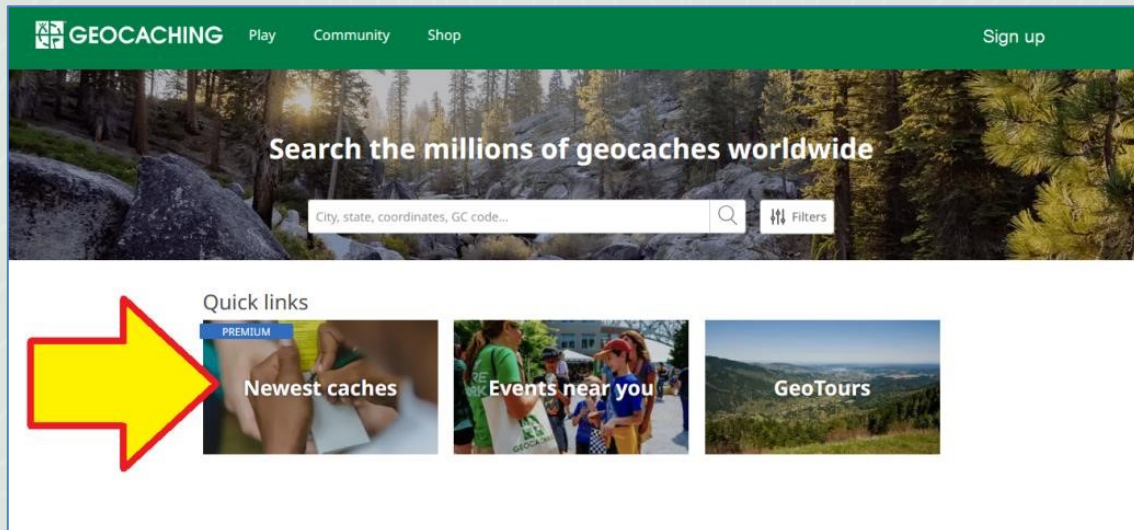
We set up an account.

Let's start by visiting the website <https://www.geocaching.com>.

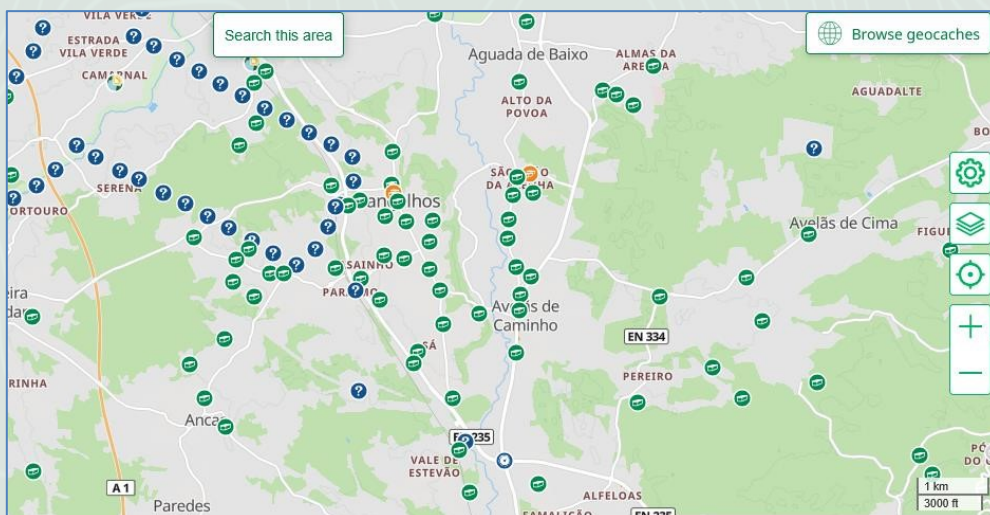


You should sign up. It's a good idea to choose a nickname that's easy to pronounce, as geocachers often address each other that way. You can choose a basic or premium (paid) account.

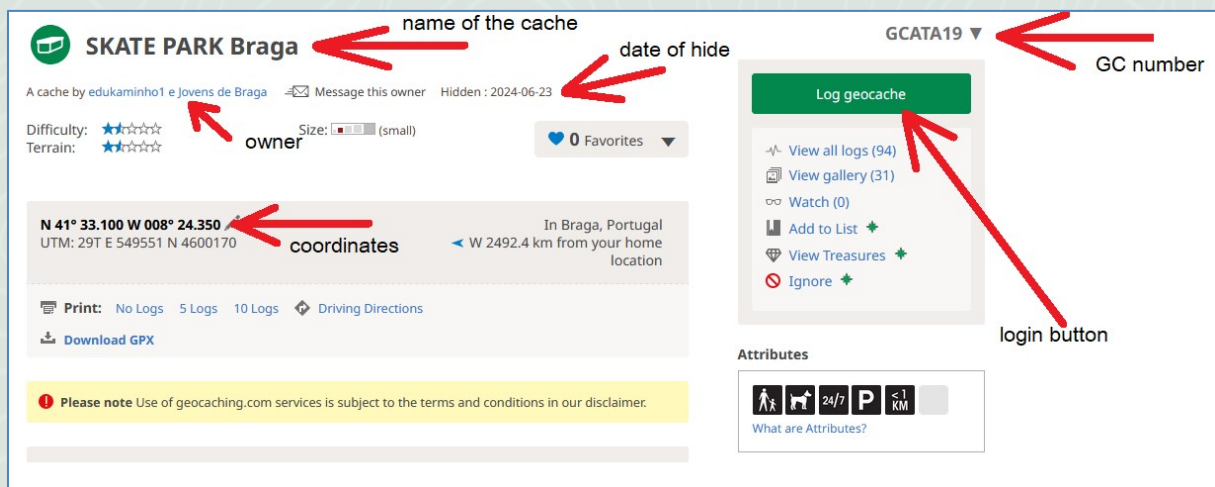
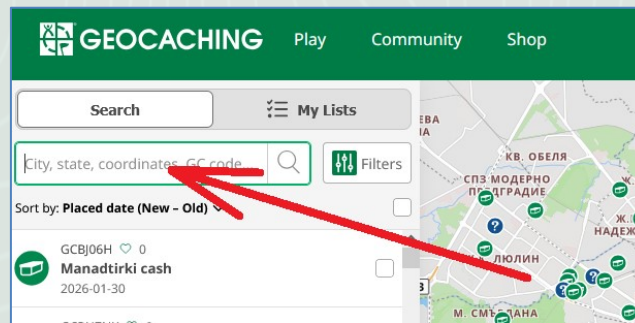
Then click "Newest caches"



You'll see a map with cache symbols marked on it (cache types are discussed in the "**Current types of caches**" section). You can change your position on the map by dragging it with your mouse button pressed.



You can also enter a specific location on the map, or if you know the geocache's GC code, you can enter it and "find" it on the map. Clicking on one of the cache icons will display its description. Below is an example of a cache in Braga, Portugal.



Below is a description of the cache, sometimes in several languages, and below is an example of a cache in Ireland.

Geocache Description:

Called Fin Lough or Fionnloch, meaning "white/fair lake in Gaelic. This cache is hidden by the side of the R335 road south from Louisburg to Leenane at the edge of the lake which lies between the Delphi lodge and the Delphi mountain resort. Delphi Lodge built in the 1820's as a hunting lodge for the Marquis of Sligo. He called it Delphi after declaring the area to be as beautiful as Delphi in Greece having spent some time there with Lord Byron the poet living the good life. I suppose the man had good taste. Mweelrea, the highest mountain in Connaught is in front of you to the west and behind you Ben Creggan and Ben Ghorm. The cache container is a Petling and is hidden on the edge of the road hanging in an Alder tree to the right of the stream.

Additional Hints (Decrypt)

Unatvat va gur gerr gb gur evtug bs gur fgernz ng TM

Decryption Key
A|B|C|D|E|F|G|H|I|J|K|L|M

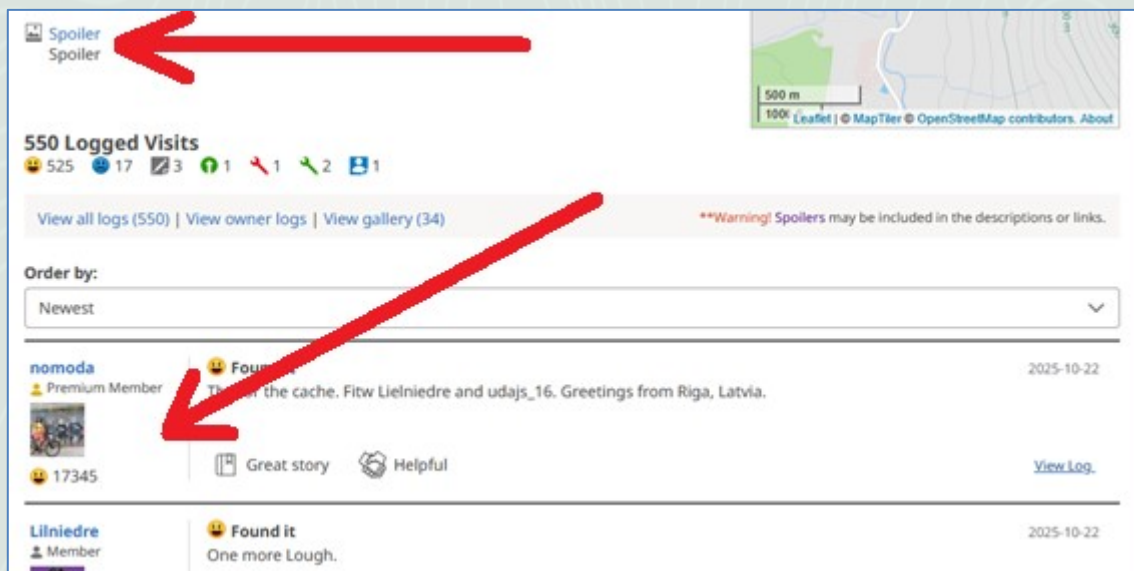
The description also includes an "Additional Hint." As you can see, it's an encrypted message. To read it correctly, click "Decrypt," and you'll see:



Additional Hints (Encrypt)

Hanging in the tree to the right of the stream
at GZ

Below you may find a link to "an image" hint (Spoiler). There's also a list of logged finds.



After clicking on the "spoiler" you will see a hint, in this case it is an image that makes it easier to find the cache in the field.



We are looking for caches.

Once the geocaching map appears, click on the desired cache icon. The cache description will provide coordinates that will be used to navigate to its location. Once you arrive, you'll need to find the hidden cache. You can use the "Additional Hint" or "Spoiler" (if available). In the cache, you'll need to find the logbook where you enter your nickname. It's convenient to get a stamp, which will replace the need to manually enter your find. If there are woodcoins in the cache, you can take them, but replace them with an equal number of other woodcoins. Remember – the cache is not a place for "junk" – don't put anything you wouldn't want to find in the cache you've set up.

After carefully closing the cache (we don't want it to get wet from rain), leave it exactly where you found it. When searching and hiding (especially), try to avoid being noticed by others. Unfortunately, there are cases where caches are destroyed by so-called "Muggles".

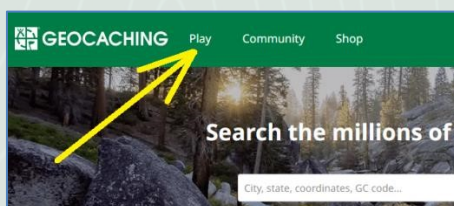
Examples of containers used in geocaching.



How to hide a cash?

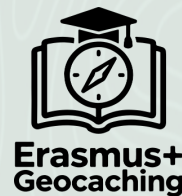
It's a good idea to only set your first cache after finding at least 100-200. This will give you more experience in geocaching, which will help you set new caches.

So let's get started. Start by finding a suitable spot in the terrain where a cache might be hidden. Use your GPS or smartphone to read the coordinates. The next step is to use your computer. On the main page of [geocaching.com](https://www.geocaching.com), click "Play."

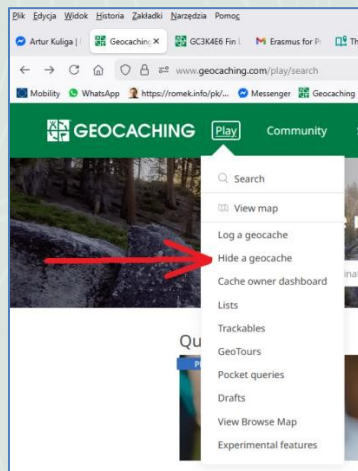




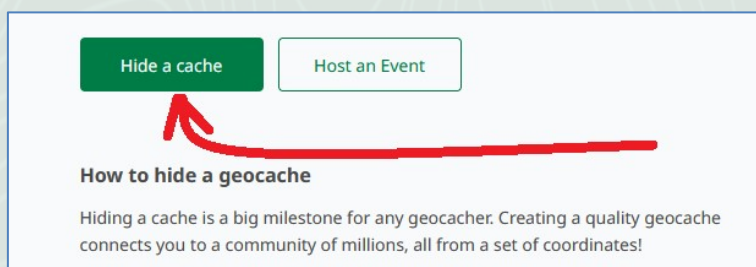
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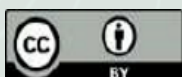
Then select "Hide a geocache" from the list.



You have two options: select "Hide a cache." You'll use the "Host an Event" option to organize a geocaching event.



Since you already know where the cache is hidden, click "Continue".





Hide A Geocache

Search Locations
Check out potential geocache locations. Note: Before submitting your geocache, you will need to visit the location and [obtain accurate coordinates](#).

Already Know Your Hiding Spot?
If you've already visited the location, obtained exact coordinates and received land manager permission, you're all set to submit your geocache.

Geocaches should be a minimum of 528ft/161m away from each other. The map below displays visible locations that are already taken by existing geocaches. The map does not display hidden waypoints and some other potential obstacles to hiding a geocache. Your location must still be reviewed by a community volunteer after it is submitted. [Learn more about this map](#).

Your first cache will be a traditional one, so choose that type  cache.

Geocache Type

Select the type of geocache you're creating. Still deciding or just not sure? See the [geocache type descriptions](#).

Traditional Cache	Multi-Cache
Mystery Cache	EarthCache
Letterbox Hybrid	Wherigo Cache

In the "Coordinates" box, enter the geographic coordinates where you'd like to hide your cache. Existing caches near your future cache will appear on the map (shown here in blue).

One of them (shown here in red) is quite close to your location.

The distance between them must be greater than 161 meters, meaning the green symbol cannot "enter" the red circle. In this case, the system will not allow you to create a cache. OK, we can proceed. Click "Continue" below.



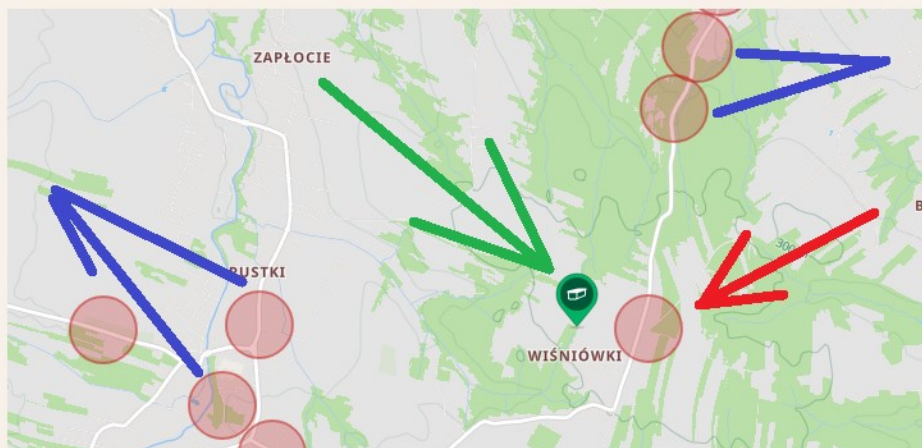
Traditional Cache location

Enter the coordinates you retrieved after visiting the geocache location with a GPS-enabled device.

Coordinates

[Accepted formats](#)

N 49° 42.052' E 21° 25.644'



If you don't want to add waypoints, continue.

Enter a cache name.

Geocache Details

Geocache Name

Add a description of the cache, you can also add images.



Description
Describe in detail this geocaching experience. The description may include information about the location and its significance, the cache container, the journey to get to the cache, and so forth.
If you add an image, please describe it to help the visually impaired who rely on screen readers. Right-click on the image and select "Image properties," then add your image description in the field "ALTERNATIVE TEXT." HTML syntax: ``

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`</>` Source

←

In the "Hint" window you can add a hint that will make it easier to find the cache.

Hint (Recommended)
If you don't want to include a hint, just leave this space blank.

Then, confirm your consent and click "Continue."

Select the size and difficulty.

Size ←
What size is your geocache?

Other Micro Small Regular Large

?

Difficulty and Terrain ←
We recommend [this system](#) to rate your cache.

Difficulty

1 1.5 2 2.5 3 3.5 4 4.5 5

Terrain

1 1.5 2 2.5 3 3.5 4 4.5 5

You can now select the attributes of your cache.

Attributes

You may choose up to 15 attributes to describe this cache. Some have more than one state. Click once for 'applicable'; click twice for 'not applicable'.

[Back](#)[Save and Preview](#)[Thorns](#)

Finally, click "Save and Preview."

You can now see what your cache page will look like. It hasn't been published in the system yet. You can still modify it ("Edit cache"). If you think everything is entered correctly, click "Submit for review."

Your geocache has **not yet been submitted**.

Once your geocache is in place and all of the details have been entered, click "Submit for review." A volunteer reviewer will begin the review process within about 7 days.

[Edit cache](#)

Submit for review

In short, this is how you set up a traditional cache.



The reviewer will verify the data you've entered and, if it's correct, publish the cache. This usually takes less than the 7 days stated.

Basic Abbreviations

FTF (First To Find) – First finder of the cache.

STF (Second To Find) – Second finder of the cache.

TTF (Third To Find) – Third finder of the cache.

DNF (Did Not Find) – Failure to find the cache (the most important abbreviation for problems).

TFTC (Thanks For The Cache) – Thank you for the cache (a common log entry).

TFTH (Thanks For The Hide) – Thanks for hiding it.

SL (Signed Log) – Logbook signed.

TNLNSL / TNLN (Took Nothing Left Nothing Signed Logbook) – Nothing taken, nothing left, logbook signed.

GC (Geocache) – Geocache (cache).

TB (Travel Bug) – Travel item.



CURRENT TYPES OF CACHES

Traditional Cache

A basic, primary type of cache, consisting of at least a container and a logbook. Currently, the most popular container is a mold used as a semifinished product for the production of PET bottles. Smaller containers (so-called "micro-caches") are also used, but they are too small to hold

anything other than a logbook. In the case of a traditional cache, the coordinates displayed on the website describe the actual location of the cache. Traditional Caches constitute the vast majority of the over 3 million active caches.



Multi-Cache

A multi-cache connects at least two different locations, with at least the last one containing a physical container. There are many variations of this type of cache, although in most cases, the first stage involves the seeker finding a clue leading to the second, the second stage leading to the third, and so on. Finding the final stage is only possible after completing subsequent intermediate stages and therefore requires significant commitment on the part of the seeker-user, as failure to find any stage definitively ends the exploration.



Mystery or Puzzle Cache

A cache that can contain items from all other categories. The coordinates on the map are usually false, and solving a complex intellectual task may be required to discover its true location. As geocaching creativity evolves, this type of cache opens up the possibility of creating unique challenges.



Letterbox Hybrid

A letterbox is another form of geocaching that uses clues instead of coordinates. In some cases, however, the cache owner has decided to use both a letterbox and a geocache and has subsequently posted its coordinates on geocaching.com. Each letterbox typically includes a logbook and a stamp, and sometimes an ink pad, for hunters to record their visit.



Wherigo Cache

Wherigo is a set of tools for creating and running outdoor games using a GPS receiver. Using the Wherigo cartridge, geocache hunting can provide a rich experience. While searching for a physical cache, Wherigo allows for, among other things, interaction with real or virtual objects or characters. To run the game contained in the cartridge, a Wherigo-enabled device is required.



Event Cache

Occasionally, local geocaching organizations designate a meeting place and time for geocaching enthusiasts. This is an official gathering of geocaching enthusiasts, registered on the Geocaching.com platform, aimed at networking, sharing experiences, discussing caches, and joint searches. This type of cache earns a point in the statistics for participating (the "Attended" log). These events cannot be commercial in nature. After this event, the cache is archived.



Mega-Event Cache

Similar to the "Event" cache type, except the gathering it refers to must be much larger. To qualify for this category, the event must have a minimum of 500 participants. Typically, "Mega-Events" are annual gatherings of geocachers from around the world.



Giga-Event Cache

Similar to the "Mega-Event" cache, except the event it covers must be even larger. To qualify for this category, the event must have a minimum attendance of 5,000 people.

CITO - Cache In Trash Out Event



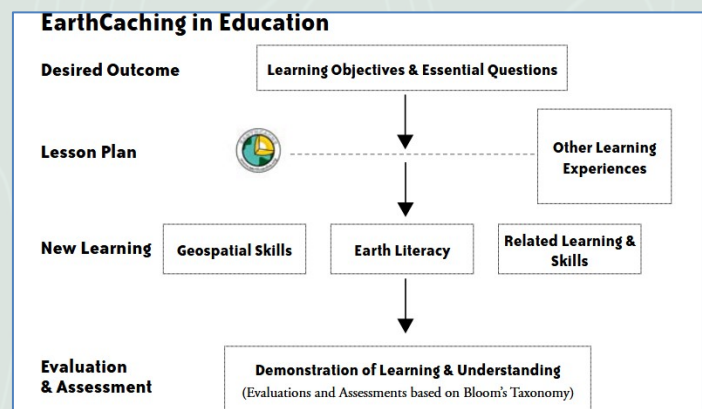
community.

CITO is a type of activity closely related to geocaching. While searching for caches, we collect trash along the way and arrange for proper disposal. Cache-in-Trash-out events are much larger environmental cleanup efforts that involve the broader



EarthCache

EarthCaching is an educational activity in Earth sciences and geography, building on the increasing use of GPS receivers and the growing popularity of geocaching. Educators and others recognize that the Earth itself offers its own treasures to discover and endless opportunities for exploration, discovery, and learning. EarthCache seekers can see how our planet was formed through geological processes, how we use its resources, and how scientists collect information about the Earth. EarthCaches are "virtual" caches that provide visitors who find them with new knowledge or insights about the site—an "educational treasure." Field experiences, interactive hands-on activities, and cutting-edge technology make learning valuable and even fun for students of all ages. Participants gain skills and experience related to





location (e.g., latitude and longitude), navigation, and the use of geospatial technologies. The diagram below illustrates the role EarthCaching can play in education. As part of a teacher's toolkit, EarthCaching can be incorporated into lesson plans to support educational goals by giving learners the opportunity to see Earth's geological and geographical features firsthand or online.



Virtual Cache

Virtual caches are a type of geocaching where the goal isn't to find a physical container, but rather to visit a specific location and confirm your presence by completing a task (e.g., taking a photo, answering a question about the location). These are historical caches, often featuring interesting monuments or views—a landmark, tombstone, memorial, or other interesting location, marked on the map with a ghost symbol.

Stash status (Icon color and appearance)

- ☐ **Colored icon:** The cache is active and accessible.
- ☐ **Grayed/crossed-out icon:** The cache is temporarily unavailable (Disabled) – it's not worth searching for until the owner fixes it.
- ☐ **Yellow smiley face:** A cache you've already found.
- ☐ **Blue sad smiley face:** A cache where you logged a DNF (Did Not Find).
- ☐ **Red triangle/mark:** A cache for which you've changed the coordinates (e.g., after solving a puzzle).



TECHNICAL TIPS FOR USING GPS, QR CODES, AND DIGITAL TOOLS FOR GEOCACHING.

What is GPS?

GPS, or the Global Positioning System, consists of 25 satellites orbiting the Earth. They allow GPS receiver users to determine their geographic location on Earth. A GPS receiver calculates its position by analyzing signals from at least four satellites. Depending on the type of GPS receiver used, location accuracy can range from a few centimeters to several meters. The system operates in all weather conditions and is used in countless applications – navigation, transportation, commerce, industry, scientific research, surveying, and education – to precisely determine the position of an object or location at a specific point on the Earth's surface.

How GPS works?

- Satellites: A constellation of satellites constantly orbits Earth, sending signals containing information about their location and time.
- Receiver: A GPS device (in a phone, car, or watch) receives these signals.
- Calculations: It measures the time it takes for the signal to reach each satellite and, based on the satellites' locations, calculates its own position (longitude, latitude, and altitude).

GPS Applications.

- Navigation: In cars, on bikes, and on foot (apps and devices).
- Location: Vehicle tracking, monitoring children, the elderly, and animals.
- Geodesy and cartography: Precise mapping of areas.
- Timekeeping: Synchronizing systems worldwide. □
- Geotagging: Adding location data to photos and other files.



Basic rules for using GPS.

Activation: On Android smartphones, go to Settings > Location and enable it by selecting "High Accuracy" mode (uses GPS, Wi-Fi, and cellular networks).

Navigation on your phone: Open a map app (e.g., Google Maps), allow location access, enter your destination, and start navigation.

Offline Operation: Navigation is possible without internet access if maps have been previously downloaded.

Tip: For the device to properly acquire satellite signals, it must have a clear view of the sky.

Accuracy may be lower indoors.

GPS mapping.

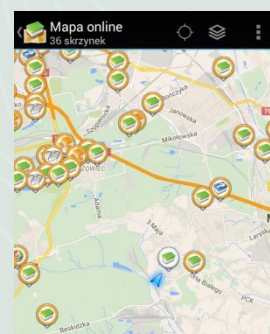
It is the process of recording, collecting, and visualizing spatial data (location) using a navigation system. GPS mapping relies on the reception of signals from satellites, which allows for the calculation of an exact position on Earth, often combining this data with geographic information systems (GIS). This allows for the creation of digital maps, route tracking, or precise positioning of objects. This technology enables precise determination of geographic coordinates, which is widely used in precision agriculture, surveying, transportation, and navigation, enabling the mapping of fields, crops, and driving routes with an accuracy of a few centimeters. In personal navigation, mapping is used in smartphones and in-car navigation systems (e.g., Google Maps) to determine routes.

c:geo

c:geo is a popular, free, open-source geocaching app for Android that allows you to find, log, and navigate to geocaches without the need for an official app. It supports offline maps, GPX file import, and works with Geocaching.com service. The app is highly useful in the field thanks to its compass and numerous navigation features.

Key features of c:geo for phones:

- ☐ Search: Live map and advanced filters for searching for caches in the area.
- ☐ Offline: Download descriptions, photos, and maps (e.g., from Locus) for offline use.
- ☐ Navigation: Built-in compass and integration with external apps (Google Maps, Locus, Sygic).
- ☐ Management: Logging finds, saving notes, managing travel items.





- Compatibility: Full integration with geocaching accounts and the ability to import GPX files.

QR codes.

QR codes are a key element of modern geocaching, combining outdoor fun with digital technology. Here's how to use them most effectively in apps like c:geo and official Geocaching tools:



1. Logging Lab Caches

- Adventure Lab: This is the most common use of QR codes. Many Adventure Lab stages require scanning a code placed in the field to confirm your presence and complete the challenge.
- Munzee: If you're using c:geo with Munzee elements, QR codes are essential – scanning them replaces the traditional paper logbook entry.

2. Quickly opening descriptions in c:geo

You can generate a QR code for a specific cache on Geocaching.com.

In the c:geo app, use the "Scan QR Code" function to instantly access the cache description without having to manually enter the GC number (e.g., GC12ABC).

3. QR Codes in Mystery/Unknown Caches

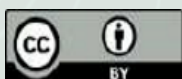
In 2026, cache creators are increasingly using QR codes as a puzzle element:

- Hidden Data: A QR code can contain final coordinates or a hint.
- Virtual Logbooks: In some caches (especially on the Opencaching.pl platform), a QR code replaces the paper logbook, directing you directly to the online entry form.

4. Travel Bugs (Trackables)

Many new travel bugs (Trackables) have a QR code engraved on the tag instead of just an alphanumeric code. Simply point the camera in the c:geo app at the code to instantly "Discover" or "Grab it" the item without the hassle of typing in characters.

5. Built-in Scanner:





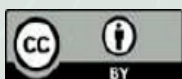
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You don't need a separate QR code app. Most modern phones from 2016 have a scanner integrated into their cameras that automatically recognize geocaching links and open them in c:geo.

Safety: Never scan QR codes that appear to have been "forcibly" attached to the container (e.g., advertising stickers) to avoid malicious links.

No signal: If you scan a code in a location without internet, take a photo of it. Most apps (including c:geo) allow you to "scan from a photo" saved in your gallery once you return to civilization.





EDUCATIONAL STRATEGIES TO INTEGRATE GEOCACHING INTO HERITAGE, SUSTAINABILITY, AND DIGITAL LITERACY PROGRAMS.

Heritage

Integrating geocaching with cultural heritage is an innovative cultural tourism strategy that transforms sightseeing into an active, outdoor game. It promotes the region, promotes historical education, and increases tourist engagement by combining modern technologies with authentic historical sites.

Key strategies for integrating geocaching with cultural heritage.

1. Creating Thematic Geocaching Trails.

- Historical and Cultural Trails: Hiding caches at monuments, ruins, memorials, museums, or windmills, creating logical, thematic routes (e.g., "Insurgents' Trail," "Wooden Architecture Trail").
- Narrative Threads (Adventure Lab): Using cache types like Adventure Lab to guide players through historical landmarks, unlocking stories, facts, or puzzles about a given location.
- Geocaching on Challenging Heritage: Using the game to familiarize and educate about challenging cultural heritage, such as at memorial sites, while maintaining due respect.

2. Education and the Gamification of Heritage.

- Educational Cache Descriptions: Caches should include detailed historical information, anecdotes, or multimedia materials about the location in their description (listing) on geocaching.com.
- Geocaches as a Guide: A geocache is not an end in itself, but a tool that draws visitors to a specific object, which they can then learn about.



- Mystery Caches: Require players to gather local knowledge (e.g., counting information plaques, dates on monuments) to obtain the coordinates of the final cache.

3. Local Engagement and Collaboration.

- Collaboration with cultural institutions: Museums, guides, and local heritage groups can establish official geocaches to attract younger visitors.
- Geocaching Heritage Project: Engaging local communities in discovering and documenting the history of their region by hiding geocaches in places that are important to them.

4. Good Practices and Sustainable Development.

- Heritage Protection: Caches should not be placed directly on monuments, nor should they be damaged, nor should they be encouraged to "wildcat" (damage the surrounding area during searches).



Safety Rules: Caches in historic sites must be placed in a manner that is safe for visitors and does not damage the structure of the monument.

- Ethics and Respect: Places of religious significance or cemeteries require special care and consultation with site managers.

5. Benefits of Integration.

- Growth in tourism: Geocaching attracts active tourists, including the younger generation (35% increase in young visitors between 2018 and 2021).
- A new form of experience: Shifting from passive sightseeing to active, playful cultural experiences (4×E model: Education, Entertainment, Aesthetic, Escapist).
- Promoting hidden treasures: Promoting lesser-known, local historical sites.

Sustainability

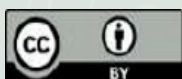
Integrating geocaching with sustainable development involves transforming this popular outdoor game into an environmentally friendly tool that promotes environmental education, respects local ecosystems, and supports responsible tourism. Key strategies include environmental protection efforts, participant education, and close collaboration with local communities and land managers.

Key Integration Strategies.

1. Ecological principles (Leave No Trace)

- Implementing "Leave No Trace" principles: Participants should stay on designated paths to avoid damaging vegetation and soil erosion.
- Responsible hiding: Caches should not be buried, destroy natural surroundings, or disturb animal nesting sites.
- Choosing sustainable containers: Using eco-friendly, durable containers that are resistant to damage and do not become "geo-waste."

2. CITO Initiative (Cache In Trash Out)





- Promoting a culture of tidying up: Engaging in CITO (Cache In Trash Out) events, which involve collecting trash while searching for caches.
- Education through action: Organizing events that combine geocaching with tree planting or trail clearing activities, which increases environmental awareness..

3. Sustainable tourism and education.

- Educational Geocaching (EarthCache): Creating EarthCaches that don't require a physical container but direct visitors to places of significant geological or natural significance, teaching about environmental conservation.
- Promoting Local, Lesser-Known Destinations: Using geocaching to drive tourism to less traveled areas, reducing pressure on popular attractions (overtourism).
Sustainable Transportation: Encouraging people to reach caches by bike or on foot, reducing their carbon footprint.

4. Cooperation with land managers.

- Permits and Guidelines: Caches may be hidden with the consent of landowners or national park managers, ensuring compliance with local conservation regulations.
- Environmental Monitoring: Geocachers collaborate with foresters/managers, for example, by reporting damaged sites or removed contaminants.

5. Cache Lifecycle Management.

- Responsible maintenance: Regularly checking the condition of caches to prevent damage and littering.
- Archiving: Removing caches from the premises if maintenance is impossible or harmful to the environment..



Through these strategies, geocaching is transformed from a simple game into a "green" way to explore, building respect for nature and active community involvement in environmental protection.

Digital Literacy

Integrating geocaching with digital literacy is a modern educational method that combines outdoor physical activity with the use of information and communication technologies (ICT). These strategies include learning how to use GPS, analyzing geoinformation data, creating digital content, and developing online safety.

Oto główne strategie integracji geocachingu z umiejętnościami cyfrowymi:

1. Using Geocaching for Technical Competence (ICT)

- **Using GPS Apps and Devices:** Participants learn how to use the Geocaching app on smartphones or dedicated GPS receivers, including navigating to a point, setting waypoints, and using digital maps.
- **Working with Geoinformation Data:** Learning to interpret geographic coordinates (longitude and latitude), understanding data formats (degrees, minutes, seconds), and using geographic information systems.
- **Logging and Reporting in the Cloud:** Finding a cache isn't the end. Participants log their finds online, developing digital skills related to managing online accounts, interacting on social media, and creating activity logs..

2. Geocaching as a Digital Education Tool (Digital Literacy)

- **Digital Content Creation:** Students design their own geocaching route: they hide caches, mark coordinates, create digital descriptions (listings), and quizzes on the website, which teaches content creation and compliance with regulations.
Crypto-geocaching: Using "Mystery" or "Letterbox Hybrid" geocaches, which require solving digital puzzles, ciphers, or finding information online before heading out.



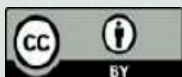
- **Media Education and Safety:** Geocaching provides an opportunity to learn netiquette (how to log), privacy (what information to share), and caution when interacting with strangers in location-based games..

3. Strategies for Education and Community Development.

- **Low-tech to High-tech Scenarios:** Introduction to geocaching without the use of technology (paper maps), followed by advanced use of smartphones and GIS.
- **Urban and Outdoor Geocaching Games:** Creating educational trails where individual caches contain tasks (e.g., QR codes, quizzes) that must be completed using a phone.
- **"Cache In, Trash Out" (CITO) and Ecology:** Integration with environmental education through digitally coordinated cleanups.

4. Key Digital Skills Developed by Geocaching:

- Satellite navigation and digital map reading.
- Mobile app operation and user account management.
- Online information search (cache exploration).
- Online security (privacy protection).
- Online collaboration and communication.





PRACTICAL TEMPLATES AND CASE STUDIES TO SUPPORT EDUCATORS IN DESIGNING GEOCACHING CHALLENGES.

"In some strange way, every new fact or observation I could find did not seem to be my own 'discovery,' but rather something that had always been there and that I had just happened to pick up." — Subrahmanijan Chandrasekhar

We're not sure if mathematician Subrahmanijan Chandrasekhar had geocaching in mind, but we do know that geocachers have been experts in the science of discovery since the game's inception. This expertise is evident in their dedication to finding new caches and in their creativity as they discover new ways to create and hide them.

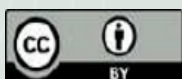
Many geocachers draw inspiration directly from science when designing their caches. To celebrate this chemistry between geocaching and science, here are five geocaches and one science-themed Adventure Lab®. Each of these caches represents a different scientist or field of science.

Vienna Science Quest 7 – Women in Science (GC4RXAA)

GC4RXAA is one of a series of geocaches dedicated to the history of science in Vienna, Austria. This multi-stage geocache takes seekers on a seven-stage journey through the city, educating them on the scientific discoveries of many important women in science. Learn more about the renowned nuclear physicist Lise Meitner and chemist Anna Simona SpiegelAdolf while gathering information and searching for the final coordinates.

Spåralogi (GCJG9V)

This geocache will reveal a little-known field of science you probably haven't heard of before: sporalogy. Sporalogy is the "science" of predicting a person's future based on the movement and position of trams at the time of their birth. Some might call it more art than science, but the father of sporalogy, Finnish physicist Nils Mustelin, would have something to say about it. To find this cache, visit various tram stops in Helsinki and note the numbers at each stop to determine the cache's coordinates.





The Mad Dendrologist (GCMH1V)

This discovery gives seekers a crash course in dendrology, the study of trees. To find the location of this Mysterious Cache in a public park in Prague, seekers must visit nine different locations in the park and identify nine of the most common trees in Central Europe. Each tree has a number, and using this number and the trees' Latin scientific names, they will have all the information needed to complete the final coordinates.

Homenagem a Avelar Brotero (GC3MFKE)

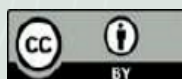
This cache commemorates Félix de Avelar Brotero, a respected Portuguese botanist. Brotero wrote numerous important works on general botany, as well as detailed works on plants native to Portugal. The cache is located in a public garden in Lisbon, named after Brotero. Cache seekers can admire the beauty of the garden's botanical features as they make their way to the Multi-Cache location.

Physics Series – Curious Cache (GC7Q6FC)

Anyone who wants to find this cache must be prepared to delve into scientific formulas. Real scientists will certainly have an advantage here. This "curious" cache is named after Marie Skłodowska-Curie, a Nobel Prize winner who pioneered the study of radioactivity. Those seeking the cache must first find the names of two elements discovered by Marie Skłodowska-Curie. Then, they must use the formula for exponential radioactive decay to calculate how many days it takes for 250 molecules of one of these elements to decay into 211. Once they find the answers, they're ready for their own discovery – the cache's location!

Adventure Lab: Solar System Adventure in Pasadena

With NASA's Jet Propulsion Laboratory and the Planetary Society both headquartered in Pasadena, this Southern California city is a logical place for an adventure dedicated to the solar system. This adventure is a virtual model of the solar system that takes you to various Pasadena attractions while traveling to five planets known to the ancient world.





Fornasini, S. (2020). *Using geocaching to promote active aging: Qualitative study* - researchgate. JMIR.

