

Healthy Schools  
*in motion*



# Geocaching Loaner

Program Guide

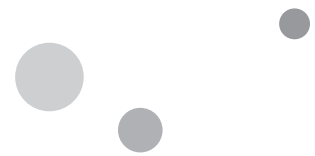


Started in September, 2000, by GPS enthusiast and web developer Jeremy Irish, Geocaching.com now hosts more than 5 million geocachers, and more than 1.3 million active caches. The site offers an array of features for both novice and avid geocachers. If someone is new to this worldwide activity, Geocaching.com will lead them through all the necessary steps for their first geocaching experience. The site provides an in-depth tutorial for getting started, as well as instructions on finding geocaches. Dozens of press articles and millions of online conversations later, Geocaching.com is the world's largest location based gaming portal.

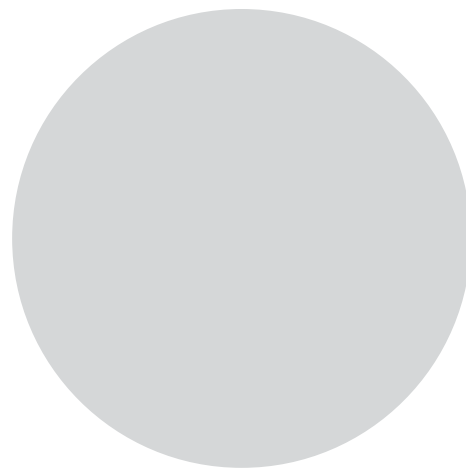
**Healthy Schools *in motion* gratefully acknowledges Groundspeak, Inc. for allowing us to use and adapt information from Geocaching.com. Geocaching.com is the largest geocaching site with a worldwide membership of over one million caches. The Groundspeak Geocaching Logo is a registered trademark of Groundspeak Inc. and is used with permission. For more information about Groundspeak Inc., visit [www.groundspeak.com](http://www.groundspeak.com).**



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# Manitoba *in motion*

*In motion* is a provincial strategy to help all Manitobans make physical activity part of their daily lives for health benefits and enjoyment. Our vision is to make Manitobans healthier by increasing everyone’s level of physical activity.

Most of us already know the importance of active living. Physical activity increases energy, reduces stress, strengthens the heart and lungs, and helps us reach and maintain a healthy body weight. The result is a better quality of life for people of all ages.

Yet less than half of all Manitobans get enough physical activity to gain those health benefits. What’s needed is the motivation to get ourselves and each other “in motion”. That is why the provincial government has joined with community partners in the areas of physical activity, health, healthy living, recreation, sport, and education to raise activity levels and reduce barriers to physical activity.

*In motion* activities focus on families, children, youth, adults, and older adults in the school, home, community, and workplace settings. Support is available to help schools, workplaces, and communities develop action plans to become “in motion”.



# Healthy Schools *in motion*

Healthy Schools and Manitoba *in motion* have partnered to offer Healthy Schools *in motion*. Encouraging schools to become “in motion” is one way to promote physical activity to children and youth.

## About Healthy Schools

Healthy Schools is Manitoba’s provincial school health initiative promoting the physical, emotional and social health of school communities. The Healthy Schools Initiative recognizes that good health is important for learning and that schools can have a positive influence on the health of children, youth and their families. Working in partnership with school divisions, schools, and community partners, Healthy Schools supports progress towards positive health and education outcomes for all students. The Initiative focuses on six priority health areas within the context of the school community:

- physical activity
- healthy eating
- safety and injury prevention
- substance use and addictions
- sexual and reproductive health
- mental health promotion

For more information about Healthy Schools, visit: [www.manitoba.ca/healthyschools](http://www.manitoba.ca/healthyschools)

## About Healthy Schools *in motion*

A Healthy School *in motion* values the benefits of physical activity and ensures that it is a visible priority in the daily life of the school. An *in motion* school commits to working towards the goal of providing 30 minutes of daily physical activity for each student. This is achieved through any combination of physical education, physical activity breaks, physical activity programs, intramurals, and special events. By registering your school, you are making the commitment to work towards this goal.

## Why promote physical activity at school?

Schools are in a unique position to have a positive influence on the health of children, youth, and their families. Plus, the growing body of research from Canada and around the world shows that children and youth who engage in regular physical activity have improved academic performance. Promoting physical activity at school is a win-win! Children and youth need daily physical activity for healthy growth and development. The *Canadian Physical Activity Guidelines* recommend that children and youth accumulate at least 60 minutes of moderate-to-vigorous intensity physical activity every day. Yet research shows that only 9 per cent of boys and 4 per cent of girls accumulate 60 minutes of moderate-to-vigorous intensity physical activity per day.



## Benefits of being a Healthy School *in motion*

Physical activity has many benefits and it affects all aspects of a child's growth and development. Regular physical activity is an important part of every child's daily life. Schools that promote physical activity not only benefit the health and wellbeing of their students, but also encourage and benefit their staff and community. It is important to educate, encourage, and motivate children to participate in regular physical activity. The benefits of physical activity stay with children as they become adults and the positive behavioural traits of active children may also transfer to adulthood. For children, being regularly active:

- enhances academic performance. Basic classroom skills including arithmetic, reading, memorization, and categorization improve with sufficient physical activity.
- is beneficial psychologically, regardless of weight. It is associated positively with self-esteem and self-concept, and associated negatively with anxiety and depression.
- improves skeletal health, which in turn reduces their risk of developing osteoporosis in the future. Daily weight-bearing activities, of even brief duration during adolescence, are critical for enhancing bone development that affects skeletal health throughout life.
- has a positive impact on behaviour and healthy lifestyles. Among young people, high levels of fitness are associated with a decline in smoking and drinking behaviour, and healthier eating habits.
- results in having less body fat.

## Contact Us

For more information on Healthy Schools *in motion*, call:

In Winnipeg 204-945-3648

Toll free 1-866-788-3648

or visit [www.manitobainmotion.ca/schools](http://www.manitobainmotion.ca/schools)

# Healthy Schools *in motion* Geocaching Loaner Program

Healthy Schools *in motion* is pleased to offer the Healthy Schools *in motion* Geocaching Loaner Program in partnership with the Manitoba Physical Education Teachers Association (MPETA). This program provides schools with the equipment and resources they need to geocache. Through the Healthy Schools *in motion* Geocaching Loaner Program, schools will have everything they need to provide students with an innovative experience while being physically active.

As part of the Healthy Schools *in motion* Geocaching Loaner Program, Healthy Schools *in motion* provides schools with a Geocaching Loaner Kit. Each Geocaching Loaner Kit contains:

- a Healthy Schools *in motion* Geocaching Loaner Program School Rental Agreement.
- a Healthy Schools *in motion* *Geocaching Loaner Program Guide* which provides teachers with the basic knowledge of geocaching, suggestions for activities, curriculum links, and much more!
- 20 Global Positioning System (GPS) units
- an *eTrex Quick Start Guide* detailing the basic features of the GPS devices
- one MapSource® CD-ROM
- program feedback forms
- additional resource material from [Geocaching.com](http://Geocaching.com)

## ***\*\*Please note that your school is responsible for:***

- providing batteries for the GPS units (minimum 40 AA batteries)
- making your own caches

## **How is “geocaching” pronounced?**

It is pronounced “Geo-cashing”, like cashing a cheque.



# How does my school access the Healthy Schools *in motion* Geocaching Loaner Program?

## Accessing the Healthy Schools *in motion* Geocaching Loaner Program is easy!

1. Fill out the Healthy Schools *in motion* Geocaching Loaner Program School Rental Agreement and send it to the Manitoba Physical Education Teachers Association (MPETA). Please note — your school must be a registered Healthy School *in motion* to access the Geocaching Loaner Program. To check if your school is a registered and/or to become a Healthy School *in motion*, visit [www.manitobainmotion.ca/schools](http://www.manitobainmotion.ca/schools).
2. MPETA will confirm your registration and book a two week time slot for your school to borrow the kit. The Geocaching Loaner Kit will be sent to your school before your two week time loaner period begins. Let the geocaching begin!
3. At the end of your school's two week loaner period, simply fill out the Program Feedback Form and place it back in the kit, along with all the GPS units and *eTrex Quick Start Guide*. The Healthy Schools *in motion* Geocaching Loaner Program Guide is yours to keep.
4. MPETA will then make arrangements to pick up the Healthy Schools *in motion* Geocaching Loaner Kit from your school after your two week time slot.



# What is Geocaching?<sup>1</sup>

Geocaching is a real-world, outdoor treasure hunting game using GPS-enabled devices. Participants navigate to a specific set of GPS coordinates and then attempt to find the geocache (container) hidden at that location. Geocaching is quickly becoming a popular outdoor adventure game among all ages and ability levels. It combines location-based gaming, social networking, treasure hunting, GPS navigation, and outdoor recreation. Geocaching is an activity that lets you explore the great outdoors—parks, nature trails, or simply the city routes around your home or school to find the secret cache with a hand held GPS unit.

## What is the meaning of the word geocaching?

The word geocaching refers to GEO for geography, and to CACHING, the process of hiding a cache. A cache in computer terms usually refers to information stored in memory to make it faster to retrieve, but the term is also used in hiking/camping as a hiding place for concealing and preserving provisions.

## Geocaching around the World

Today, more than 1.4 million geocaches have been hidden, and found by more than 4 million people worldwide. More specifically, the United States and Germany lead the world in this activity, with the Czech Republic, Canada and the United Kingdom following. Geocachers search for caches hidden all around the world. In fact, approximately 200 countries take part in geocaching. The caches location with longitude and latitude, along with some clues are recorded on the internet.

## What do I need to geocache?

- a GPS enabled device
- computer to input coordinates with MapSource® CD-ROM
- caches
- items to put in the caches
- location
- batteries (teacher should always carry extra batteries)

<sup>1</sup> [www.geocaching.com](http://www.geocaching.com)



# About Caches<sup>2</sup>

## What does a geocache look like?

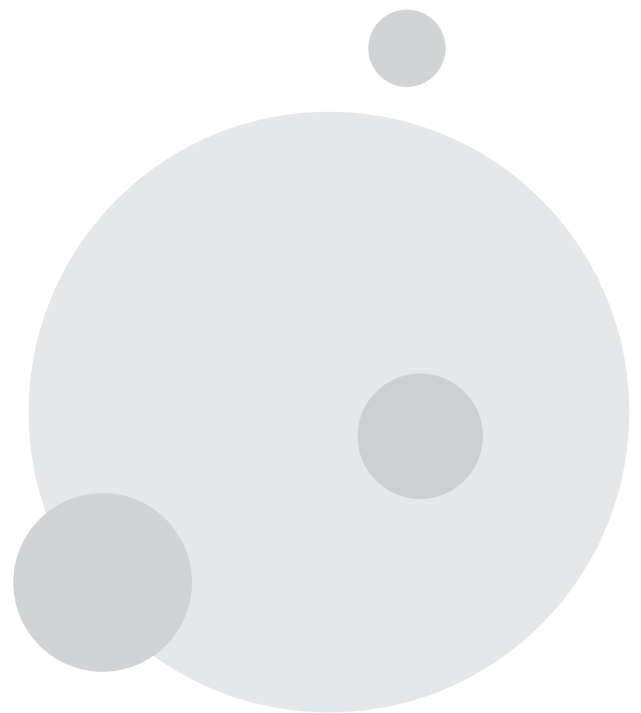
Geocaches are hidden in plain sight and never buried, but they are often cleverly camouflaged. They can vary greatly in size and appearance — everything from large, clear plastic containers, to film canisters, to a fake rock with a secret compartment. Examples of cache sizes include:

- **Micro cache** – Less than 100ml. Examples: a 35 mm film canister or a tiny storage box. A nano cache is a common sub-type of a micro cache that is less than 10ml.
- **Small cache** – 100ml or larger, but less than 1L. Example: A sandwich-sized plastic container or similar.
- **Regular** – 1L or larger, but less than 20L. Examples: a plastic container about the size of a shoebox.
- **Large cache** – 20L or larger. Example: A large bucket.

It is up to you, the teacher to choose an appropriate container to use as a cache for your students. Students love a challenge. Find creative ways to camouflage your containers (ex: camouflage hockey tape).

### Cache tip:

Make your caches waterproof so they can be used year round in all types of weather



<sup>2</sup> [www.geocaching.com](http://www.geocaching.com)

## What can I put in a cache?

Caches that are set up temporarily for school/classroom geocaching activities may contain logbooks, stickers, or relevant items representing a curriculum connection such as a mathematical equation placed in the cache, a word scramble, or a physical activity task. Examples of items that could be placed in a geocache include:

- stickers
- school pin
- buttons
- log book ( for people to sign)
- small key chains
- trackable items such as a Travel Bug® or Geocoin

## What should not be placed in a cache?

Students of all ages can hide and seek geocaches, so think carefully before placing an item into a cache. Respect local laws at all times. Do not put food or heavily scented items in a cache. Animals have a better sense of smell than humans, and in some cases caches have been chewed through and destroyed because of food items in a cache.

## Can I move a cache once I find it?

Please do not move a cache from its original location. Cache owners are responsible for maintaining their cache placements.



# Types of Geocaches Teachers Can Use<sup>3</sup>

The cache options below offer a wide variety of geocaching experiences. Choose one that best suits your students' needs and abilities.

## Traditional Cache

This is the original cache type consisting, at a minimum, of a container and something inside. Normally you'll find a Tupperware® container or a smaller container ("microcache") filled with goodies.

## Multi-Cache

A multi-cache ("multiple") involves two or more locations, the final location being a physical container. There are many variations, but most multi-caches have a hint at the first location that helps one reach the second location, where there is a hint to the third, and so on.

## Mystery or Puzzle Caches

The "catch-all" of cache types, this form of cache can involve complicated puzzles. Geocachers will first need to solve pieces of the puzzle to determine the coordinates. For example, teachers could provide a word scramble or math equation for students to figure out the coordinates. Due to the increasing creativity of geocaching, this becomes the staging ground for new and unique challenges.

<sup>3</sup> [www.geocaching.com](http://www.geocaching.com)

# About GPS Devices<sup>4</sup>

## What is a GPS device?

A GPS (Global Positioning System) device is an electronic unit that can determine your approximate location (within 2 to 9 metres) on the planet. Coordinates are normally given in latitude and longitude. You can use the device to navigate from your current location to another location. Some devices have their own maps, built-in electronic compasses, and voice navigation, depending on the complexity of the device.

## How does a GPS work?

Each GPS device is a computer that receives signal broadcasts from GPS satellites. A device needs to read signals from at least three satellites at a time to calculate its general location by a process called trilateration.

With signals from four satellites, a GPS receiver can get a more accurate fix that includes altitude and the exact time, as well as latitude and longitude. The more satellite signals the receiver reads, the more accurate the position it reports to you.

## If I use a GPS device, can someone track where I am going?

No! GPS devices do not actually broadcast your location. The satellites using radio frequencies actually broadcast their own position. Your GPS device takes that information to figure out where you are (trilateration).



### Did you know?

there is a slight “error” to every GPS device due to technological limitations? Your device can get you close to the cache, but there are a number of things to consider as you get closer to the cache location.

<sup>4</sup> [www.geocaching.com](http://www.geocaching.com)

# Basic Features of a GPS Device<sup>5</sup>

These are the basic features of the GPS units that come with the Geocaching Loaner Program:



**POWER/Blacklight Key** – press and hold to turn the unit on or off. Press and release to adjust the backlighting, view the date or time, and view the battery capacity.

**IN/OUT Zoom keys** – from the Map page, press to zoom in or out. From any other page, press to scroll up or down a list.

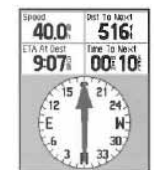
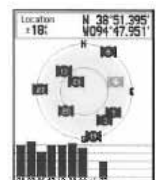
**MENU/FIND key** – press and release to view options for a page. Press twice to view the Main Menu. Press and hold to display the FIND menu.

**QUIT/PAGE key** – press to cycle through the main pages. Press and release to cancel data entry or exit a page. Press and hold to turn the electronic compass on or off.

**ENTER/ROCKER key** – press and release to enter selected options and data or confirm on-screen messages. Press and hold to mark your current location as a waypoint. Move up, down, right, or left to move through lists; select fields, on-screen buttons, or icons; enter data; or to move the map panning arrow.

There are three recurring main pages and one that shows only with each start-up. Press and release QUIT to cycle through the pages.

1. **Satellite Page** – appears only at start-up and shows the GPS receiver status, satellite locations, satellite signal strength, and the receiver’s current location. After powering it up, the unit will attempt to ‘lock’ onto the satellites; you must be outdoors with a clear view of the sky to get a signal. Once locked on, you’re ready to navigate!
2. **Map Page** – shows a detailed map of the area around your current location.
3. **Compass Page** – guides you to your destination. Follow the pointer arrow to navigate to the chosen waypoint.
4. **Main Menu** – contains advanced features and settings.



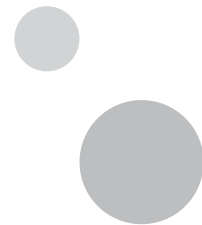
<sup>5</sup> Garmin eTrex Venture® HC Quick Start Guide

# Benefits of Geocaching for Schools

The benefits of geocaching go far beyond finding the “secret caches”, although that’s fun too! Geocaching encourages students to get outside and get “in motion” — many of the geocaches are accessible by walking, biking, or for the more adventurous types by canoe or kayak.

There are lots of ways schools can get in on the fun! Geocaching can help to:

- get students outdoors to experience nature, refresh their mind and increase their energy
- encourage exploration in parks, nature trails, cities, towns
- increase physical activity levels by walking, rolling, biking, hiking, etc.
- promote social interaction between students while being physically active
- encourage students of all abilities to participate
- engage students in learning the core curriculum subject areas in a fun and active way
- promote peer mentoring
- link activity and nature with core curriculum outcomes
- promote respect for nature and the environment (no gym required)





# Two Approaches to Geocaching with your Students

The choice is up to you...  
Do I go global or local?  
This Guide will help you get started on both approaches (see page 23 for activity ideas).  
For additional information on the global approach, visit [Geocaching.com](http://Geocaching.com).

	Local Cache Set-up	Global Cache Set-up (Geocaching.com)
<b>What is the main difference between the local and global approaches?</b>	These caches are hidden in a location chosen by the teacher for a geocaching activity. The existence and location of geocaches are not shared online, only the teacher who hides them knows where they are located.	These caches are hidden in a public, global domain where everyone searches, shares information, and are part of the global geocaching community. The existence and location of geocaches are shared online at <a href="http://Geocaching.com">Geocaching.com</a> .
<b>Who hides the caches?</b>	The teacher hides the caches in a location they choose (ex: school, community, etc).	The teacher can hide the caches in a location they choose (ex: school, community, etc), but they must be submitted online at <a href="http://Geocaching.com">Geocaching.com</a> OR pre-hidden caches can be found from <a href="http://Geocaching.com">Geocaching.com</a> .
<b>How long do the caches last?</b>	These are temporary caches that last as long as the teacher chooses. This allows for easy placement and retrieval of caches in one day (or less). These caches do not need to be submitted online or monitored on a long-term basis.	These are permanent caches that must be maintained. The teacher must ensure that the cache is in the same spot as the online coordinates, the contents are still there, and that it's not damaged for as long as it's listed online.
<b>Who can find the caches?</b>	Only the students who are doing the geocaching activity as the caches are not logged online.	Anyone who visits <a href="http://Geocaching.com">Geocaching.com</a> could find the caches as they will be listed online.
<b>Activity Example</b>	Simple treasure hunt – Geocaches are set up by the teacher ahead of time around the school yard. Students locate the caches and take a clue from each cache, then bring it back to solve a word riddle, anagram, or mystery.	Travel bug tracking <sup>6</sup> – Your class can purchase trackable tags (from <a href="http://www.geocaching.com">www.geocaching.com</a> ) and attach them to a small item of interest, perhaps a school mascot or figurine. Trackable items can be “released” into a geocache with a “mission”. Geocachers across the globe help your travel bug along on its mission. For example, your class may be studying China. You may release a travel bug with the mission to visit Beijing. Ask geocachers to document your travel bug’s journey with pictures and write ups by including an information card with your travel bug. <a href="http://Geocaching.com">Geocaching.com</a> also provides statistics on miles travelled. You and your students can follow its adventures and study its travels.

About [Geocaching.com](http://Geocaching.com)<sup>6</sup>

# Let's Get Started — a Teacher's Guide to Geocaching at School!

Geocaching is great because it allows students of all ages and abilities to work together to find the cache! Everyone will contribute different strengths to the activity. Follow these easy steps to geocache at school:

## 1. General Geocaching Knowledge

Read the Healthy Schools *in motion Geocaching Loaner Program Guide* to gain an understanding of the basics to geocaching at school.

## 2. Familiarize yourself with how to use a GPS

Read the *eTrex HC series Quick Start Guide* (included in the Healthy Schools *in motion Geocaching Loaner Kit*) for information on how to use the GPS. Also familiarize yourself with the basic features of a GPS device (see page 13).

## 3. Make your Caches

Select and make caches, select items to put in your caches (see page 9 for information about caches).

## 4. Find a Location to hide your Caches

Locations can vary in terms of terrain, rural or urban settings, and can highlight historical landmarks, nature trails, local geography, or spots of significance to your school or community. Here are some tips to help you select a location to hide caches.

- Make sure your cache is accessible to all your students (age and ability levels).
- Consider terrain that is easy to navigate and wheelchair accessible.
- Caches could be placed just off trails (preserve environment) but not too close that a passerby might accidentally stumble on it.
- Teachers should know the area in which they are geocaching, and visit the site ahead of time.

- Check for rules and regulations of the location when placing caches on public property.
- Always ask permission to place a cache on land that is privately owned.
- Be respectful of your natural surroundings and mindful of the environment.
- If you are logging your cache online (global approach— see page 15):
  - Use common sense when selecting your cache location as other people will be visiting these areas in search of your cache.
  - Regular maintenance on your geocache is your responsibility. Make sure it is still in the location you first placed it and it is not damaged.

## 5. Hide your Caches and Mark the Waypoints

Hide your caches in the location of your choice and mark the waypoints on a single unit – this will be the master GPS.

### *What is a Waypoint?*

A waypoint is a reference point for a physical location on earth (the location where your cache is hidden). Waypoints are defined by a set of coordinates that typically include longitude, latitude, and sometimes altitude.

### *How do I mark a Waypoint?*

- The first thing you want to do is mark the location of your starting point (ex: front doors of school, point on a trail) so that students can find their way back.
- Press and hold the Enter button until the Mark Waypoint window appears.
- Use the ROCKER to move to the various fields. To accept the waypoint with the default information, select OK, and press ENTER.
- Mark the waypoints at each hidden cache location.
- Write the waypoints on the cache itself as well.

### *How do I Review a Waypoint/Go to a Waypoint?*

- To locate a previously stored waypoint, use the PAGE button to get to the MENU page, press FIND.
- Use the ROCKER to move down to the Waypoints category and press ENTER.
- Then, using the ROCKER, move down to the desired Waypoint and press ENTER.
- Now you can use the selected waypoint.



- To go to the waypoint, move down to the GOTO selection and press ENTER.
- Follow the COMPASS (you must be in motion for the compass to work), the distance will continually reduce until you are approximately 6 metres from the cache.
- The GPS will BEEP alerting you that the geocache is near. Search the area to locate the geocache.
- Once the cache is located, take an item form the cache and replace the cache in the location it was found.

## 6. Transfer Waypoints to the class set of GPS units

There are two ways to transfer information from the master GPS to all of the GPS units in the Geocaching Loaner Kit:

### a) Computer

Insert the MapSource® CD-ROM into your computer to install the software (follow the instructions on the MapSource® CD-ROM case that comes with the Geocaching Loaner Kit). The Garmin GPS connects directly to your computer through an interface cable (included in the kit), you can use the “Send to GPS” functionality to send a cache listing directly to your GPS devices. You will need to connect each GPS to the computer to transfer the coordinates to that GPS. Once you’ve done each GPS, the coordinates are loaded and the GPS devices are ready to use.

If you are using the global approach to geocaching with you students (see page 15), at this point you would also need to log the coordinates online at **Geocaching.com** which opens them to everyone in the world (these caches must be maintained). If teachers are using a local approach to geocaching, it is not necessary to log the waypoints online – teachers simply transfer all the waypoints to their class set of GPS using their computer and have the students find the local caches they have hidden. Students would receive a geocache worksheet listing all the waypoints and collect items or place stickers next to the corresponding waypoints from the caches they have located (see page 30 for a sample of a geocaching worksheet).

### b) Inputting Coordinates by Hand

If your device does not connect directly to the computer via an interface cable, you will need to enter coordinates into the device by hand. Check your device’s manual for instructions. This is good if you’re doing a few units. If you’re doing a large number of units, use the “Send to GPS” computer method.

## 7. Educate your Class on the Geocaching Basics

Familiarize your class with how the GPS devices work, how they are used, why they are used, etc. A few topics you may want to touch on:

- **General Geocaching Information** – For example, what is geocaching? What is a GPS? What is a cache? What are satellites?
- **Coordinates** – Using a world map, have students find coordinates (longitude vs. latitude) of different locations. For example, students place their fingers on 49° 52' N and 99° 59' W on a map, and then draw their fingers to meet on Brandon, Manitoba. Numbers on GPS are numbers on a map, not random!
- **Real life application** – What careers would use GPS (fishing, hunting, police, astronauts, pilots, search and rescue, boats, etc.)?
- **Signal** – What will stop the signal from reaching the GPS device (being indoors, wood, concrete, etc). The GPS must be outdoors to work.
- **How to use a GPS** – how to turn on machine, flip through the different pages of GPS (satellite, main menu, map, compass). Specific information about your GPS units will be in the GPS handbook that comes with the geocaching loaner kit.

## 8. Be Prepared Before your Class starts their Geocaching Adventure

- Before you head out, check with your principal about local and/or school division policies about off-site activities regarding permission slips.
- It is always a good idea for the teacher to practice finding the caches before taking the class out to ensure everything is set up correctly.
- Pair students up or have them geocache in small groups. If possible have a teacher or supervisor with each group. Every group of students will receive a GPS with the preloaded waypoints. Be sure to record the name and number of GPS unit given to students.
- Have the students complete the Geocacher Code before going outside (see page 29 for a sample Geocacher Code). Remind students to keep the locations of the geocaches secret and not disclose the locations to their classmates.
- Give your class a pencil and a piece of paper that has coordinates and a place for stickers that they find in the cache (see page 30 for a sample worksheet). They may also carry items such as small Ziploc® bags or notebooks depending on what has been put in each cache for the students to collect/sign/draw/solve. You may also want to give students a garbage bag before going outside [(see page 26 for information on Cache In Trash Out (CITO)].

- Stress the importance of putting the caches back where they are found and to not share the location with anyone else.
- Set a time for your students to check in throughout the activity, and a final meeting point for the conclusion.
- Set boundaries for the students travel, try and keep the distance close to the school and away from any roads.
- The first time you go geocaching, you may want your class to walk together and locate the first cache as a large group.
- Dress appropriately for the terrain and the weather conditions.
- Remember to bring along extra batteries for the GPS units.
- Send groups out to find different caches.
- If you are using a local approach to geocaching, the teacher/students can collect the caches at the end of the day. If you are using a global approach, the caches do not need to be collected, however they must be maintained.

## 9. Let's go Geocaching!!

Your students are now ready to go geocaching — be creative, have fun and get “in motion”! See page 23 for geocaching activity ideas, or be creative and invent your own activities.



# Curriculum Connections

Using GPS and geocaching in the core curriculum has become a powerful tool in enhancing student understanding of geography, scientific inquiry, math concepts, physical education, problem solving, and language arts.<sup>7</sup> Geocaching is a cross-curricular activity that educators, leaders and facilitators are incorporating into their programs with great success. Geocaching combines outdoor play with team-building, problem-solving and other valuable educational outcomes. There are a number of different areas in which geocaching can support you in delivering classroom curriculum:<sup>8</sup>

## Physical Education general learning outcomes:

- movement
- fitness
- safety
- personal social management

## Science and Technology general learning outcomes:

- nature, science, technology
- science, technology, society and the environment
- scientific and technological skills and attitudes

## Social Studies general learning outcomes:

- identify culture and community
- The Land: Places and People

## English Language Arts general learning outcomes:

- celebrate and build community
- explore thoughts, ideas, feelings, and experiences
- manage ideas and information

## Math

- use direct or indirect measurement to solve problems

## Additional curricular connections:

- geographic information systems (GIS) in the classroom
- Education for a Sustainable Development

<sup>7</sup> [www.lovinfifth.com/gps/GPS-activities.html](http://www.lovinfifth.com/gps/GPS-activities.html)

GPS and Geoaching – Authentically Engaging Students. GPS Lesson Plans

<sup>8</sup> [www.edu.gov.mb.ca/12/docs/support/future/index.html](http://www.edu.gov.mb.ca/12/docs/support/future/index.html)

## Ideas for Integrating Curriculum with Geocaching

**Science** – place the caches near different plant species, students have to identify the type of plant and species

**Physical Education** – place physical activity tasks in the caches for students to do when they find the cache

**Math** – place a math equation inside the cache for students to solve when they locate the cache

**Social Studies** – map, sketch or photograph where the cache is placed

**Language Arts** – unscramble words or identify types of poems that are located in each cache





# Geocaching Activity Ideas for Schools

There are many different types of lessons that can be created or adapted to geocache with students. While some of the lessons will require a fair amount of preparation, they are easy to reuse and can be easily adapted to include a number of curriculum areas.

- **Simple mapping.** Send students into the playground in pairs and have them map out the playground using waypoint functions. GPS receivers can then be downloaded onto a school computer using MapSource® CD-ROM/Easy GPS software and maps can be printed for each student. This is a good lesson to prove how finicky GPS receivers are as maps can vary greatly from group to group depending on what side of a play structure they stand on, or depending on whether they wait for satellites to “catch up” with their position.
- **Simple treasure hunts.** Teachers can set up their own mini Geocache Event for their students on school grounds with the waypoints already entered into each GPS unit. Pairs of students can be sent out to locate the caches, stickers can be placed inside the caches. Students can take a sticker from each cache they find to prove they located all the hidden caches. Word riddle anagrams or mysteries can also be placed in the caches. Geocaches should be set up ahead of time around the school yard.
- **Content specific caching hunts.** Each cache has an activity related to one or more subject areas. Once each cache is found, the possibilities are endless. Activities can range from simple to complex. For example, to prove that they visited a cache, students may have to solve a math equation, solve an anagram, do a physical activity (10 jumping jacks), or answer history questions.
- **Virtual caches.** Students are sent to a physical or natural landmark (tree, compost bin) and either need to identify, sketch, or photograph it.
- **Travel bug tracking.** Your class can purchase trackable tags (Geocaching.com) and attach them to a small item of interest, perhaps a school mascot or figurine. Trackable items can be “released” into an online geocache with a “mission”. Students can then observe geocachers across the globe help your travel bug along on its mission. For example, your class may be studying China. You may release a travel bug with the mission to visit Beijing or perhaps even China Towns in every major North American city. Ask cachers to document your travel bug’s journey with pictures and write-ups by including an information card with your travel bug. The website also provides statistics on miles travelled. You and your students can follow its adventures and study its travels.



- **Map your School/Community.** Have students sketch a map of the playground and find the waypoints of specific locations of the playground (ex: swings, slide, benches, flagpole using waypoint functions on their GPS).
- **Cross Canada Projects.** Students can design and place a small travel bug into a geocache where the mission of the travel bug is to travel across Canada. Geocachers will help move your travel bug across the country and document its travels online where students can follow its progress. Teachers create an online account at [www.geocaching.com](http://www.geocaching.com) and list their geocache for others to try and find. They could monitor the progress of their travel bug and see if it reaches its intended destination.
- **Great Amazing Geocache Race.** Organize a school/community/divisional geocache race where individual classrooms in the school are responsible for preparing and hiding a geocache. Download the coordinates of all the caches to each GPS unit and send out teams to locate them. Conclude the race with prizes and a barbeque.
- **Host a Divisional Geocaching Event.** Invite schools in your area to participate in a geocache event. Students are paired up and given a GPS unit that has all the waypoints for the hidden caches. Inside each cache the organizer places a sticker and marks the waypoint for each cache. Placing Multi Caches (caches placed in more than one location) also offer a greater challenge to students.
- **Monthly Theme Caches.** Hide different themed items in the cache according to the month. For example, in October use Halloween Stickers, in December use Christmas stickers/erasers, in February use Valentine’s Day heart stickers, in March use St. Patrick’s Day themed stickers, in April use big plastic Easter eggs for caches and put themed stickers inside, etc.
- **Special Event Themes.** Hide different items in the cache according to a certain theme. For example, for a pirate theme, treasure boxes can be used as the cache, and filled with doubloons (pirate money). Other themes could include monthly class birthdays, Canada Day, etc.

- **Design Club and Class Experiences.** When working with clubs or classes, consider small group activities. It's more fun if each child has a specific task or responsibility. For example, in groups of three you might have a photographer, a log book keeper, and a GPS user. Team members can trade responsibilities so they each have a chance to try all of the tasks. Think about setting a variety of caches that students could rotate through. You might have geocache stations throughout a nature park, historic site, or amusement park. Try a bike scavenger hunt. When working with large groups consider the cache contents. For example, if you have a dozen kids and they will be trading trinkets, they will each need something to trade. If using the global approach you may consider leaving a "group" object and select something to take as a group. Some classes include something they've made such as a class book.



# Geocaching and the Environment Go Hand in Hand

Geocachers are committed to keeping the environment clean as many of the caches are hidden in our parks and trail systems. In order to assist in the reduction of debris in our parks geocachers practice the Cache In Trash Out program (CITO). Groundspeak, the corporate owner of Geocaching.com promotes and sponsors cleanup geocaching events around the world.

Teachers can organize a Cache In Trash Out Event at their own school. By hiding geocaches around their school or community, participating students take along garbage bags and assist in garbage collection along the way to finding hidden caches. The end result is a clean community where students have participated in an active and meaningful way.<sup>9</sup>

Cache In Cache Out – Events can be held to coincide with:

Earth Day – April ([www.earthday.ca](http://www.earthday.ca))

Clean Air Day – June ([www.cleanairday.com](http://www.cleanairday.com))

Canadian Environment Week – June ([www.ec.gc.ca/eco/week\\_e.htm](http://www.ec.gc.ca/eco/week_e.htm))

Canadian Environment Geocaching contest in Canada’s National Parks, Historic Sites and National Wildlife Areas – June ([www.ec.gc.ca](http://www.ec.gc.ca))

International Walk to School Month (“IWALK”) – October ([www.greenactioncentre.ca](http://www.greenactioncentre.ca))

Active and Safe Routes to School – ([www.greenactioncentre.ca](http://www.greenactioncentre.ca))

<sup>9</sup> [www.geocaching.com](http://www.geocaching.com)

# Sample Environmental Geocaching Activities<sup>10</sup>

## Create Nature Connections

Go beyond the “treasure hunt” aspect of geocaching and consider nature connections. For example, your students might identify wildflowers, mushrooms, lichens, rocks, fossils, animal tracks, scat, or other signs of wildlife. Ask them to select a rock that they will later paint or photograph a scene for a writing assignment.

Get students involved with a large scale project. For example, while going to geocaches look for animal tracks. Use a geocache project as part of a nature cleanup.

## Create Historical and Cultural Connections

When people think about geocaching, they usually think about nature. However, teachers can design caches in historical or cultural areas. For example, there may be geocaches hidden at different sites around the province (ex: The Forks, Lower Fort Garry, etc.), where students can learn about the history. Consider creating a cultural cache filled with items reflecting the area such as native instruments that students could try. Some people are even incorporating audiotapes or small recorded chips into their cache so students can listen to stories or music related to the setting of the cache. Be creative!

If you establish a historical or cultural cache, be considerate of the people, the heritage, and the land.

<sup>10</sup> <http://eduscapes.com/geocaching/kids.htm>  
Geocaching with Kids — Annette Lamb and Larry Johnson

# Geocaching Websites

For more information and to find more ideas, visit the following websites:

**The Official Global GPS Cache Hunt Site**

[www.geocaching.com](http://www.geocaching.com)

**Geocaching in 2 Minutes Video**

[www.geocaching.com/videos](http://www.geocaching.com/videos)

**Guide to Geocaching**

[www.geocaching.com/resources/guide](http://www.geocaching.com/resources/guide)

**Geocaching and Education**

[www.geocaching.com/education](http://www.geocaching.com/education)

**Geocacher U**

[www.geocacher-u.com](http://www.geocacher-u.com)

**GPS Adventures Maze**

[www.gpsmaze.com](http://www.gpsmaze.com)

**Cache In Trash Out (CITO)**

[www.geocaching.com/CITO](http://www.geocaching.com/CITO)

**Manitoba Geocaching Association**

[www.mbgeocaching.ca](http://www.mbgeocaching.ca)

**Earth Caching**

[www.earthcache.org](http://www.earthcache.org)

**EasyGPS**

[www.easygps.com](http://www.easygps.com)

**Introduction and Set up of Garmin eTrex Units**

[www.pbs.org/wgbh/nova/longitude/gps/html](http://www.pbs.org/wgbh/nova/longitude/gps/html)

**Where to buy Travel Bugs**

[www.gpscocity.ca/item-geocaching-travel-bug-signal-pack/geobug.htm](http://www.gpscocity.ca/item-geocaching-travel-bug-signal-pack/geobug.htm)

**Geo Coins**

[www.geocoins.ca](http://www.geocoins.ca)

**Dr. Christie's GPS and Geocaching Guide for Educators**

[www.alicechristie.org/geocaching](http://www.alicechristie.org/geocaching)

# Geocacher Code<sup>11</sup>

Geocaching is a fun activity where I learn to respect my world as I search for secret treasure caches.

I promise to never reveal the caches that I discover to Muggles or to other members of the \_\_\_\_\_ School Geocaching Club as to not ruin the fun for others.

I also promise to participate in the Cache In, Trash Out Program, and to be respectful of natural, public and private property.

Signature \_\_\_\_\_

Date \_\_\_\_\_

The goal of life is living in agreement with nature.

-Zeno of Elead

<sup>11</sup> Sandra Welbergen, Beaumont School

## Geocaching Worksheet for the Classroom

Remember, geocaches are hidden in plain sight and never buried, but they are often cleverly camouflaged.

Once you have located a geocache, take a sticker from the geocache and attach it beside the corresponding waypoint below.

Please place the geocache back in the position it was found and do not share its location with anyone (keep it a secret).

Waypoint #1	Sticker
Waypoint #2	Sticker
Waypoint #3	Sticker
Waypoint #4	Sticker
Waypoint #5	Sticker





## Access to Geocaching Programs for Schools

We have local geocaching resources and sites right here in Manitoba. Schools can visit the following locations to geocache, and there are existing guides/geocaching programs available to support schools:

\*\* Please note, there may be costs associated with these programs. It is best to contact the location directly for details.

### **FortWhyte Alive**

Blazing your Trail — Grade 5 to Grade 12

[www.fortwhyte.org](http://www.fortwhyte.org)

### **Oak Hammock Marsh**

Interactive GPS/GIS Community Mapping

[www.oakhammockmarsh.ca](http://www.oakhammockmarsh.ca)

### **Geocaching in Manitoba Provincial Parks**

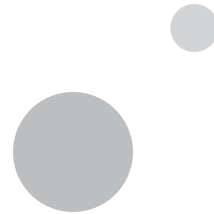
Geocaching Policies and Procedures in Provincial Parks

[www.gov.mb.ca/conservation/parks/recreation/ssf/geocach](http://www.gov.mb.ca/conservation/parks/recreation/ssf/geocach)

### **Parks Canada**

Policies and Procedures in National Parks

[www.pc.gc.ca/eng/docs/pc/guide/geocache/geocache1.aspx](http://www.pc.gc.ca/eng/docs/pc/guide/geocache/geocache1.aspx)



# Glossary of Terms<sup>12</sup>

**Cache** – A shortened version of the word geocache. (See Geocache).

**CITO** – Cache In Trash Out is an ongoing environmental initiative supported by the worldwide geocaching community. Since 2002, geocachers have been dedicated to cleaning up parks and other cache-friendly places around the world. Learn more at [www.geocaching.com/cito](http://www.geocaching.com/cito).

**Event Cache** – An Event Cache is a gathering of local geocachers or geocaching organizations to discuss geocaching. The Event Cache page specifies a time for the event and provides coordinates to its location. After the event, the cache is archived.

**Geocache** – A container hidden that includes, at minimum, a logbook for geocachers to sign.

**Geocaching** – Geocaching is a worldwide game of hiding and seeking treasure. A geocacher can place a geocache in the world, pinpoint its location using GPS technology and then share the geocache's existence and location online. Anyone with a GPS unit can then try to locate the geocache.

**Geocoin** – Geocoins work similarly to Groundspeak Travel Bugs® (see Travel Bugs) in that they are trackable and can travel the world, picking up stories from geocache to geocache. Geocoins are often created as signature items by geocachers and can also be used as collectibles.

**GPS** – GPS stands for Global Positioning System. It is a system of satellites that work with a GPS receiver to determine your location on the planet.

**Latitude** – Latitude and longitude create a waypoint. Latitude is the angular distance north or south from the earth's equator measured through 90 degrees. Think of latitude as rungs on a ladder.

**Longitude** – Latitude and longitude create a waypoint. Longitude is the angular distance measured on a great circle of reference from the intersection of the adopted zero meridian with this reference circle to the similar intersection of the meridian passing through the object. Think of the long lines running north and south.

**Mega-Event Cache** – A Mega-Event cache is an Event Cache that is attended by 500+ people. Mega-Events offer geocachers a day of planned activities. There are often several days of additional activities surrounding a Mega-Event. These large events attract geocachers from all over the world and are often held annually.

**Muggle** – A non-geocacher. Based on J.K. Rowling's Harry Potter book series, a "Muggle" is a non-magical person. Usually this term is used after a non-geocacher looks puzzled after befriending a geocacher searching for a cache, or when a non-geocacher accidentally finds a cache.

<sup>12</sup> [www.geocaching.com](http://www.geocaching.com)

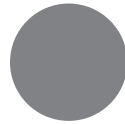
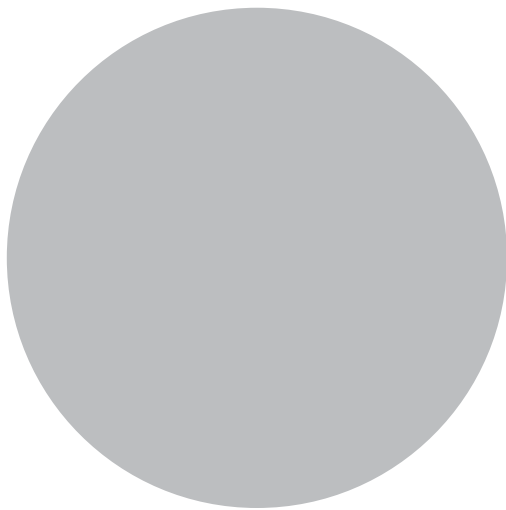
**Multi-Cache (offset Cache)** – A Multi-Cache (“multiple”) involves two or more locations. The final location is a physical container. There are many variations, but most Multi-Caches have a hint to find the second cache, and the second cache has a hint to the third, and so on. An offset cache (where you go to a location and get hints to the actual cache) is considered a Multi-Cache.

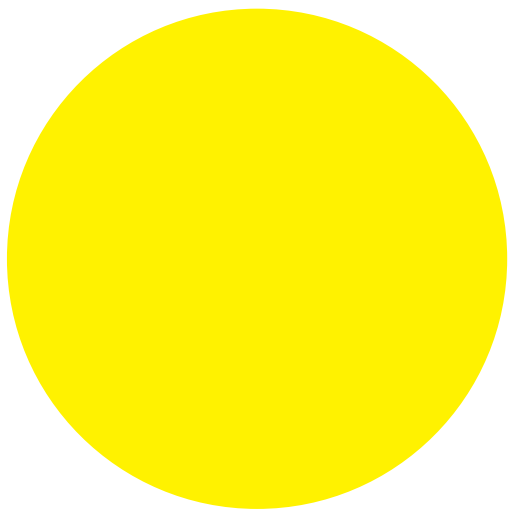
**Mystery or Puzzle Caches** – The “catch-all” of cache types, this form of geocache may involve complicated puzzles that you will first need to solve to determine the coordinates. Mystery/Puzzle Caches often become the staging ground for new and unique geocaches that do not fit in another category.

**Traditional Cache** – This is the original geocache type consisting of, at minimum, a container and a log book or logsheet. Larger containers generally include items for trade. “Nano” or “micro” caches are tiny containers that only hold a logsheet. The coordinates listed on the traditional cache page provide the geocache’s exact location.

**Travel Bug®** – A Groundspeak Travel Bug® is a trackable tag that you attach to an item. This allows you to track your item on Geocaching.com. The item becomes a hitchhiker that is carried from cache to cache (or person to person) in the real world and you can follow its progress online. Learn more at [www.geocaching.com/track](http://www.geocaching.com/track).

**Waypoint** – A waypoint is a reference point for a physical location on Earth. Waypoints are defined by a set of coordinates that typically include longitude, latitude and sometimes altitude. Every geocache listed on [www.geocaching.com](http://www.geocaching.com) is a waypoint. Geocaching.com generates a unique “GC Code” associated with every geocache listing.





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