MASTER
DISCOVER
EXPLORE

4-H Outdoor Living Series
Discovering Geocaching

Innovation & Technology

Geocaching

Activity Guide

CANADA

Saskatchewan
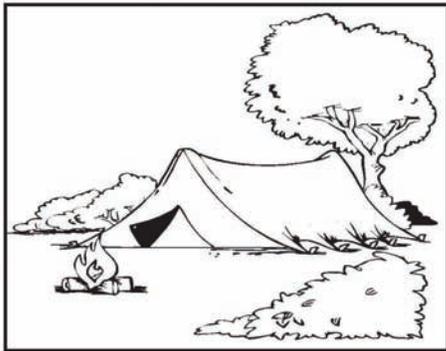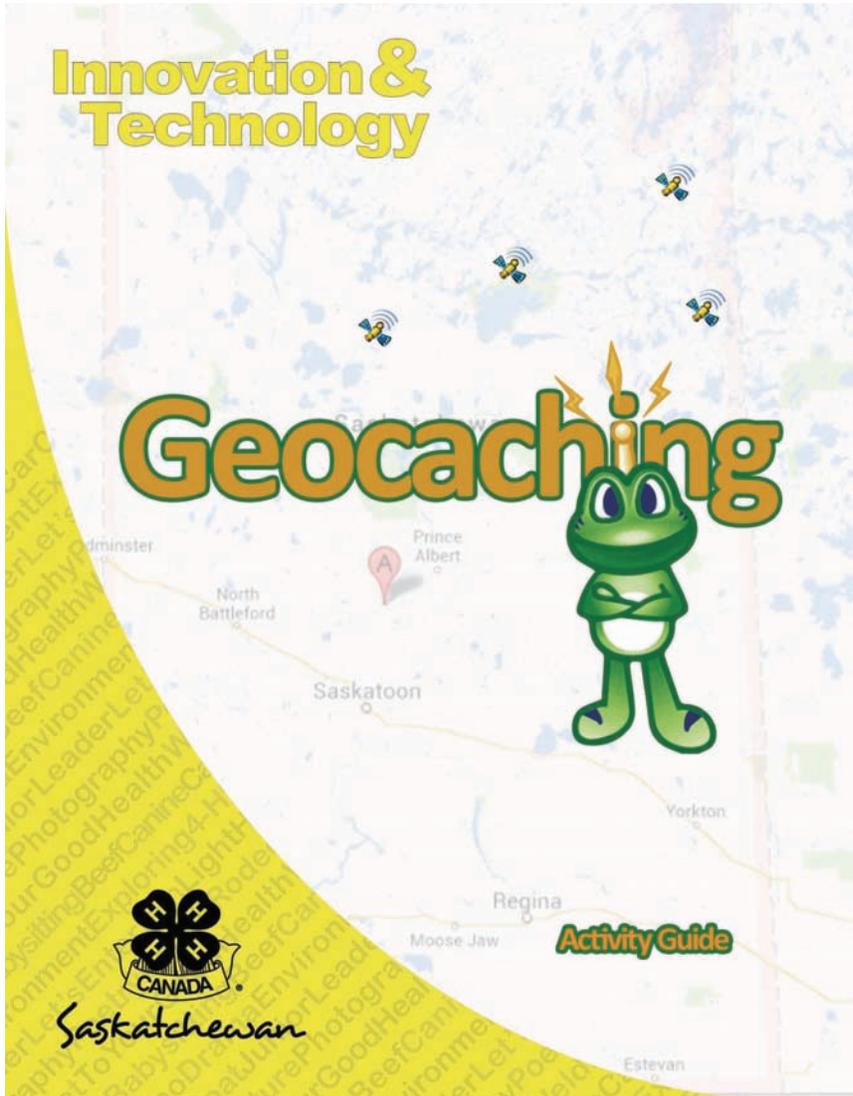
Learning is 3D!

To help you get the most out of your learning, each project meeting has the following parts:

Dream it! Plan for success
Do it! Hands on learning
Dig it! What did you learn?

Dig It

Dream It

CANADA

Do It

CANADA

Manitoba

What Skills Will You Learn?

To complete this project, members must:
- Spend a minimum of 15 - 20 hours completing the project work.
- Complete the listed activities, **OR** a similar activity that focuses on the same skills, as you and your members may plan other activities.
- Plan and complete the Showcase Challenge
- Complete the Portfolio Page.
- Participate in your club's Achievement (see the inside back cover for more information about 4-H Achievement).

This project is being offered in Manitoba, with permission from Saskatchewan 4-H Council.

Achievement (project completion) requirements for 4-H Manitoba apply to this project and are described above. The amount of time spent on project work may exceed the minimum 15 hours, depending on the project that you have chosen and the activities within the project.

This project was selected to be offered by 4-H Manitoba because it provides members with the opportunity to meet Manitoba 4-H project learning objectives. These objectives include technical skills, communication, meeting management, leadership skills, as well as community involvement and real world experiences.

Showcase Challenge and My Portfolio Page

At the end of the member's section are the **"Showcase Challenge"** and **"My Portfolio Page"**.

The **"Showcase Challenge"** page gets members to think about their accomplishments and
explain or demonstrate how they were successful. There is information to help them decide how they will best "Showcase" their learning to family and friends.

Record Keeping is an important part of every 4-H project. **"My Portfolio Page"** is used to keep track of members' 4-H experiences. As each member learns skills this is recorded on the portfolio page. When the Portfolio Page has been completed and confirmed by the leader, then it becomes a record of the member's completion of the project and participation in other 4-H activities beyond the project.

Leaders Information Page

4-H leader assessment of members will occur throughout the project as you observe the progress and learning of each member. Record what you see and hear. Your feedback should be positive and specific (not just "well done"). Share feedback with members often so they can act on your suggestions. How you choose to observe and record is up to you. Remember that members may improve throughout the project year and that records should be updated to reflect when they showed their best learning.

Projects promote technical, communication, meeting management, and leadership skills, as well as community involvement and real-world experiences. In addition to the specific skills members are to learn in each activity, these learning goals for members are important: Following instructions - Working with others - Using supplies safely - Using the key words - Improving with Practice - Respecting timelines.

4-H LEADER TIPS FOR SUCCESS!

- Page 2 in each guide summarizes what the member must do to complete the project.

- Depending on time available, groups size and member abilities, you may wish to break the activities in each section into more than one project meeting.

- The internet has lots of interesting websites and educational activities. We do not endorse any website or any products they may sell. Information/products will be used at your own discretion.

- Safety is a number one priority. Care has been taken to create safe, age appropriate activities throughout this manual. As leaders, it is important for you to emphasize safety rules and adapt activities to safely match your members' abilities. Ensure members have a good understanding of safe practices when using tools, that they use the right safety equipment when necessary, and that good supervision is provided. A quality experience needs to be a safe experience.

- The multiple intelligences theory teaches us that people learn in at least 8 different ways. All individuals will be stronger in some ways of "intelligences" and weaker in others. It follows that the more ways we teach, the more members we will reach. Throughout this project, you will find a mix of teaching and learning methods. Teaching projects using a broad blend will help increase the learning potential of all members.

- Projects are designed to teach many skills, but the 4-H member is always more important that the subject matter. Stress cooperation in the activities to develop teamwork and cooperation skills. These are valuable life skills. Ensure the work is completed in a manner that members feel good about themselves and their efforts. This can be done by assigning tasks based on member's individual abilities. Modelling and expecting supportive behaviour (i.e. no "put-downs") in the group also contributes to a positive experience.

4-H LEADER TIPS FOR SUCCESS!

- There will be opportunity for experimentation and applying skills that members have learned throughout this project. Experimenting can be frustrating, but learning through trial and error is an important life skill. Explain to members that is is alright to either go on to the next activity or do the activity again if they need the practice. Help the members work through their challenges until they are satisfied with the final results. Creating inventive 4-H members will be very rewarding.

- Celebrating success is an important but sometimes overlooked part of our lives. We encourage you to use the final section to empower the members by celebrating all they have learned in a fun manner. Anything that you do to add to the spirit of fun and the sense of accomplishment of each member will likely be remembered as the highlight of their 4-H year.

Have fun and thanks for your belief in young people!

Showcase Challenge

Have members use their Member Manual to help them in organizing what they have learned. The form of the showcase can vary according to the wishes of the members and leaders, and the member's ability. Information could be presented in many forms, some of which are: posters, pamphlets, written reports, speeches, computer presentations displays, etc. Suggestions are listed on the Showcase Challenge page at the back of the Member Manual. The best results are almost always obtained when members are allowed to present their information in the style of their choice.

Portfolio Page

Once members have completed all the activities they will have a lot of information recorded in their manuals. These are products of their learning. As a final exercise in the project, members and leaders will pull together all this learning in completing the Portfolio Page in the Member Manual. Members and leaders must indicate how they know the member was successful at a particular skill. Leaders will find evidence if they think about what they have observed members doing, what discussions they have had with members, and what the members have produced. If leaders think that members need to go back and improve on any skill, this chart helps them clarify what needs to be done.

Showcase Challenge
Bringing it all together!

Now that you have finished this project, it is time to think about how you will share your experiences and knowledge with others. You may put your new skills to work by helping at a community event or at your club Achievement or teaching others about your topic. The goal of the Showcase Challenge is to help highlight your new skills and help **you** understand how you can use them. It can be an opportunity to receive feedback from others on your project. So go back through your manual and find some highlights of your learning (what you are proud of) and think about how you will "showcase" it.

Dream It!
Here are some Showcase Challenge Suggestions:

- Demonstrate something you made or learned about

- Act out a play

- Teach a class

- Use your new skills to help with the Club Achievement plans

- Make a poster or display

- Make a video or slideshow

- Organize a special event

- Or come up with your own idea. It is up to you and your leader!

My Showcase Challenge Plan

My showcase idea: _____

_____

What materials and resources do I need? _____

_____

Who do I need to help me? _____

_____

When do I need to have things done by? _____

_____

Do It!

Insert or attach your finished product or a photo of you sharing your skills in your Showcase Challenge.

Dig It!

Now that you have showcased your project skills;

- How did your Showcase Challenge go?

- What would you do differently next time?

- How will you use your new skills in the future? *(in different situations?)*

My 4-H Portfolio Page   *Manitoba*

Name:_____ Date:_____ Year in 4-H:_____

Club:_____ Hours Spent on 4-H:_____ (Project and Other 4-H Activities)

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Project Name:_____	**Skills Chart**
To be completed by the leader and the member based on observations and conversations throughout the project. **This generic 4-H Portfolio Page is for use with all projects without a project specific 4-H Portfolio Page printed in the manual.**	

Meeting Date	Activities we did... During your project you did activities to help you learn new skills. Identify these activities below.	Skills I learned... Identify the skills learned in the activities completed in your project.

Additional Comments/Activities:

Leader Point of Praise!

I am most impressed by...

I acknowledge that the member has completed the 4-H project requirements.

Leader's Signature: _____

Above and Beyond!

In addition to project skills, 4-H also increases skills in meeting management, communications, leadership, community involvement through participation in club, area, or provincial 4-H events or activities. List below any activities you participated in this year in 4-H.

(Some examples include Executive Positions Held, Workshops, Communication, Community Service, Rally, Bonspiels, Conferences, Judging, Camps, Trips, Awards, Representation to Area or Provincial Councils, etc)

_____   _____

_____   _____

_____   _____

_____   _____

_____   _____

**Feel Free to add additional pages that include awards, certificates, new clippings, photos or other items that describe your 4-H involvement.

Member Point of Pride!

What I learned…

What I need to improve on…

What I want others to notice…

Member's Signature: _____

Point of Praise! Another's perspective on your achievements in 4-H.
(community professionals, MAFRI staff, 4-H club head leaders, 4-H Ambassadors, friends of 4-H)

I am most impressed by…

I believe that you have learned…

In the future I encourage you to…

Signature: _____

4-H Achievement

4-H Achievement is… a 4-H club celebration when members have completed their projects. Achievements are planned by the club to give recognition to members and leaders for their accomplishments in their 4-H projects and club activities.

A 4-H Achievement can take many different formats: from choosing a theme, to member project displays, to members using their new skills for the event (entertainment, food, decorating, photographer, etc.), to members presenting their project to the whole group, the options are endless and open to the creativity of the members and leaders in each club!

Clubs may also plan their Achievement to promote 4-H to the community or to recognize sponsors and others who have helped the club.

Members and leaders - be sure to check your project books for the project completion requirements, so you will be ready for your club's Achievement celebration!

**If you have any questions, comments or suggestions
for this or other 4-H projects contact:**

**Manitoba 4-H Projects
Manitoba Agriculture Food and Rural Development
1129 Queens Avenue
Brandon, MB R7A 1L9**

Email: 4h@gov.mb.ca

**Phone: 204-726-6613
Fax: 204-726-6260**

**For more information about 4-H and the many
4-H opportunities available please visit**

http://www.gov.mb.ca/agriculture/4-h/

What is 4-H?

4-H is an international youth organization involving more than 7 million members in 80 countries around the world.

In Canada, 4-H began in 1913 in Roland, Manitoba as a community-based organization dedicated to growth and development of rural youth. Today's 4-H program reaches both farm and non-farm youth across Canada. The motto of "Learn to Do by Doing" is embodied in the program, as 4-H focuses on skill development as well as personal development of life skills such as communications, leadership and citizenship.

4-H Motto

"Learn To Do by Doing"

4-H Pledge

I pledge,
My HEAD to clearer thinking,
My HEART to greater loyalty,
My HANDS to larger service,
My HEALTH to better living,
For my club, my community, and my country.

4-H Quality Equation Principles

Quality People
- Promote responsibility, respect, trust, honesty, fairness, sportsmanship, citizenship, teamwork and caring.

Quality Experiences
- Provide members with personal development and skill development experiences.

Quality Projects
- Promote and value quality effort.
- Promote high quality, safe food production within industry standards.

Manitoba 4-H project material is developed by

Manitoba Agriculture, Food and Rural Development (MAFRD)

Innovation & Technology

Geocaching

Prince Albert

North Battleford

Saskatoon

Yorkton

Regina

Moose Jaw

Estevan

CANADA

Saskatchewan

Activity Guide

4-H MOTTO

Learn to do by doing.

4-H PLEDGE

I pledge

My HEAD to clearer thinking,

My HEART to greater loyalty,

My HANDS to larger service,

My HEALTH to better living,

For my club, my community and my country.

4-H GRACE

(Tune of Auld Lang Syne)

We thank thee, Lord, for blessings great

On this, our own fair land.

Teach us to serve thee joyfully,

With head, heart, health and hand.

Table of Contents

Activity 1

Outdoor Safety

Time: 1.5 to 2.5 hours

What you will learn
- Ways to stay safe outdoors while geocaching.

What you need
- Your 4-H Geocaching Reference Book
- News articles 1, 2 and 3 (in Annex A)
- Plant or animal reference books (or pictures of hazardous plants and animals in your area). (These can be brought in by members if requested before the meeting, or the leader can bring them.)
- Blank plain paper
- Pens or markers
- Optional: Computers with Internet access
- Optional: Printer
- Optional: Guest presenter (someone who is knowledgeable about local plants, animals and insects)

Instructions
Part 1 (30-45 minutes)

1. Brainstorm with your project group the risks of going for long walks or hikes to unfamiliar or remote areas. Ask yourself: "What could possibly go wrong?"

2. With the group, review the tips in the *Outdoor Safety* section in your Reference Book (Introduction).

3. Split up into three small groups. Each small group should read, either all together or individually, one of the first three articles in Annex A (Article 1, 2 or 3).

4. In your small group, discuss what the geocachers in each article could have done differently to avoid having to be rescued from a bad situation.

5. Someone from your small group describes to everyone else what happened in your article, and present your suggestions for improved safety.

6. Start a list of items that would be helpful to have in a bag with you when you are geocaching.

Part 2 (45 minutes to 1.5 hours)

1. Brainstorm with your project group what kinds of hazardous plants, animals or insects you already know about that can be found in your area. Make a list during the brainstorming session. Your leader may have suggestions for some that might have been missed.

2. **Option**: If you have a guest presenter, he or she could talk to your group at this point.

3. From the list you created, pick one or two of the hazards (perhaps one plant and one animal or insect each) that no one else has picked. Get the pictures brought by your leader that match the hazards you picked. (**Option**: if you have computers with Internet access and printers, you can find photos online and print them).

4. Title a blank page with the name of your plant, animal or insect. Find information to complete the rest of the information page, using the section titles below. You can discuss with other members, leaders, or the presenter; or you could research online. Include a small picture or two on your information page (if you have enough room). See a sample information page at the end of these instructions.
   - Description
   - Found where
   - How it is harmful
   - How to avoid being hurt by it
   - What to do if you are hurt

5. When you are finished with your information pages, show your pictures to the group, and share with them the information you gathered.

6. The leader (or other volunteer) can collect the pictures and the completed information pages. Photocopy enough for each member (stapled together), and hand them out at the next meeting. Keep your reference booklets with your project materials.

7. Add to the list of items that you could carry with you, in case you need them. Every geocaching group should have at least one emergency kit with them. What else should you bring? Review kit (brought in by leader) and make note of any missing items. Before your first long geocache hunt, be sure to gather everything into a small backpack or other bag.

> **Note:** If you are short of time, you can finish the information sheet at home. Bring it back to the next meeting to share the information with your fellow project members and give your sheet to the leader to photocopy.

Porcupines

Description: Dark brown or black, covered with sharp quills, about 2 to 3 feet long.

Found where: In hollow trees in the forest, especially during the day, when they like to sleep.

How it is harmful: It can swing its tail toward you to embed several quills, which is very painful. The quills have barbs that make them even more painful to remove. Even after removing the quill, the area could get infected.

How to avoid being hurt by it: Use a flashlight to look carefully in hollow trees before putting in your hand to search or reach for a cache container.

What to do if you are hurt: The faster the quills can be removed, the less painful it will be. Trim the quills with scissors to about one inch long. Use a pair of flat-head pliers to grip and pull individual quills straight out (do not twist). Be sure that the whole quill is removed. Gently wash it with mild soap, and apply an antibiotic ointment. See a doctor or other medical professional as soon as possible.

Photo by Wikipedia user Mattnad. Used with permission. Accessed at en.wikipedia.org/wiki/File:Tree_Climbing_Porcupines.jpg#file

Group Hide and Seek a Cache

Time: 1 to 2 hours

What you will learn
- Ways to hide and how to search for different sized containers.

What you need
- A small to large plastic container from home (such as empty peanut butter or mayonnaise jars, sandwich containers, 35 mm film canisters)
- A piece of fine wire or string long enough go around your container and still have a good size length to loop over a tree branch or other object
- Flashlight

Instructions
1. Meet with your project group in a park or lightly wooded area.

2. Discuss what types of plants, animals or insects to watch out for. If you need to, look at any pictures in the booklet your group created to remind yourself what certain plants, animals or insects look like.

3. Show your container to everyone, and look at the containers they brought – you'll be looking for their containers, so pay attention to what they look like!

4. Take a walk with the whole group around the area. See if you can spot a few places that might be a good spot for the container you brought – but don't tell your group members which spot you're thinking of using! With the wire or string, you can also plan to hang or hook your container onto something.

5. While the rest of the group turns their backs, one or two members hide their container. Be patient – it will take them a while (and your turn is coming!).

6. When the hiders come back, everyone heads off to try to find a container. The hider goes with them and leads a game of hot/cold. When a seeker is heading in the right direction, the hider says, "(Seeker's name) is warm!" When a seeker is very close to container's hiding spot (a few steps away), the hider announces, "(Seeker's name) is getting hotter!" When the seekers move away from the hiding spot, the hider announces, "You're getting colder." When the container is found, another member gets a turn to hide a container.

7. Continue playing until everyone has had a turn to be a hider.

Discussion

Which containers were more difficult to find? Was it because of their size, the way they were hidden, their colour, or some other reason?

How easy was it for you to hide your container? Do you think you would use this type of container for a real geocache? Why or why not?

Which do you like better: hiding or seeking?

Online Safety and Creating
a Geocaching.com Account

Time: 1 to 2 hours

What you will learn
- How to stay safe while using the Internet
- How to set up a user account at geocaching.com

What you need
- 4-H Geocaching Reference Book
- Computer with Internet access

Instructions

1. You probably know a lot already about online safety. Brainstorm with your project group ways to protect yourself from risk when communicating online with strangers on websites like Tumblr, Facebook, Twitter, YouTube or online games.

2. Review the *Online Safety* section in your Reference Book (Introduction).

3. Geocaching.com is also public and open to the world. Discuss which guidelines you feel are most important to remember when you start using geocaching.com.

4. Review *Creating a geocaching account* section in your Reference Book (Unit 2).

5. Decide on your geoname choices.

6. Follow the directions in your Reference Book to create a geocaching account.

7. If you have time, explore geocaching.com.

8. **Optional**: Visit opencaching.com, terracaching and navicache.com, and compare to geocaching.com.

Group Geocache

Time: One to a few hours, depending on the cache locations, and how many caches the group decides to search for.

What you will learn
- How to load cache listings into your GPS device
- How to choose caches that will be enjoyable for you

What you need
- Volunteer drivers
- Your 4-H Geocaching Reference Book
- Your GPS device
- Your GPS device's cable for connecting to a computer
- Your GPS device's owner manual
- A computer with Internet access
- Possibly a flashlight (if geocaching in the evening)
- Trading items (optional)

Instructions
1. Review *How to choose your first geocache* section in your Reference Book (Unit 2).

2. Log on to your geocaching account.

3. Look on the map to find a suitable cache (or a few, depending on time and distance) nearby.

4. Follow the instructions in your Reference Book for loading the cache listing onto your GPS.

5. Review the sections from *The hunt begins!* to *What if I don't find the cache?* in your Reference Book (Unit 2).

6. Follow the instructions in your Reference Book for setting a "Goto" or "Find a Geocache".

7. Off you go! (But save the logging for your next project meeting.)

Discussion

What was the part you liked best about your geocache search? Was there anything you didn't like? Is there any way to make that part better?

The hunt begins! section of your Reference Book (Unit 2) mentions using a spiral search pattern if you don't quickly spot a cache. Can you think of any other good techniques for searching for a cache that isn't a quick find?

Logging a Geocache

Time: About 1 hour

What you will learn

- How to log a cache find (or did not find)

What you need

- Your 4-H Geocaching Refernce Book
- A computer (one per member, if possible) with Internet access
- The list of caches that you found at the last project meeting

Instructions

1. Log on to your geocaching.com account.

2. Read some of the logs written by past finders of the caches that you found.

3. Discuss with your project members:
   - Which logs did you enjoy reading the most? Why?
   - Did you notice any commonly used expressions or "geo-lingo"?

4. In your Reference Book (Unit 3), read the section called *Learning the lingo—special terms.* Make note of any terms that you might like to use in your own log entries.

5. Think about your experiences when you found the caches that you are now going to log.
   - Did you see anything special, funny or interesting on your way to or from the cache?
   - What did you like about the cache? Did anything about the cache container or set-up impress you?
   - Does the cache need attention of any kind? (e.g. Was it wet inside? Is the log book almost full?)
   - Did the cache inventory say that Travelbugs® or geocoins were in the cache, but you didn't see any?

   These are all good things to mention in a log.

6. Decide what you would like to say about each cache that you found. Try to say something positive about each cache, and try to be creative in some way (especially if the cache was a creative one).

7. Open your Reference Book to the section called *Logging your find online* (Unit 2). Follow the instructions to compose your own log entries.

Preparing for More Geocaching – the Geobag

Time: About 1 hour

What you will learn
- How to be organized and prepared for safe geocaching

What you need
- Your 4-H Geocaching Reference Book
- Notepaper
- Pens/pencils

Instructions
1. Read *The geobag* section in your Reference Book (Unit 4).

2. Look at the list of suggested items to include in your geobag. Discuss with your fellow members:
   - Which items do you think are important for you personally to have handy?
   - Are there any items missing from the list that you think should be included?

3. Create a list of items for you to gather for your geobag.

4. Before your next geocaching trip, put everything together in a bag or small backpack that you can grab on your way out the door.

More Geocaching!

Time: One to a few hours, depending on the cache locations, and how many caches the group decides to search for.

What you will learn
- Increased geocaching search skills

What you need
- Volunteer drivers
- Your GPS device
- Your GPS device's cable for connecting to a computer
- Your GPS device's owner manual
- A computer with Internet access
- Possibly a flashlight (if geocaching in the evening)
- Trading items (optional)

Instructions
1. Log on to your geocaching.com account.

2. Open the geocache map. Look for any traditional cache types in your area.

3. Pick out a few interesting ones and load them onto your GPS device.

4. Go find those caches!

5. Remember to log your finds online when you get home.

Discussion

Did any of the caches stand out for you?

Were any of them a tricky hide?

Did you learn anything new about hiding or searching for caches? About using your GPS device?

Understanding Coordinates (Latitude and Longitude)

Time: 1 to 2 hours

What you will learn

- How to find coordinates.
- How much the accuracy of GPS devices can vary, and how it affects a search for a geocache.

What you need

- Your 4-H Geocaching Reference Book
- Save the Geocaches! game board, pieces and instructions (next three pages)
- Something to use as game tokens (eg. coins, buttons, gumdrops) – you will need 10
- Scissors
- Two envelopes
- Your GPS device
- Measuring tape

Instructions

Part 1

1. In your Reference Book (Unit 1), read *Understanding latitude and longitude* and *How do satellites and imaginary lines help me find anything?* Now it's time to practice reading coordinates (latitude and longitude)…

2. Label one envelope "Latitude" and the other one "Longitude". Cut out the latitude and longitude pieces. Place the cards into the correct envelope.

3. Read the instructions for Save the Geocaches! game on the next page, and play with a partner.

Part 2

1. Now it's time to see just how well coordinates work in real life…

2. Turn on your GPS device. With your leader's help, everyone in the group should choose nearby coordinates. Enter them into your GPS as a waypoint, and set your GPS device to go to that waypoint.

3. Walk towards the waypoint. Stop when your GPS device says that there are 0 metres to the waypoint. (Note that after you stand still for a few minutes, your GPS device might say that you are now farther from the target waypoint – for this demonstration, stay where you were when it first showed 0 metres). When everyone has stopped, measure the distance between the two who are the farthest apart.

4. On page 9 in your Reference Book, find the box that shows the difference in search area size for 5 metre accuracy and 15 meter accuracy. Do your own demonstration: have one member stand in the middle of an open area. All other members should fan out from the member in the middle, using the distance that you just measured. Take note of how big the area of that circle is.

Discussion

Did everyone stop at points very close together? If not, what do you think the reason could be? (A lot of factors can affect accuracy: what kind of receiver your GPS device has, cloud cover, heavy tree cover, being in a deep valley, being surrounded by tall buildings, etc.)

Did you notice that your GPS device tells you what its estimated accuracy is? If your accuracy is 5 metres and your GPS device says that you are 0 metres from a cache, but you don't see it, what do you think you should do?

Imagine that a cache owner hides a cache when his or her accuracy is 5 metres, and while you are searching, your accuracy is also 5 metres. How many metres away would you start looking carefully for the cache?

Most of the time, you won't know what the cache owner's accuracy was when hiding the cache – what do you think is a safe assumption?

Save the Geocaches!

Your Mission

Uh-oh! It seems that there is a geo-thief on the loose – cache containers have been disappearing recently. A geocaching friend is out of town, and she has asked you to find and retrieve all the caches she's placed, to save them from the geo-thief. She has sent you all the waypoints that she saved on her GPS device when she placed the caches. BUT… she forgot to label her waypoints, so she can't remember which ones have caches at them! You need to get to those waypoints to find as many of those caches as possible – **before** the geo-thief gets there!

Instructions

1. Place one game token on each geocache on the game board. Look carefully. Some are well hidden. They look like this:

2. Players take turns drawing one Latitude and one Longitude card from each envelop. These are the coordinates you will use to search for a cache. Find where the latitude and longitude lines cross. For example, if you draw 15°S and 20°E cards, find where those two lines cross. If there is a geocache with a game token where the lines meet, hurray! You have found the cache before the geo-thief. Take the token to save the geocache. Return the cards to their envelopes. The next player follows the same steps.

3. Play continues until all the geocaches have been saved. The player who saves the most geocaches wins

The Lost Geocaches – Gameboard
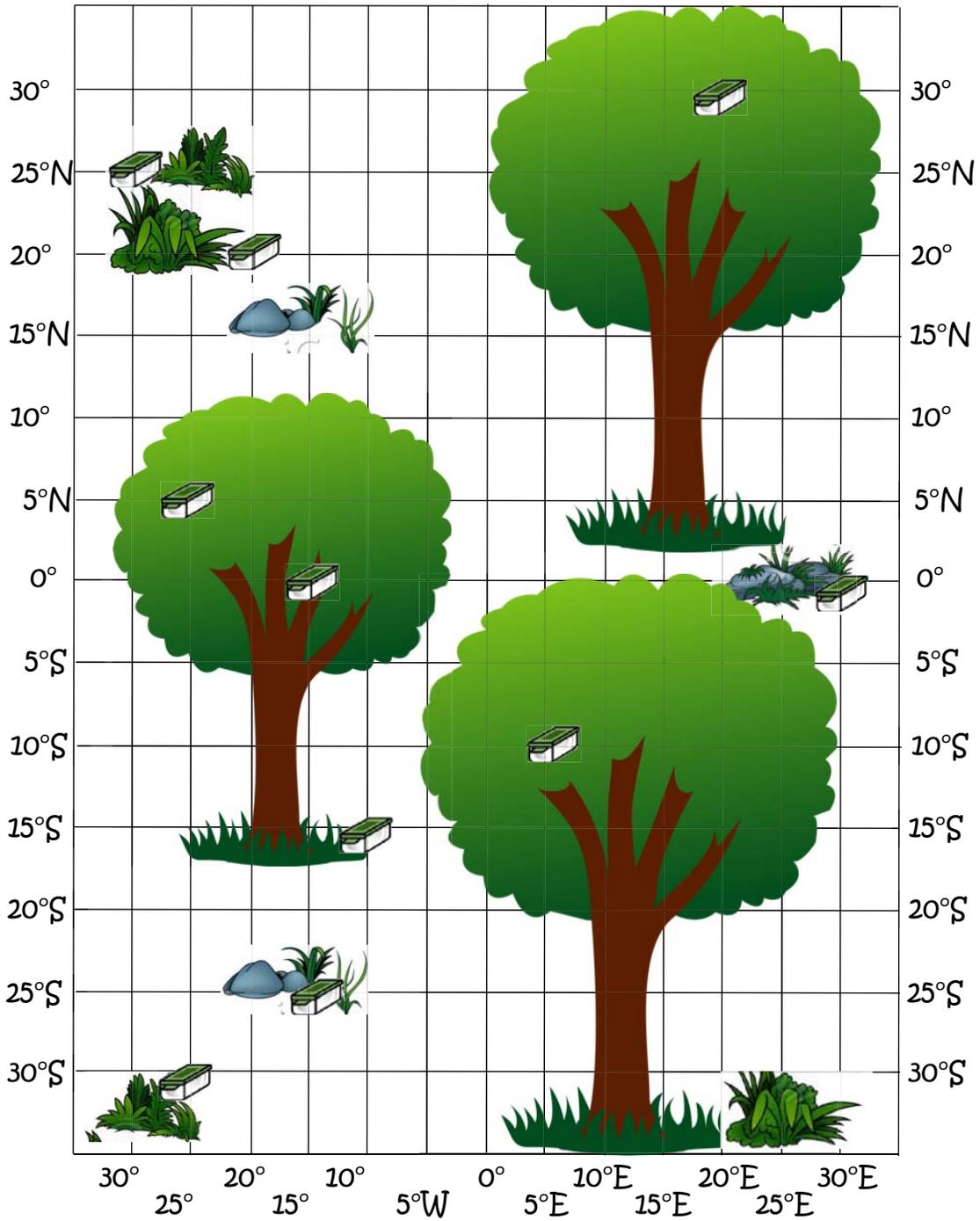
The Lost Geocaches – Coordinate Cards
Latitude

0°	5°N	10°N	15°N
20°N	25°N	30°N	5°S
10°S	15°S	20°S	25°S
30°S			

Longitude

0°	5°W	10°W	15°W
20°W	25°W	30°W	5°E
10°E	15°E	20°E	25°E
30°E			

Using a GPS – Waypoints, Projections and Routes

Time: 1 to 2 hours

What you will learn
- How to create waypoints, make projections and create routes.

What you need
- NOTE TO LEADER: Follow the instructions provided in the Leaders Guide document to create and place the eight containers needed for this activity (or follow the bad weather option).
- GPS device owner's manuals.

Instructions
1. Start your GPS device.

2. Look through your owner's manual to find the instructions for creating waypoints on your model of GPS device. Create a few waypoints, and look to see where they are on your map screen. (Tip: use coordinates that are near your current location.)

3. From one of your waypoints, project a new waypoint 50 metres away, at a bearing of 90°. Your owner's manual should have instructions. If not, explore the options available when you select one of your waypoints – one of the options should be "Project Waypoint". Try a few more if you feel you need practice.

4. Delete all of the practice waypoints that you just created, including all projections.

5. Your leader will tell you the coordinates for waypoint A, where you will start. Enter the coordinates, and name the waypoint A.

6. At waypoint A, you will find a container with instructions for a projection, which will give you the location of waypoint B (name the new waypoint B).

7. At waypoint B, you will find another container with instructions for another projection, to take you to waypoint C. Continue this process until you get to waypoint J.

8. *Important: Be sure to follow projection instructions perfectly. You must name the waypoints A to J in the correct order.

9. When you have finished the last waypoint, look in your owner's manual for instructions for creating routes. Create a route starting with A, then B, C, and so on, ending with J. Name your route 4-H.

10. Select your 4-H route to display. Zoom out enough so that you can see the entire route displayed on your GPS device screen. What do you see?

More Geocaching!

Time: One to a few hours, depending on the cache locations, and how many caches the group decides to search for.

What you will learn
- How to find different types of geocaches

What you need
- Volunteer drivers
- Your GPS device
- Your GPS device's cable for connecting to a computer
- Your GPS device's owner manual
- A computer with Internet access
- Possibly a flashlight (if geocaching in the evening)
- Trading items (optional)

Instructions
1. Log on to your geocaching.com account.

2. Open the geocache map. Look for any non-traditional cache types in your area: multi-caches, Earthcaches, webcam, virtual, etc.

3. Pick out a few interesting ones and load them onto your GPS device.
   - If there are any mystery/unknown caches that catch your eye, add them to the list if they look like you can solve them on the go. If they need extra solving time ahead, you can save them for another caching day, once you've had a chance to solve them at home.

4. Go find those caches!

5. Remember to log your finds online when you get home.

Discussion

How do you like the cache types that you tried?

Other than traditionals, are there any cache types that seem to be really popular in your area?

Activity 11

Explaining Geocaching to Muggles

Time: 1 to 2 hours

What you will learn
- How to be a good ambassador for geocaching

What you need
- Plain white paper
- Markers/crayons/waterpaints
- Pencils
- Scissors
- Optional: Computer with a document program, such as Word, Publisher, etc.

Instructions

Muggles sometimes bump into you just as you are taking out a cache container from its hiding place, or while you are in an odd position or place. They may be curious or suspicious and ask you what you are doing. Geocaching can be difficult to explain, so many geocachers carry muggle cards. You are going to create your own muggle card, and plan ways to talk with different types of muggles.

1. Look at the example muggle cards in Annex B. You can also do an Internet search for "geocaching muggle cards", which will turn up many more options.

2. Think about and discuss:
   - Which one(s) do you like best?
   - How big do you want to make yours? (Most muggle cards are business card size, but some are pamphlets.)
   - What do you want to say in your muggle card?

3. Use the art supplies and paper to create your own version of a muggle card or pamphlet.

4. With a partner, demonstrate to the rest of the group how you would use your muggle card in one of the following scenarios.
   - A dad with his two young children see you searching beside a trail. He asks if they can help you find whatever it is you are looking for.
   - An older woman walking her dog sees you replacing a cache container in a tree trunk. She accuses you of doing something illegal and says she's going to call the police.
   - A group of kids your age see you using your GPS device and they ask you what it is and what you are doing.

More Geocaching!

Time: One to a few hours, depending on the cache locations, and how many caches the group decides to search for.

What you will learn
- How to find different types of geocaches

What you need
- Volunteer drivers
- Your GPS device
- Your GPS device's cable for connecting to a computer
- Your GPS device's owner manual
- A computer with Internet access
- Possibly a flashlight (if geocaching in the evening)
- Trading items (optional)

Instructions
1. Log on to your geocaching.com account.

2. Open the geocache map. Look for any non-traditional cache types in your area: multi-caches, Earthcaches, webcam, virtual, etc.

3. Pick out a few interesting ones and load them onto your GPS device.
    - If there are any mystery/unknown caches that catch your eye, add them to the list if they look like you can solve them on the go. If they need extra solving time ahead, you can save them for another caching day, once you've had a chance to solve them at home.

4. Go find those caches!

5. Remember to log your finds online when you get home.

> **Discussion**
> Are you getting faster at spotting possible hiding spots by now?

Activity 13

Finding a Cache Hiding Spot

Time: 1 to 2 hours

What you will learn
- How to choose a geocache hiding spot

What you need
- Volunteer drivers
- Your 4-H Geocaching Reference Book
- Your GPS device
- A camera

Instructions
1. Read *Choosing a location section* in your Reference Book (Unit 6).

2. Find an area large enough for several geocaches to be hidden. Remember, they must be at least 161 metres from any other caches (or parts of mystery or multi-caches). You can also split up into groups of two or three if a large area is not available.

3. Go for a walk, looking for suitable hiding spots. If there are any mystery/unknown caches within a kilometre, you may want to choose a few options, in case your first choice ends up being too close the final coordinates for the mystery/unknown cache.

4. Mark the location(s) (create waypoint) on your GPS device. If you give them descriptive titles (stump, tree trunk, rocks), it will be easier to remember later which waypoint is which.

5. Note what size cache container will fit into the spot you have chosen.

6. Take photos of the spots, so that you can refer back if you need to, without having to go back to the spot.

Making a Geocache

Time: 1 hour

What you will learn
- How to create a basic cache container
- What to include in a cache container

What you need
- A plastic container to fit the spot you chose
- A pen or pencil that fits in the container (optional: pencil sharpener)
- Camouflage pattern duct tape or olive or brown spray paint (matte finish)
- Plain paper and stapler, or a small notebook
- A print-out of a cache note (can be found on this web page: www.geocaching.com/seek/)
- A small Ziploc-style plastic bag
- Geocache stickers (or a black permanent marker)
- Swag (trade items)

Instructions
1. Read *Making a cache container* section in your Reference Book (Unit 6).

2. If you are not using a notebook, make a log book that fits in your container by cutting up the plain paper and stapling it together into a small booklet.

3. When you know what the name and GC number of your cache will be, write it at the top of the logbook's first page.

4. Tape or spray paint your container. Add a geocache sticker to the top or side of the container. If you don't have stickers, use the marker to write "Geocache" on the container. You can also write the cache name and/or GC number inside the lid, or on the side of the container.

5. Place the logbook into the plastic bag, with the pen/pencil (and sharpener, if you have one).

6. Add the swag.

7. There you have it – one geocache!

Publishing a Geocache

Time: About 1 hour

What you will learn
- How to create and publish a cache listing

What you need
- Your 4-H Geocaching Reference Book
- A computer with Internet access

Instructions
1. Review the sections *Publishing geocaches* and *Reviewers* in your Reference Book (Unit 6).

2. Prepare the information for your cache listing: cache title, short description and long description, and a hint.

3. Follow the directions in your Reference Book to create your cache listing. Remember to give any helpful information to the reviewer in a note to them on your cache listing page. For example, many cachers wait until they hear from the reviewer that their cache location is fine, before they go to physically place the cache. If you plan to do this, let your reviewer know so they don't publish it before you have the cache in place. Any notes to the reviewer will be deleted when it's published.

4. When you hear back from your reviewer that the location is approved, make arrangements to place your cache as soon as possible.

Cache In Trash Out

Time: Several hours (planning plus event time)

What you will learn
- Ways to help protect or restore the environment in your area

What you need
- Your 4-H Geocaching Reference Book
- A computer with Internet access

Instructions
1. Brainstorm what evidence you have seen of environmental damage in your area.
   - Is there an area that has a lot of trash?
   - Is there an area that needs new trees planted?
   - Do any endangered species need habitats to be restored?
   - Has a non-native invasive plant species taken over an area?

2. Discuss what your group would like to focus on, whether trash clean-up or tree-planting, for example.

3. Read Unit 5 in your Reference Book.

4. Plan to attend a Cache In Trash Out (CITO) event, if one is being held nearby. Or…

5. Plan your own CITO event (an unofficial one for your group or an officially published CITO that is open to other geocachers).
   - Choose a location.
   - Choose a date and time.
   - Decide if you will place caches in the area for participating geocachers to find while they work.
   - Using a paper map of your chosen area, split it up into zones for teams of geocachers, so that the whole area gets covered equally.
   - If you are doing a trash clean-up event
     - consider providing latex gloves (or suggest that participants bring their own).
     - plan to provide CITO participants with separate garbage bags for recyclable pop cans and bottles (or ask each participant to bring a few bags).
     - find out from your municipality where to dispose of items like old tires, chemicals or appliances. Arrange for volunteers to each take care of certain items.
   - Visit www.geocaching.com/cito/ for tips and to download a CITO logo for your cache listing.

6. Options to consider:
   - Invite other clubs or community organizations to join.
   - Partner with a conservation group in the area to help restore habitats for endangered species.
   - Partner with a trail or other outdoor enthusiast group.
   - Ask geocaching suppliers, local businesses, etc. if they would consider donating items to use as door prizes.

Discussion

Did you accomplish what you set out to do? What helped or interfered with achieving your goals?

What worked well at your event? What could be improved for future events?

Were you surprised by anything, such as the amount of trash collected, or what types of activities help to restore habitats?

Rainy/stormy/etc. Day Activity 1 – Notable Geocaches

Time: 1 hour

What you will learn

- Some of the special and creative geocaches exist in Canada

What you need

- A computer with Internet access (preferable one for every one or two group members)

Instructions

1. Log on to your geocaching.com account.

2. Search You can start with one or more of these:
   - Sand Castles (GC1566)
   - Prairie Plotters' Megacache (GC2641)
   - Great White North Geotour – Regina (GCXY08) (part of the GREAT WHITE NORTH GEOTOUR series)
   - Tree Within the Old City (GCHKWJ)
   - Geocache--Canada's 1st geocache (GCBBA)
   - International Space Station (GC1BE91)

3. On the right side of the cache page is a box titled **Bookmark Lists**. Click on **View all Bookmark Lists**. The link will take you to lists created by other geocachers to note caches that they find interesting. Explore some of the links; see if any of them are near you!

Discussion

Which caches do you think are most interesting?

Did you find any nearby enough for you to get to them sometime soon?

Did any of them give you ideas for a creative cache of your own?

Rainy/stormy/etc. Day Activity 2 – Mystery/Unknown Caches

Time: 1 to 2 hours, or as long as members are interested

What you will learn
- What types of puzzles cache owners use for mystery/unknown caches

What you need
- Computer with Internet access (at least one for every two members)

Instructions
1. Look at the following cache pages:
   - Know Your Body (GC12TYJ)
   - Spot the Difference (GC3208H)
   - R 910.124 LOGBO   (GC168QN)
   - The Saskatchewan Places Quiz (GC2YJ22)

   These are a few examples of types of puzzles sometimes used in a cache. You must solve a part or all of the puzzle to be able to find the coordinates. Often, the solutions just need a bit of research to find information about a topic. Then the puzzle requires you to somehow turn a word or words into numbers.

2. Search the map to find the mystery/unknown caches nearest you. Work with your project members to see if you can figure out any solutions.

3. Once you have a puzzle solved, save the solution somewhere safe or mark it as a waypoint on your GPS device.

Rainy/stormy/etc. Day Activity 3 – Paper Geocaching

Time: 1-2 hours

What you will learn
- Possible hiding places for geocaches.
- What types of containers work best for different types of hiding spots.
- A way to help explain to other people what geocaching is.

What you need
- Your 4-H Geocaching Reference Book
- Plain white paper
- Markers/crayons/waterpaints
- Pencils
- Scissors

Instructions
1. Read *Geocache sizes* in your Reference Book (Unit 4). Look at the examples of cache containers and think how you would hide each one of them in a forest.

2. Draw and colour a forest scene on one sheet of paper. Cut flaps in the paper where a geocache could be hidden. Line up a second sheet of paper behind, tape or glue it in place. Draw a geocache container that you might find in a location like the ones you chose.

3. Keep your drawing to use at Achievement Day or other opportunities to explain geocaching to muggles.

Annex A **Geocaching in the News**

Geocaching Family Rescued From Cave

Geocaching News, Geocaching.com
August 16, 2012
by kjwx

Three inexperienced American geocachers unexpectedly found themselves on the ropes when they needed rescuing from GZ on Tuesday.

Two dozen Rochester, New York firefighters had to winch the family members to safety using ropes and pulleys after they became trapped in a cave 23 metres above the Genesee River.

Media outlet 13 Wham reported that the 24-year-old woman, her 53-year-old father and 46-year-old mother had been searching for GC674E The Orc's Treasure when rapidly rising floodwaters blocked their exit. Apparently they had not heard a burst of heavy rainfall from inside the terrain level 4.5 cave.

Firefighters winch the three geocachers to safety. Photo: 13 Wham

While the trio was being lifted 15m to safety by emergency crews, local player ChrisX24 posted a note on the cache page after seeing a news bulletin about "people being trapped in a cave near Seth Green Drive". "Gosh, I hope this is not a group of geocache seekers inside this lair."

One of victims (GC handle: alyssa40air) later confirmed the family's plight in a DNF log, saying: "Yes, we were indeed looking for the geocache before a storm hit and water rushed up to our waists. All three of us

GZ: The cave above Rochester's Genesee River.

made it out safely with the assistance of many first responders. For future cachers, if it's raining… get out quick!

Lieutenant Ted Kuppinger, of Rochester Fire Department, said GZ was typically "a fairly dry area" so the circumstances of the rescue were unusual.

As a former geocacher, he commiserated with the stranded family. "It's difficult because you're invested in it; you want to find something like that so people will probably push themselves more than they should, but you need to be prudent about what you're capable of doing.

"Look at what you're doing, look at your situation, take in your surroundings and look at the bigger picture. Don't get mono-focused on what you're trying to accomplish … Say is this safe or should I come back another day?"

Cache owner Hinge Thunder & Rippie has since amended his listing for the 2002 hide with a bold weather warning. Two hundred and 17 players have successfully logged GC664E over the last 10 years, earning it 52 Favourite points.

Alyssa40air joined GC.com just five days ago and has yet to log any finds.

The following article was accessed on July 17, 2013 at:

www.notaboutthenumbers.com/2012/07/17/missing-geocachers-found-alive-in-fayette-county/

Missing Geocachers Found Alive in Fayette County

Geocaching News, United States
July 17, 2012
by kjwx

They may be safe now but two American geocachers – one of whom starred in the hit 2005 film Walk The Line – rescued from a West Tennessee wildlife reserve have endangered the hides in that area.

Authorities say they are considering removing all geocaches from the Fayette County wildlife management area near LaGrange to prevent similar incidents happening in future. According to local TV channel WREG Memphis, the pair were found about 8am on Monday by a search and rescue crew.

Cody Hanford, 17, and 29-year-old Justin Willingham were last seen at a wedding in Grand Junction on Saturday night before leaving the venue to go geocaching by the Wolf River in LaGrange.

Willingham, a radio host for WKNO, and Hanford, a child star who played a young Johnny Cash in the award-winning film Walk The Line, were using an iPhone to navigate to GZ. "It dropped in the water and we had no way back," the actor said.

His mother, Amy Hanford, called the Fayette County Sheriff's Office after she didn't hear from her son on Sunday morning, "I couldn't get a hold of him and I couldn't get a hold of Justin."

Dozens of family and friends gathered along Main St in LaGrange while search crews waited until daylight to look for the ill-prepared pair.

A Tennessee Highway Patrol helicopter flew from nearby Nashville to search from above but it was a land-based team—including a Fayette County Deputy, and a dog from Search Dogs South—who located the men's scent.

"We got to a point where we decided it was time to start hollering for them and they answered," said Paulette Weible, of Search Dogs South.

After being brought out of the woods around 9.30am on Monday, the duo were taken to a local hospital to be treated for dehydration.

Inspector Ray Garcia, of Fayette County Sheriff's Department, said people got lost in these woods about two or three times a year, "We have experienced hunters who come out here in the woods, they've lived out here their entire life and they get turned around and get lost for hours at a time themselves."

However, his department is now keen to remove all geocaches placed along the Wolf River because of the dangerous terrain. "You've got poisonous snakes that are out there and the fact that their phones wouldn't pick up in certain areas. You can't get a GPS signal and the tree coverage is so thick out helicopters were having trouble spotting them."

> *Note:* Fayette County Sheriff's Department later decided not to remove the geocaches. You can read the full story at this link: www.notaboutthenumbers.com/2012/07/22/geocachings-biggest-enemy-surrenders/

The following article was accessed on July 17, 2013 at:

www.notaboutthenumbers.com/2013/06/04/firefighters-rescue-geocacher-from-tree/

Firefighters Rescue Geocacher From Tree

Britain, Geocaching News
June 4, 2013
by kjwx

Normally, British firefighters have to rescue cats stuck up trees; but this weekend the victim was a female geocacher.

Emergency crews in Dorset were called to a tree in Upper Parkstone Heights, Poole at noon on Saturday to free the 20-year-old.

Marmotz, who took up geocaching on January 1st, had been targetting GC4BKJE Pendulum, a D2.5/T5 micro placed by The Ambles. It is one of a series of T5 tree-climbing hides in the area; many of which require specialist climbing equipment.

Rescuers told a reporter at the Bournemouth Echo that it took almost an hour to lower the young woman to the ground. Crews from Westbourne and Poole, including the technical rescue unit, used a 13.5-metre ladder to get her down. She was unharmed but shaken by the ordeal.

In a tweet, Dorset Fire Control subsequently advised its followers: "Lady rescued from tree in Poole attempting to reach geocache capsule – ensure you assess the risks before climbing!"

Going up: Marmotz had no trouble climbing the T5 tree but became stuck after dropping her pen.

Logging her find online, Marmotz later reported: "WHAT AN IMMENSE CLIMB! No troubles on the ascent after rigging the rope up and over. Got to the log and my pen had fallen down to the ground. As I started to descend, I got stuck and, long story short, the fire brigade were called to rescue me. TFTC, will never EVER forget this one."

On the plus side, she – and her partner, who shares the same caching name – did claim the 2TF on the hide, which had been published nearly four weeks earlier.

The following article was accessed on July 17, 2013 at:

www.notaboutthenumbers.com/2012/05/01/latest-geo-bomb-scare-avoidable-says-official/

Latest Geo-Bomb Scare Avoidable, Says Official

Bomb Scares, Geocaching News, United States
May 1, 2012
by kjwx

Yesterday's geo-bomb scare in Texas could have been avoided if the player involved had just explained their actions, an official says.

According to TV channel NBC 5, the Dallas Fire Rescue department responded to a report of a suspicious device in the city's far north on Sunday morning, but the mystery object turned out to be geocaching related.

DFR said it was alerted by a parking building security guard who saw someone tying a cannister to a tree near an office building at about 9am. When the guard approached, the person fled in their car.

The guard then called 911. Bomb squad members later identified the device as a geocache.

Department spokesman Jason Evans said the incident might have been avoidable, if the person who placed the package had stuck around to explain the game.

"While we don't want to discourage anyone from participating in what they feel to be a fun activity, we would encourage them to abide by all the rules so as to not create a panic as in this case. Simply staying around and explaining the game to the security guard could have possibly resolved the entire situation."

Evans was unsure if the player would face any sort of penalty for the scare, as "the game is legal". However, he did point out that the cache owner had not sort permission to hide their cannister in the parking lot near Prestonwood Boulevard and Belt Line Rd.

Bomb squad says suspicious package on 119th Street was geocache device

EDMONTON JOURNAL

May 3, 2013

EDMONTON – It was a black pipe, some wiring and a smaller object wrapped tightly in duct tape.

Police were deployed to southwest Edmonton Friday morning after a city worker discovered a suspicious package on 119th Street and called 911.

But after an explosives robot was deployed to inspect the device, police discovered the object was a geocache device.

Geocaching involves people using their GPS units to find hidden treasures, most often placed in waterproof receptacles. The incident was wrapped up by early afternoon.

Though the bomb squad has seen this kind of thing before, geocaching hasn't been a major problem in Edmonton, said Sgt. Grant Jongejan, a co-ordinator with the bomb squad.

"There's no major trend there," Jongejan said. "It was pretty paint by numbers. The person that came across the object did all the right things. People aren't calling us for nothing, they're calling us because there's something to it."

The EPS bomb squad typically responds to 125 calls per year, but Jongejan expects that number to increase this year. Part of that might be the result increased awareness following last month's bombing at the Boston Marathon, which has caused people to watch more carefully. Police encourage people to report suspicious packages.

"People are paying more attention, as they should," Jongejan said.

The following article was accessed on July 17, 2013 at:

www.cbc.ca/news/canada/ottawa/story/2008/07/28/ot-bomb-080728.html

GPS game blamed for Ottawa bomb scare

Last Updated: Monday, July 28, 2008 | 6:10 PM ET CBC News

A treasure-hunting game is being blamed for a bomb scare that resulted in the four-hour closure of a major Ottawa road and an operation involving two dozen police officers, a hazmat [hazardous materials] team and the police explosives unit last week.

The scare was prompted by the discovery of a suspicious package under the Transitway bridge at Hurdman station last Wednesday that turned out to be part of a geocache. Geocaching is a game that involves searching for hidden packages using GPS co-ordinates.

Insp. Tyrus Cameron said the incident shut down Riverside Drive for four hours and police eventually blew up the package. Cameron said a report of a suspicious package requires action that uses up significant police resources.

"We put a perimeter, set that up, evacuate any people around in the area," he said. "We have to send our robot to go over to the package itself, x-ray the unit to see what we have — again, we don't want to put our members in danger, either."

Such resources shouldn't be wasted on a game, he said.

Better communication with police needed: Cameron
Police are urging geocachers who hide packages to tell police exactly where they are and make sure the caches don't look suspicious.

"They need to communicate far better with the police," Cameron said. "We have people putting things into pipes with wires out of it. They're trying to make these things look funny or amusing. They're not."

Darin Cowan, an Ottawa geocacher, agreed that caches should be in transparent packaging that is clearly labelled.

He said he has received a couple of phone calls from police who thought a reported suspicious package might be his.

Cowan estimates that there are 3,000 to 4,000 geocaches in the Ottawa area.

Annex B Sample Muggle Cards

From worldcaching.com

From GeoWyrm's Caching Supplies

From Space Coast Geocaching Store

From Tigersden's Geocaching Goodies

You can find many more by doing an Internet search for "geocaching muggle cards".

4-H Canada Saskatchewan logo

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