

## LESSON 5: SEEKING GEOCACHES

### Grade-Level Outcomes

#### Primary Outcome

**Outdoor pursuits:** Demonstrates correct technique for a variety of skills in 1 self-selected outdoor activity. (S1.M22.7)

#### Embedded Outcome

**Personal responsibility:** Exhibits responsible social behaviors by cooperating with classmates, demonstrating inclusive behaviors and supporting classmates. (S4.M1.7)

### Equipment and Materials

- GPS trackers or devices with apps
- Artist handouts
- Pencil

### Lesson Objectives

The learner will demonstrate the following parameters for pursuing and finding a cache using a GPS unit:

- draw his or her own initials by setting out waypoints or GPS location points.
- show command of geocaching and using a handheld GPS.

### Introduction

*In our previous class, we started to use the GPS devices and learned about geocaching. Your homework activity was to find an app. Who found it and will share it? Today, we will build on what we learned, with the chance to be creative and seek geocaches.*

## Instructional Task: GPS Artist

### ■ PRACTICE TASK

Students start by drawing a sketch of their initials and writing down directions for following the initials as if they were a course. The letter E, for example, has one line north to south and three lines east to west. Students plotting the letter E would enter those directions into the GPS units to plot out the turns in the letters in their initials. Students then log the waypoints of the letters in their initials on the GPS artist worksheet. Students whose initials create diagonal lines (e.g., X, Z) use ordinal or intermediate directions (e.g., northwest, northeast, southeast, southwest) to describe the locations of different points along their initials.

#### Extension

Students may choose to spell something other than their initials or may look up GPS art.

#### Guiding questions for students:

- Were your initials easy to read in the GPS device?
- What problems did you come across?
- How would you do this differently if you had the chance to do it again?
- What else could you draw?

#### Student Choices/Differentiation

Students may work in pairs to make the task easier or draw out something else that interests them.

#### What to Look For

- Students have enough GPS skills to be effective.

- Have students chosen something too difficult to map?
- Students are staying on task.
- Students have mastered the concept of direction by being able to label their papers with north, south, east, and west.

## Instructional Task: Geocache Around the School Campus

### ■ PRACTICE TASK

Set out caches around the school campus, with each cache containing stamps for student teams to collect. Load the waypoints for finding the caches into the GPS devices, or give teams the waypoints to load themselves.

Groups find as many caches as they can, using the stamps from the caches as proof.

### Extension

Hold a group discussion on responsible social behaviors.

**EMBEDDED OUTCOME: S4.M1.7.** Teach each group of students how to exhibit responsible social behaviors by sharing its GPS device with all group members, being supportive of group members' suggestions, and cooperating with one another in all aspects of the assignment.

### Student Choices/Differentiation

Students may work in larger groups if they find navigating with the GPS devices difficult.

### What to Look For

- Students are communicating in an effective manner.
- They are following the guidelines and social etiquette of the geocaching activity.
- Is one group falling behind or largely ahead of the others?

## Formal and Informal Assessments

Have students turn in their GPS artwork and points for formal assessment.

### Closure

- How do you feel about using the GPS trackers? Are you more confident?
- Now that you have learned to use the GPS and the compass, which is easier?
- Did starting with the compass help you understand the GPS better?

*Today, you took the GPS and geocaching to the next level, looking for caches and plotting out points in your own initials. In our next class, you will set out your own caches, so gather into small groups and discuss what you would like to bring in for your cache or where you would like to place it on campus.*

### Reflection

- Are the groups understanding the assignments, or is one student leading the rest of the group?
- Do students understand the GPS device better than the compass or not as well?
- Are the activities challenging for students?
- Are students engaged in learning as they navigate with the GPS?

### Homework

*Bring in anything you need in order to make your own cache for the next class.*

### Resources

The Science Spot: [www.sciencespot.net](http://www.sciencespot.net)

## GPS ARTIST

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Design It

Use the space below to plan and sketch. Draw a sketch of your initials, and then write the directions that you would need to follow if you were to follow the letters as a route.

### Draw It

Use the GPS unit to create your art. Set waypoints on the GPS that link together in the order in which you place them, creating a pattern or drawing.

### Log Your Waypoints

### Analyze It

How did you do? Were your initials easy to read? Explain.

What would you do differently if you repeated this activity?

What else could you draw using the skills that you just perfected?