

Activity A1: Getting to Know Your GPS Receiver

Note: the procedures described below are for use with the yellow Garmin eTrex GPS receivers (the model supplied in the basic Virginia 4-H GPS Educational Kits). The instructions can easily be altered for use with other GPS receiver models.

Introduction:

In this first activity, your students will learn to operate GPS receiver control buttons to find main pages and sub-pages, scroll and highlight, select and enter, and perform other basic processes. Rather than lecturing with step-by-step instruction, let them experiment with their receivers. You may be amazed how much they can learn in 10 or 15 minutes! Then you can follow up to be sure they grasped the key operations. Mastering these basic skills will make all of the subsequent activities much more enjoyable and easy to learn.

Materials Needed:

GPS receivers – ideally one per student or pair of students.

Quick Start Guide and/or Owner’s Manual – ideally one per student or pair of students.

Time Involved: 30 minutes

Getting Started:

See “*Preparing GPS Receivers for Group Activities*”

Do the Activity:

Hand out the GPS units along with the Quick Start Guide and/or Owner’s Manual. Have your student work and learn together in small groups. Your instructions to the students might be something like this:

“Your GPS receiver has several control buttons which allow you to find pages, scroll through lists, enter data, and select other things you want to do. Instead of telling you about how to do all these things, first see how much you can discover for yourself. For the next ten minutes, work together and see how much you can learn about your GPS receivers! Use the Quick Start Guide and the Owner’s Manual to help you figure out the operations. To get you started, turn your GPS receiver by pressing and holding the *Power* button. Now, go for it!”

Caution: As long as they push one button at a time, your students probably will not accidentally damage their receivers or loose the data they contain. However, they should not press any other buttons while pressing and holding the power on button. This could result in a unit reset.

After 10 to 15 minutes, quiz your students orally to see how many GPS operations they have grasped. For each question, ask the answering student to stand and demonstrate the process to the other students.

1. How do you turn the receiver on and off?
(Press and hold the POWER button).
2. How do you turn on the screen backlighting?
(Press and release the POWER button).
3. How do you adjust the screen contrast?
(From the satellite page, push the UP and DOWN buttons).
4. Where are the batteries?
(Turn the D-ring on the back of the unit and lift).
5. What are the main pages?
(Satellite, Map, Pointer, Menu)
6. What button do you push to rotate through the main pages?
(PAGE button)
7. What is the other important use for the PAGE button?
(Serves as a “back” button or “escape” button)
8. What buttons do you use to highlight the various options on page?
(The UP and DOWN buttons)
9. What button do you press to see options on a page and to confirm data entry & menu selection?
(The ENTER button)
10. What else does the ENTER button do?
(Press and hold to bring up the Mark Waypoint page)

Background Information:

GPS receivers are designed to simultaneously perform a multitude of tasks. Your students can move from page to page to see data being recorded, to find waypoints, to search data bases, and to generate navigational information. Positional data is still being generated no matter which page is in view, as long as satellite contact is maintained.

Depending on the make and model of GPS receiver, buttons, rocker panels, and/or click sticks are the tools used to access the pages and the data they contain. Refer to the owner’s manual for specific details about the model your group is using.

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Likewise, the main pages and sub-pages will vary by make and model. Again, refer to your owner's manual for specific details. As you talk with your group, be sure they have discovered these common pages and at least some of their functions.

- Satellite page – Usually the first main page to appear. It shows the expected satellites in view, their relative positions, lock-on status, and signal strength. The page will alert you when 2-D or 3-D navigational status has been achieved and provides an accuracy estimate.
- Map Page – Displays a screen with an icon showing current position (if you are locked-on). Zoom-in and zoom-out allows viewing of waypoints in range and tracks that are made. Some GPS models include data base points, road and topographic maps, and other information on the screen.
- Navigation page (also known as the Pointer or Compass page) – Displays a compass ring that rotates *as you move*, showing your direction of travel. If you activate a *GoTo* request (such as *GoTo* a waypoint), a directional arrow will appear to guide you to this destination, *as long as you are moving*. Although this page looks much like a magnetic compass, it operates quite differently. You also can view a variety of positional and navigational data on this page, such as current coordinates, heading, speed, trip odometer, distance to destination, estimated time of arrival, and much more.
- Main Menu – Contains many important sub-pages that provide access to waypoints and data bases, track logs, and routes. Under the Setup sub-page, you can adjust the various navigational units, time zone, display, interface, and other details.

Your particular model of GPS receiver may have other main pages and sub-pages. Read your owner's manual and become familiar with their operation and functions.

Note: Comments and suggestions regarding this activity and other components of the Virginia 4-H GPS curriculum are appreciated. Please contact Mike Clifford at: mjc4h@vt.edu / 804-561-5411 / 11131 Amelia Springs Rd., Jetersville, VA 23083

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