

# GPS Protocol

## Field Guide

### Task

Measure the latitude, longitude, and elevation of your school or a GLOBE study site.

### What You Need

- GPS receiver
- Watch
- GPS Data Sheet*
- Pen or pencil

### In the Field

1. Take the GPS receiver to the exact location you would like to determine latitude, longitude, and elevation.
2. Turn on the receiver, making sure that you are holding it vertical and you are not blocking the antenna's view of the sky. In most receivers the antenna is internal and is located at the top of the receiver.
3. After an introduction message, the receiver will start to search for satellites. Some receivers may display the previous latitude, longitude, and elevation values while it is locking onto satellite signals.
4. Wait for the receiver to indicate that at least four satellites have been acquired and that a good measurement is available. In most receivers, this is indicated by the appearance of a "3-D" message.
5. At one minute intervals and without moving the receiver more than one meter, make five recordings on a copy of the *GPS Investigation Data Sheet* of all digits and symbols for the following displayed values:
  - a. Latitude
  - b. Longitude
  - c. Elevation
  - d. Time
  - e. Number of satellites
  - f. "2-D" or "3-D" status icons
6. Turn off the receiver.
7. Average all five latitudes, longitudes, and elevations.
8. Confirm for yourself that your results make sense. You should be able to get a rough estimate of your latitude and longitude by looking at a globe or local map.
9. Copy and submit all GPS readings as your site location to the GLOBE Student Data Archive.
10. Follow this protocol at each site that you need to determine latitude, longitude, and elevation.