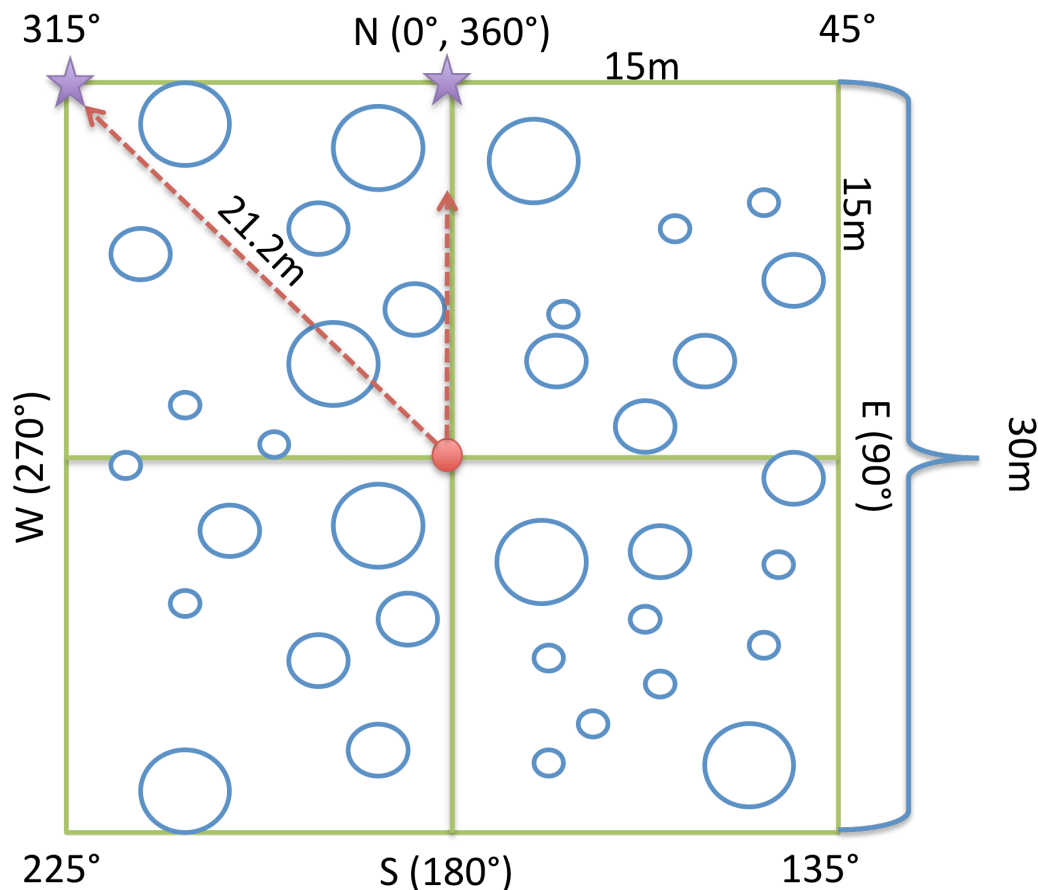


Carbon Cycle Sample Site Set-up - Student Field Guide

Sample Site Corner Team

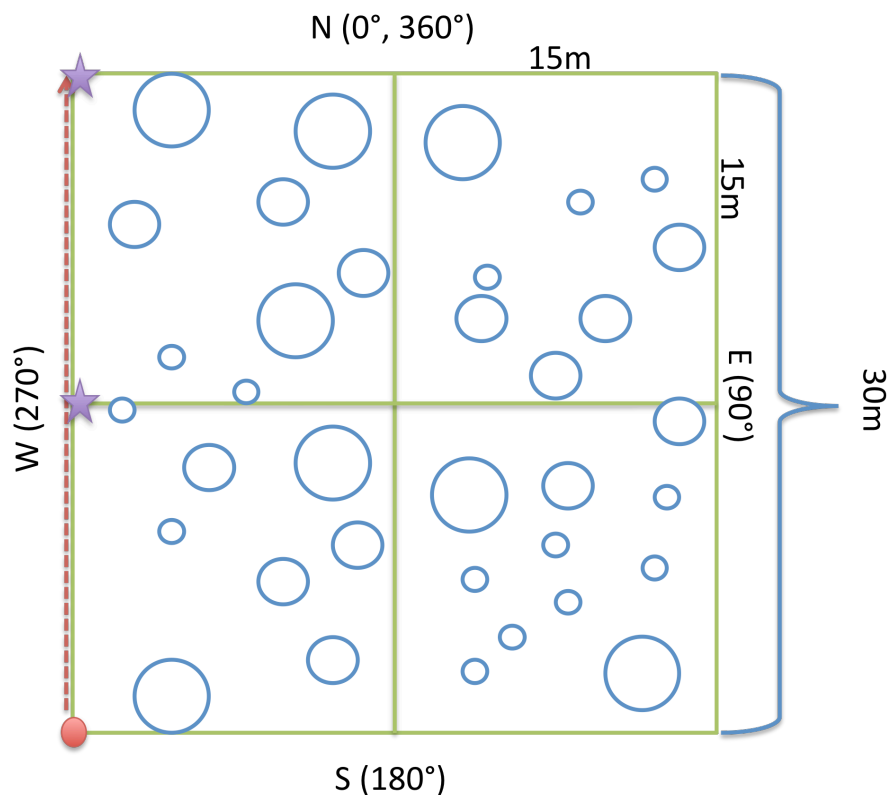
- 1) Start at the center of the sample site.
- 2) Select one person to stand at center with the compass. Turn the housing to an azimuth of one of the sample site corners (e.g. 315°).
- 3) Instruct a second person to stand at the given azimuth some distance from the center. (This person will keep the pacer on the correct azimuth.)
- 4) The third group member should pace 21.2 meters along the azimuth toward the second person.
- 5) Place a temporary flag or stake at 21.2 meters. Each corner will be checked by the Perimeter team.
- 6) Repeat the process for the cardinal direction (e.g. North) to your right. Pacing only 15 meters before placing a flag. [These flags divide the sample site into 4 quadrants.]



Carbon Cycle Sample Site Set-up - Student Field Guide

Sample Site Perimeter Team

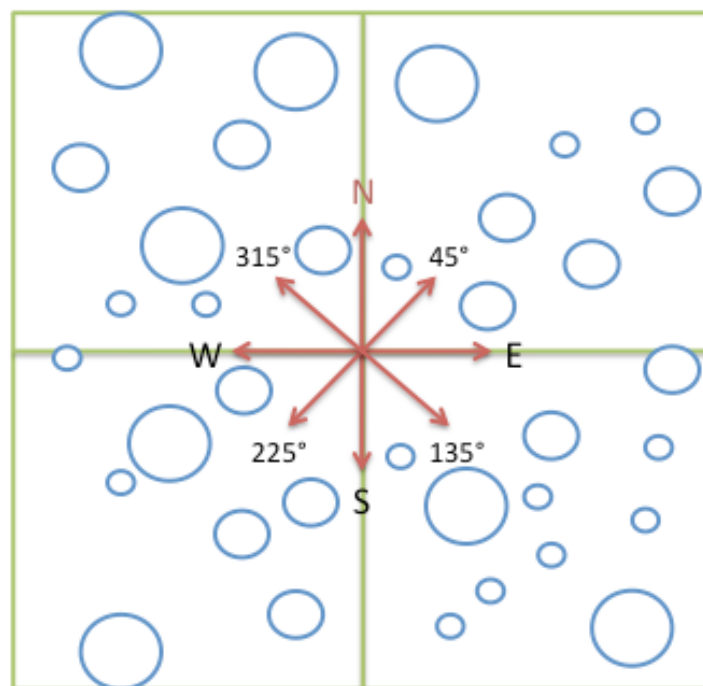
- 1) Start at first corner of the sample site completed by a Corner Team.
- 2) Select one person to stand at the corner with the compass. Turn the housing to a cardinal direction (N, E, S, W), heading toward another sample site corner.
- 3) Instruct a second person to stand at the given azimuth some distance from the starting corner. (This person will keep the pacer on the correct azimuth.)
- 4) The third group member should pace 30 meters along the azimuth toward the second person.
- 5) Place a temporary flag or stake at 30 meters.
- 6) If the new flag is less than 3 meters from a Corner group's flag, keep the original flag and remove yours. If it is more than 3 meters leave your flag and have the Corner team re-pace that corner.
- 7) Repeat the process for all sample site corners.



Carbon Cycle Sample Site Set-up - Student Field Guide

Sample Site Center Team

- 1) Stand at the sample site center.
- 2) Record the appropriate site location information on the *Sample Site Data Sheet*.
- 3) To complete the vegetation analysis have each team member independently estimate percent cover of shrubs/saplings and herbaceous cover. Record all estimates on the *Sample Site Data Sheet* and find the average. Keep in mind that you will only measure the shrubs/saplings on your plot if they cover greater than 25% of the sample site area, and herbaceous vegetation if it covers more than 50%.
- 4) To begin the photography measurements, check to make sure the date and time in the camera are correct.
- 5) Use a compass to orient your team and take one photo in each of 9 directions, the cardinal directions (N,S,E,W), their intermediates and up into the canopy.
- 6) Record the digital number of the photo for each of the photos taken on the *Sample Site Data Sheet*, so you can identify them later.
- 7) If there is extra time, walk the sample site area and take other relevant photos, such as dead or downed trees (to note their change in decay from year to year), and other student teams performing sample site set-up tasks.



Carbon Cycle Sample Site Set-up - Student Field Guide

Sample Site GPS Team

Task

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

Materials

- | | |
|---------------------------------------|---|
| <input type="checkbox"/> GPS receiver | <input type="checkbox"/> GPS Data Sheet |
| <input type="checkbox"/> Watch | <input type="checkbox"/> Pen or pencil |

Procedure

- 1) Take the GPS receiver to sample site center (or 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.

Carbon Cycle Sample Site Set-Up - Data Sheet

School Name: _____

Date/Time: _____
Year Month Day Hour (local) Hour (UT)

Recorded By: _____

SITE LOCATION

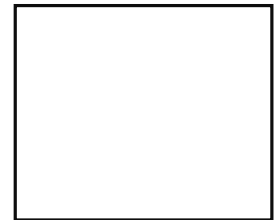
Site Type (circle all that apply): Atmosphere Carbon Cycle Hydrology Landcover Phenology Soil

Site Name: _____

City/State/Country: _____

Shape of Sample Site: Square ☐ Rectangle ☐ Circle ☐ Other (Sketch)

Site Dimensions (meters): _____



SITE VEGETATION ASSESSMENT

Are there Trees (circle one)? Yes No

%Cover shrubs/saplings: _____
Team Member 1 Team Member 2 Team Member 3

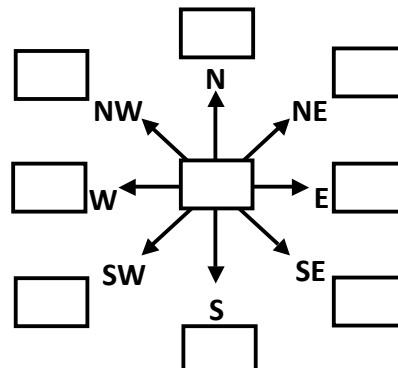
Average: _____

%Cover herbaceous: _____
Team Member 1 Team Member 2 Team Member 3

Average: _____

METADATA (Comments)

PHOTO NUMBER AND ORIENTATION FROM SITE CENTER



GPS Investigation - Data Sheet

School: _____ Date: _____

Site Type (circle all that apply): Atmosphere Carbon Cycle Hydrology Landcover Phenology Soil

Site Name: _____

Recorded by: _____

- Do not begin recording data until GPS receiver has “locked in.”
- Wait at least one minute between recording observations.
- Record the following data form the appropriate screens on your GPS unit.

	Latitude Decimal degrees N/S	Longitude Decimal degrees E/W	Elevation (Meters)	Time H:M:S UTC	# Sats Satellites	Messages Circle if Shown
1						2D 3D
2						2D 3D
3						2D 3D
4						2D 3D
5						2D 3D

			← Averages
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GPS Unit Information

Brand Name: _____

Model Number: _____