

Conducting a Local Field Survey

Students can take what they have learned about geospatial analysis and apply it in a local field survey. Conducting surveys in local ecosystems is an excellent way to engage students in life science learning. Students get the opportunity to practice collecting data, creating models, and using maps. Field surveys also help build student empathy for natural or wild spaces.

Objectives:

Students will be able to

- Systematically collect field data from a local ecosystem
- Geographically display collected data to build a model of an ecosystem

Materials:

- Local natural space
- Printed overhead maps of natural space
- Clipboards
- [Local Field Survey Reflection worksheet](#)

Process:

- 1) Display earth.google.com for students. Ask students what they know about Google Earth and how those images are collected. Demonstrate the capabilities of Google Earth as a full globe model and as a map of most locations on earth. Describe the process that Google uses to collect images (a combination of satellite imagery, photography from planes, and street-view car photos).
- 2) Starting from the globe view (by clicking the globe in the bottom right-hand corner), ask students for directions on where they would find their school building. Follow student directions to zoom in until the school building is visible on the application. If students are unable to give directions, ask questions of the class to help specify the location of the building.
 - a) What continent are we on?
 - b) What state are we in?
 - c) What city are we in?
 - d) What borough are we in?
- 3) Using Google Earth, examine the area around the school together. Ask students if they can identify all of the buildings on the school grounds, and any of the surrounding buildings. As a check for understanding, ask students to point in the direction they live from the displayed school building.
- 4) Tell students that Google Earth is also a GIS system that displays data from a variety of sources in geographic space. Show students the different display options that are available with Google Earth under the "Map Styles" tab on the right.

- 5) Still using Google Earth, scroll from the school building to a local natural area. Ideally the area should be within walking distance. The space could be the school yard or a nearby park. The space should include more than one kind of vegetation, as well as the potential to find evidence of animal life.
- 6) Tell students that they are going to conduct a field survey of the natural area similar to surveys performed by WCS field scientists. Direct students to think-pair-share about what environmental factors the survey should include. Some possible answers are:
 - a) Vegetation (type and amount)
 - b) Sources of water
 - c) Signs of non-human animal life
 - d) Signs of human impact
- 7) Split students into groups and assign each of the groups a particular environmental factor to survey. Have groups decide what evidence they are looking for, and how they will record that evidence.
- 8) Print an overhead map of that area using Google Maps. Be sure to print in grayscale so that students will be able to write on the map. Direct each group of students to write a key on their map to identify what symbols used on their maps represent.
- 9) Once you arrive at the area, move with your students systematically through the space to ensure collection of relevant evidence, supporting students' use of the map.
- 10) When you return to the classroom, compile your collected information onto one classroom map (made on large chart paper or projected onto a white board).
- 11) Using the whole class map, direct students to complete the Local Field Survey Reflection worksheet in their data collection groups.
- 12) Discuss student answers to the Local Field Study Reflection worksheet as a whole class. Point out that students were making inferences based on the evidence they collected. These inferences could be the foundation of a future scientific investigation.
- 13) Remind students that they just completed a process similar to that used by scientists who conserve animals in the wild. They are scientists, and can use these skills to answer local science questions in the future.