

Tree Tour

Creating a Self-guided Tree Tour using Technology

Rationale:

Whether they are in the backyard, the schoolyard, the park or the forest, trees are one of the most important, and most recognizable, parts of many local ecosystems. Activities that bring students closer to trees are a great first step in fostering both an understanding of and an appreciation for nature. Using Project Noah to locate, map and identify trees to create a local tree tour at a park or school allows students to use technology to create a lasting demonstration of appreciation for nature that can be shared with others who use the area for education, recreation or other purposes.

Objectives:

- To learn to organize and promote a community improvement project.
- To provide a service to the community.
- To learn to use technology to benefit the environment.
- To improve descriptive, informational writing skills.
- To better understand trees and their role in the environment.
- To learn to identify common tree species.
- To become familiar with Project Noah tools.
- To gain a greater appreciation for nature.
- To improve observation skills.

Materials:

digital cameras
mobile device equipped with the Project Noah app
notebooks or clipboards
computers with access to www.projectnoah.org
field guides (optional)

Motivation/Preparation:

The instructor should locate an easily accessible area with a variety of tree species where a tree tour could be created. Once created, the tree tour will allow anyone with a mobile device and the Project Noah app to locate and learn about the trees that students have located, identified, researched and written about, effectively creating a technology-assisted guided tour of the trees in the area.

Tree identification books and online identification resources will be helpful in the identification process, and the instructor may wish to recruit a tree identification expert from the local area (perhaps the state forest service or a local land trust) to introduce the students to common tree species and key features used to identify trees.

Introduction:

Explain to the students that this activity is intended not only to teach them about trees, but to create a technology-assisted tour that other classes or individuals can use to learn about the trees they discover. The final product will allow a kindergarten class, birding club or nature lover to use their mobile phone to find and learn about local trees.

Inform students that they will be locating, identifying, researching and writing about trees for a variety of different users, and they should work to be as accurate as possible.

Ask students to brainstorm why trees are important. What do they do for other plants and animals? For the soil? For the air? Why are trees important to humans?

Have students list tree species they are familiar with. What are the two major groups (coniferous and broad-leaved) of trees?

Remind the students that they are taking on an important responsibility that reaches beyond their own classroom by creating the tree tour. They will become leaders in the community, and the work that they do will help the entire community better understand trees and their role in the local environment.

Register as a teacher and set up student accounts on Project Noah via the educational portal at www.projectnoah.org/education and create a local mission for the tree tour.

Procedure:

The instructor should introduce Project Noah to the students: Project Noah is a tool that helps people share their experiences with nature and participate in research projects that study, protect and teach about the environment and the plants and animals that live there.

On the computer:

Have students log on to their Project Noah accounts and check out the recent spottings that have been posted. Have students click on the mission page and open one of the featured missions. Explain that, by contributing to missions, Project Noah users like themselves become citizen scientists and play an important role in research efforts around the world.

Students should then click on the organisms page and type in a local tree in the search line that the instructor has created as a good example of the type of information they will provide in their survey entries - one of the instructor's own spottings that includes all of the details the should be

included for the targeted users of the tree tour. One potential target audience is the lower grade-level students of the local school. Students involved in the tree tour project would then create easy-to-understand entries that the elementary teacher could read to the class from a mobile device along the tree tour.

Direct students toward the appropriate thumbnail image and have them open the spotting window for the instructor's tree spotting. Walk through each part of the spotting page: photos, description, habitat, notes, links, nearby spottings etc. to familiarize them with the type of information they will want to provide for the tree tour, and remind them that they will be training others to use the site as well.

Give students some time to explore the site on their own. Ask them to investigate all the major sections of the Project Noah site and become familiar with the online tools. Have students explore their local area with the map function, check out organisms from around the world, build a list of favorites and join other missions that are of interest to them. Challenge them to find interesting trees from other parts of the world.

Remind students to dress appropriately for the field activity next class.

In the field:

Review the key identification features discussed in the previous class. As a group, the students should move through the area identified as the tree tour area, selecting trees that are good examples of different species found in the area.

Once a tree is chosen for inclusion in the tour, the instructor should take a photo of the tree using the mobile device. This will automatically create a latitude and longitude designation for that tree and allow it to be distinguished from nearby trees on the map tool once it is posted as a spotting on Project Noah.

Additional photos of distinguishing features of the tree should be taken by students using the digital cameras. All tree photos should be given a number or letter designation so that photos taken on different devices can be loaded to the appropriate spotting in the classroom. This is best done by taking a photo of the ID number after each photo or sequence of photos for a particular tree. For example, the instructor would take a photo of the ID number 7, written on a piece of notebook paper, immediately after taking three photos of an oak tree with the mobile device. Students taking additional photos of the leaves, bark, twigs and acorns of that particular oak would also include a photo of the 7 designation before moving on to the next tree to be featured.

The identifying number should also be included with the detailed notes students take describing each tree and the habitat it was found in. Thorough and accurate notes will be critical to identifying trees and creating complete entries for the tour in the classroom.

Continue to select and photograph trees until a reasonable number for starting the tour has been collected.

In the classroom:

Remind students that their Project Noah entries will be used by others who want to learn or teach about the trees on the tour, and the information should be accurate, well-written and complete.

Digital photos can be transferred directly to student computers upon return to the classroom. Depending on the equipment available and other classroom considerations, the instructor may wish to download all photos or groups of photos to a shared file that students can access through the network to select photos for posting.

Digital photos should be posted to Project Noah as individual spottings with the associated data recorded in the field. After an attempt to identify the tree species has been made, photos taken with the mobile device of each tree selected for the tour should be posted on Project Noah. Spottings are often best organized and posted by students working in pairs.

Students should include as much field data as possible in each spotting, making sure to thoroughly describe the organisms and habitat and include a location ID in the notes section.

Once the species is identified, students should be assigned individual trees to research. Working in pairs, students should use field guides, online information and other resources to find additional facts to be included in the notes section of the spotting or elsewhere.

The instructor may choose to review the students' works as mini research reports, requiring them to be submitted, reviewed, edited and approved before final posting.

Additional photos and information details may be added to the spotting using the edit button.

Online information sources should be included as links in each spotting.

Unknown species can be examined further and identified using field guides or other means, or posted on the site as unidentified. Links to sites used to help identify the organism should be included in the spotting.

Students should make sure to assign tree spottings to the tree tour mission. Other spottings may be contributed to appropriate missions after being posted to students' individual accounts.

Suggested ID's provided by the Project Noah community should be discussed by the students in small groups for accuracy, and spottings should be updated with new ID's, links or other information as soon as possible.

Analysis:

After all trees have been posted from the first phase of the tree tour survey, students should return to the site to test the tour entries. Individual students or pairs of students who created the entries

should use Project Noah map tools to locate and then read the information for the tree they researched, presenting their work to the rest of the class in the field.

After field testing of the tour is complete, students should be assigned to recruit other groups to take the tour. Students should approach other teachers, classes, parents, community groups and the press, explaining how the technology-driven tree tour works. Students may even wish to create a brochure that explains the tour and how to follow a self-directed tour using Project Noah and a mobile device.

Discussion Points:

What types of trees were most common in the tour area? Were any of the trees considered rare or unusual for the region?

What role do the trees on the tour play in the local ecosystem? How do the trees interact with other organisms in the area?

What were some of the most interesting things discovered during the tree research?

Why is it important to include other members of the community in this project? How does the community benefit from an increased understanding of and appreciation for trees?

Extensions:

Have students plan additional phases for the tour. Expand the tree list, add a spring wildflower component, or include a mushroom finding guide.

Revisit the trees on the tour at different times of year and include seasonal changes in the tour information on Project Noah.

Have students use geometry formulas and measurement skills to determine the diameter, height, crown spread and girth of trees along the tour. Use math to estimate the number of seeds produced over a period of time, the growth rate or other calculations.

Have students review the tree list from the tour and determine the home range of the trees. Were they all native to the area? What are the possible differences between native and introduced trees with regard to their roles in the local ecosystem?