Carry Me to the Park: Digital Field Guides for Mills Riverside Park

Grade Cluster – 6 – 8

NETS-S – 2 - Communication and Collaboration

Quick Look:

Students at Browns River Middle School work with experts from the University of Vermont and the State of Vermont Department of Natural Resources to research animal and plant life, geology, pond and stream ecology or other scientific areas of interest as they study science and park stewardship at Mills Riverside Park. The final product of their study is a collection of digital field guides for visitors that can be downloaded to a digital device and referred to during a park visit.

Scenario:

On a recent visit to Mills Riverside Park, several students noticed a lot of garbage in the fields and around the river. They also noticed places where visitors had cut birch bark from trees and trampled vegetation. They even found some dead fish floating in the pond. In addition, funding for Mills Riverside Park has become uncertain during the economic downturn, so maintaining the park has become a local issue. Most of the students have enjoyed park visits throughout elementary school and have learned to be good park stewards, but they want to know what they can do to educate the public, while at the same time teaching them about the natural habitats within the park.
Using a *graphic organizer* on their classroom *SMART Board,* students brainstorm the problems associated with uneducated visitors. They also record ideas about how they can educate the public. As they discuss and record ideas, they decide to create park guides that include information about the habitat, how to take care of the park and how to support the park fund. They brainstorm the various types of field guides that might be used to educate the public while visiting a natural area (e.g. "Field Guide to" -- trees, plants, woodland animals, reptiles, birds, field animals, insects, the pond, the river, geology – "at Mills Riverside Park"), noting that each field guide will include a list of "good stewardship" information.

At the beginning of the study, students spend a half-school-day visiting the park, recording and observing "science" as well as stewardship areas of concern. Groups of four students are formed, each accompanied by a parent or teacher chaperone. Each group of students is given a specific location to explore and examine during the visit (e.g., the pond, one of the fields, the river, or a specific location in the woods).   Some groups are given a map, a *digital voice recorder*, a *digital camera,* a *GPS,* and some type of note-taking device, while other students carry a smart handheld device, such as an *iPhone,* with the ability to record sound, take pictures, identify *GPS* points, and record notes. Each student is given a scientific role to play: botanist, biologist, geologist, or ecologist. Based on his/her particular role, each student observes and records plants,

animals (or evidence of), geological formations, or other observations that might be included in a field guide to the park, as well as notes about how visitors are misusing the park. (2a, 2d, 6a, 6b, 6d) As students collect information, they set the *GPS* location for each piece of data and/or note taken. (6a) Students also record their "I wonder" questions as they explore the park. (2d, 6b)

Upon returning to the classroom, each group sorts their notes and questions in the *[visual organizer](#)*, organizing the work by topic (geology, biology, botany, ecology). (2a, 2d, 6a) Students group their pictures and post them on *[Picasa](#)* indicating the *GPS* location, *tagging* the picture with the topic (geology, botany, biology, ecology), working to avoid duplication, and agreeing on the "best" pictures. (2a, 2d, 6a, 6b) Finally, the groups combine all their work, joining their *visual organizer* files to form a large graphic organizer and an album of pictures to which additional work will be added during the course of the project. (2a, 2d) This larger organizer is used later as students zero in on the topic they wish to research for their field guides.

Students spend a day or two studying all findings, questions, and pictures, in order to decide the scientific area on which they wish to focus. Each student develops one or two questions for further research. Teams of two to four students are formed, based on topics chosen, to create field guides. Students return to the park several times to collect specific information related to their topics, using the same digital devices used during the first visit. (2a, 2d, 6a, 6b)

During the course of this study, groups of students collaborate with experts based on the topic of study (biology, geology, botany, ecology). Students work with UVM graduate students, UVM professors, and scientists from the State of Vermont Department of Natural Resources. Communication with these experts takes place via *[e-mail](#)*, *[Skype](#)*, in person during classroom and field visits, and through comments placed within a *wiki* where students are collecting the information needed to complete their field guides. (2a, 2d) Students record information, with the permission of the expert, to add to the field guides as appropriate.

As students collect information, groups working on each field guide continue to record, draft, and refine the information in a *wiki* and on their *[Picasa](#)* albums to prepare for the final product. (2a, 2b, 2d, 6a, 6b) *[VoiceThreads](#)* are created with comments from experts added as the students record information. Each group of students has at least one face-to-face visit with an expert during a study at the park.

Each group creates a final group product in the form of a map of the park, with *GPS* locations identified accompanied by an audio or video field guide for specific scientific topics, as well as a printed poster that advertises their work that is laminated and hung inside the covered bridge at the park. Each field guide and poster also includes information about caring for the park with an additional piece about how to contribute to the park fund. These guides are posted on a website and designed so that park visitors can download them to a portable digital device, such as a *GPS,* prior to a visit, or access them live, and interactively, with a portable web-enabled device such as an *iPhone*. (2a, 2b, 2d)

Student Standards – The following NETS-S are noted in the scenario:
   2. Communication and Collaboration – A, B, D
   6. Technology Operations and Concepts – A, B, D

Teacher Standards –Teachers who teach this unit address the following NETS-T:
   1. Facilitate and Inspire Student Learning and Creativity – A, B, C, D
   2. Design and Develop Digital-Age Learning Experiences and Assessments – A, B, C
   3. Model Digital-Age Work and Learning – A, B, C, D
   4. Promote and Model Digital Citizenship and Responsibility – B

Content Grade Expectations

The scenario writer has identified the following content grade expectations that s/he felt might be assessed in this scenario. In most of these scenarios, there may well be opportunities to assess other or additional content grade expectations across a variety of disciplines. If you are interested in developing a unit or lessons based on the following scenario, and you don't see any grade expectations in your content area, we encourage you to capture the ideas presented in the scenario and make it your own by adding components that address the grade expectations you are most interested in assessing.

S:36 Students demonstrate their understanding of equilibrium in an ecosystem.

S:38 Students demonstrate their understanding of classification of organisms.

S:48 Students demonstrate their understanding of processes and change over time within earth systems.

S:49 Students demonstrate their understanding of processes and change within natural resources.

H&SS7-8:1 Students initiate an inquiry by…
- Asking focusing and probing questions that will lead to independent research and incorporate concepts of personal, community, or global relevance.

H&SS7-8:6 Students make connections to research by…
- Formulating recommendations and/or making decisions based on evidence.
- Proposing solutions to problems based on their findings, and asking additional questions.

H&SS7-8:7 Students communicate their findings by…
- Developing and giving oral, written, or visual presentations for various audiences.

H&SS7-8:12 Students show understanding of human interaction with the environment over time by…
- Generating information related to the impact of human activities on the physical environment in order to draw conclusions and recommend actions.

H&SS7-8:14 Students act as citizens by…
- Identifying problems, proposing solutions, and considering the effects of a course of action in the local community, state, nation, or world.