Outdoor Learning Spaces

Grade Cluster - 3-5

NETS-S-4 - Critical Thinking, Problem Solving, and Decision Making

Quick Look:

As part of a school board initiative to redesign the land around the school, a multiage classroom develops a plan for interactive outdoor learning spaces. The students develop four learning spaces called “Froggy Bottom”, “Today’s Weather”, “Shhh! Quiet”, and “Plants Plants!”.

Scenario:

The students are very excited because their idea to develop an outdoor learning space is approved by the principal. The students post an "Idea Search" on their blog and ask for suggestions to revitalize the school’s nature trail by developing outdoor learning spaces along the trail. The students use the *blog* to communicate their project and use the suggestions and comments as they develop the learning spaces. (4a, b)

To support their project, the class invites experts from the Vermont Departments of Fish and Wildlife, Environmental Conservation, Forests & Parks, and Agriculture to visit the school, work with the class, and identify areas to develop. In addition, the class arranges to collaborate with these groups through *email* or a *videoconference* as the project progresses. Students join several *virtual tours* to see what others have done when given the opportunity to make an "outdoor learning space". One virtual tour that they join is Welcome to Bayville, Maryland’s "BayQuest", a *virtual tour* of Chesapeake Bay. (4a, b, c, d)(6a, b, c)

After a few visits to the old nature trail area and because of suggestions from their *blog*, the students identify four sections that seem to have natural boundaries along the path. With their *netbooks* and *digital cameras* in hand, each group sets out to create a visual presentation of a section before they begin to redevelop their learning space. The groups collaborate and make a video and a slide show of the trail before it is renewed. They post it on the project *blog* where they report the progress of the project. (4a, c)(6b)

The class divides into four groups and each group selects a section of the path as their area to redevelop. They give each area a name, “Froggy Bottom”, “Today’s Weather”, “Shhh! Quiet”, and “Plants Plants!”. The groups create a graphic to represent their section using Photoshop and use it to make a durable sign for each area. The students visit the trail throughout the year and identify seasonal activities for their learning space. As wireless is available throughout the trail, students use their *netbooks* as they work along the trail. They spend many days developing interactive activities, where students use *science probes*, outdoor infrared cameras, and weather gauges to record and track data, and make observations. The data is stored in “*the Cloud*” where students can communicate, collaborate and create by sharing the information. (4a, b, c) (6a, b)

The "Froggy Bottom" learning space includes an activity where students use probes to measure water ph, temperature, and hardness. The students add their collected data to the collaborative *Goggle Form,* FroggyBottomWater. The "Plants Plants!" learning space has students measure, collect the diameters of the trees, and track the growth of the trees over time using a shared *Goggle Spreadsheet.* "Today's Weather" learning space contains an outdoor weather station that collects and reports data about the local weather and is accessible via the *Internet*. "Shhh! Quiet" is a space for listening, reading, writing, drawing, and thinking. (4b, c)

All areas have plant and wildlife identification activities available and students add information about the plants and wildlife they identify to an on-line database. The database creates a real time graph of the data. The spaces also include areas for large and small group work. (4a, c) (6b)

Posts are made to the project blog throughout the project. They collaborate on a *PBwiki* to create an interactive guide to the Trail that describes the activities and provides electronic information for the learning space. They create a page on their class *web page* that monitors and interacts with the learning spaces. They develop a pamphlet using *MS Publisher* to introduce the new Learning Spaces to the community. People are encouraged to continue to add to the *wiki* even after the project is officially closed. (4b) (6a, b)

Students use *Goggle Docs* to collect and organize the data for the project and *Picasa* to upload all graphics. The graphics they produce and the information they collect are now available for all students to use or add their own graphics under the *Creative Commons license.* (4b)

The students organize a work weekend where parents and community members volunteer to clear the path and spruce up the learning spaces. The project opens to the public with a ribbon cutting ceremony and everyone walks through the new Learning Spaces and is introduced to the interactive projects that are now available for all students. (4a) (6d)

Resources:

Welcome to Bayville
http://bayville.thinkport.org/default_flash.aspx
Vermont Department of Forest, Parks, and Recreation
http://www.vtfpr.org/
Vermont Department of Fish and Wildlife
http://www.vtfishandwildlife.com/

Student Standards – The following NETS-S are noted in the Scenario:

4. Critical Thinking, Problem Solving, and Decision Making – A. B, C, D
6. Technology Operations and Concepts – A, B, C, 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,D
3. Model Digital-Age Work and Learning – A,B,C,D
4. Promote and Model Digital Citizenship and Responsibility – A,B,C
5. Engage in Professional Growth and Leadership – A,B,C,D

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.

Life Science,
S3-4:30 Students demonstrate their understanding of Structure and Function-Survival Requirements by

- Explaining how the physical structure/characteristic of an organism allows it to survive and defend itself.

S3-4:35 Students demonstrate their understanding of Food Webs in an Ecosystem by…

- Recognizing that, in a simple food chain, all animals' food begins with plants
- Researching and designing a habitat and explaining how it meets the needs of the organisms that live there.

Standard 1.8: Informational Writing: Reports
W4: 10 In reports, students demonstrate use of a range of elaboration strategies by…

- Including sufficient details or facts for appropriate depth of information: naming, describing, explaining, comparing, or use of visual images

Standard 7.9: Data, Statistics, and Probability Concepts
M4: 23 Interprets a given representation (line plots, tables, bar graphs, pictographs, or circle graphs) to answer questions related to the data, to analyze the data to formulate or justify conclusions, to make predictions, or to solve problems.
Standard 1.5: Writing Dimensions
Writing Process
W4: 1 Students use prewriting, drafting, revising, editing, and critiquing to produce final drafts of written products.
H&SS 3-4:14 Civics, Government and Society - Students act as citizens by…

- Demonstrating positive interaction with group members (e.g., working with a group of people to complete a task).
- Identifying problems, planning and implementing solutions in the classroom, school or community.