Harvard LTER Schoolyard Program

Teacher Developed Lessons and Documents that integrate Harvard Forest Schoolyard Ecology Themes into curriculum.

• **Presentation Title:** The Bob Starr Vernal Pool
• **Description of Presentation:** Third Graders educate their community about their Vernal Pool.
• **Teacher/Author:** Sharon Jacobs
• **School:** South Area Solomon Schechter Day School
• **Level:** 3rd Grade
• **Subjects:** Science integrated with art, language arts and technology
• **Date:** April 13, 2011
The Bob Starr Vernal Pool

3rd graders at the South Area Solomon Schechter Day School in Norwood, MA educate their community about their vernal pool.

Faculty:
Lisa Grossmann - 3rd grade Teacher
Julia Horowitz - 3rd grade Teacher
Sharon Jacobs - Science
Kathy Kats - Art
Daiva Navickas - Technology
Bracha Oren, Iris Rozenberg, Sarah Shay-Davidson - Hebrew
Vernal Pool Introduction

It all started when SASSDS moved to its new home in Norwood, MA three years ago. While scouting the land around the school, enjoying the hills, woods and nature around us, we discovered, nestled in the woods, a vernal pool.

A year later we enrolled in the vernal pool program sponsored by the Schoolyard Ecology at Harvard Forest and coordinated by Pamela M. Snow.

The project inspired us to include the vernal pool in our environmental curriculum for both 3rd and 7th grades with the following goals in mind.
Goals:

Educate students about watersheds, vernal pools and ecosystems and the importance of the vernal pool to the local biome.

Create an outdoor/indoor curriculum that integrates science, art, language arts and technology.

Promote awareness and critical thinking amongst students, so they will find their own ways to educate the community about the vernal pool and devise ways to protect it.

Science
Sketching on location
Steps of the Vernal Pool Project

- Getting to know the vernal pool
- Learning about watersheds, biomes and ecosystems.
- Dedication of the vernal pool
- Devising ways to educate our own community
- Devising ways to educate the outside community

Don't litter
Protect our pool!
Step 1: Getting to know the vernal pool

- Seasons
- Part of a watershed
- Measuring and mapping the vernal pool
- Part of an ecosystem
- Abiotic conditions
- Biotics - its inhabitants both plant and animal include pictures and examples of students work: Art drawings, science drawings, field notes and collected data

Harvard LTER Schoolyard - Vernal Pools

<table>
<thead>
<tr>
<th>Date</th>
<th>Depth</th>
<th>Diameter</th>
<th>Max</th>
<th>Min</th>
<th>AirT</th>
<th>WaterT</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/13/2010</td>
<td>12cm</td>
<td>7cm</td>
<td>3</td>
<td>NA</td>
<td>20C</td>
<td>5C</td>
</tr>
<tr>
<td>11/22/2010</td>
<td>24cm</td>
<td>14cm</td>
<td>10cm</td>
<td>10cm</td>
<td>10C</td>
<td>5C</td>
</tr>
</tbody>
</table>
Step 2: Watersheds and ecosystems

- What is a watershed
- What is an ecosystem - food webs and food chains.
- Science: The students read fiction and non fiction books in groups, created posters and wrote their ideas on food chains and food webs.
- In small tanks, the students created models of the vernal pool, using water from the pool itself. Half of the models were contaminated with trash found in our pool (Coke, oil, plastic bags) and tested the effect of contamination on the biotics and abiotics of their models.
- Language arts: the students read and watched the Lorax (by Dr. Seuss) and created food webs based on the book.
- Art: The students drew pictures of Salamanders and dragon flies based on the art of several American painters.
Third Grade Vernal Pool Experiment

Team: Lisa and Nazanin

The variable that we tested was:

In our initial observation, before starting our experiment, we saw these organisms with our naked eye:

[A list of observations]

We then observed these organisms when using our magnifying lens:

[A list of observations]

Other observations of both biotic and abiotic factors:

We began our experiment. After several days we examined our vernal pool water again.

We saw these organisms with our naked eye:

[A list of observations]

Other observations of both biotic and abiotic factors:

[A list of observations]
Step 3: The vernal pool dedication

- In order to register the vernal pool the students needed to officially name it.
- They chose to name it after our volunteer of the year, Mr. Robert Starr.
- Show pictures from the dedication, newspaper articles, and students letters to Bob Starr.
Step 4: Educating our community

- Students brainstorm on ways
- Students divide to task forces
- Posters, pins, and letters are made
- Work is presented to younger and older students and teachers, as well as the parent community
- Students met their younger and older peers and shared with them their findings on the vernal pool.
- Signs were put by the vernal pool so parents and visitors of the school can be aware of the vernal pool and visit it.
- Teachers were invited to the art exhibit of the 3rd graders (dragonflies and salamanders) and heard explanations on the vernal pool.

South Area Solomon Schachter Day School  
1 Commerce Way  
Norwood, MA 02062

Dear Schachter Community,

We are Third Graders at the South Area Solomon Schachter Day School. There is a vernal pool on our school property. A vernal pool is a place that fills up with water from rain and melted snow in the spring and then dries up in the summer. We do not want people to pollute the vernal pool because the animals that live there might die. We want out there to look at it and draw what we saw in our sketch pads. Animals live there such as salamanders, frogs, tadpoles and bugs, and have their babies there in the spring. We want to save the vernal pool and we hope that you will help too!

Sincerely,

Rayna Taliano, Dahlia Arbicamone and the 3rd Grade Class
Step 5: Educating the public

- Students go to the parking at Stop&Shop that borders the vernal pool.
- Prior to the visit the students created posters and pins that included scientific facts about the pool, the pollution and the desire to protect it.
- The students brainstormed, designed and wrote fliers to be handed to the customers.
- In Language arts the students were taught how to write an official letter. The students then typed a letter to our school newspapers and to the local one.
- Students went to the Stop&Shop parking lot (with the permission and blessing of the store's manager Mrs. Marianne Asfuccio). They stood with their posters, handed out fliers and explained to the customers about the vernal pool and the need to stop polluting it.
Conclusions

- The 3rd Grade class became knowledgeable about the important role that the vernal pool plays in the watershed and the ecology of our area.
- They used their new awareness to educate the community about ways to conserve this important natural resource.
- Our 3rd Grade students at the South Area Solomon Schechter Day School will continue to be stewards of the vernal pool by continuing to collect data for the Harvard Forest study. They will also continue to advocate for the care and conservation of the vernal pool, by our school and the larger community.
Bibliography

- Vernal Pools
  - Elizabeth A. Colburn
- A Field Guide to the animals of Vernal Pools
  - Leo P. Kenney, Matthew R. Burne
- PondWatchers
  - Guide to Ponds and Vernal Pools of Eastern North America
Bibliography

VERNAL POOL LESSONS AND ACTIVITIES
Sara Smith

ECOLOGY
Where Have All the Flowers Gone?

DOMESTIC CAT VIOLENCE
Nature's Clean-Up Squad

KIDS
HOME HOME IN THE BIOME

YOUR MINERAL MAKEUP

VERNAL POOL LESSONS AND ACTIVITIES
A Curriculum Companion is CERTIFIED as CDIP's Signature Scope Creation in Preserving Vernal Pools

Modesto Natives Pacific Graves, WA 95177
Bibliography

Big Night
for Salamanders
Sarah Marwil Lamstein

ART BY Carol Benioff