The Branch

Fall 2012

TOOLS FOR EDUCATORS

In this issue: Check out PLT's newly updated GreenSchools! Investigations (available for free online) that focus on STEM education and more, and our new school profiles that highlight what students around the country are doing to green their schools. Plus, learn how pairing older and younger students provides learning experiences for both in two PLT GreenWorks! nature trail projects.

FEATURE ARTICLE

New Curriculum Materials, More Ideas on PLT's New GreenSchools! Website

By Al Stenstrup

One way we spent our summer here at PLT was to update PLT's GreenSchools! classroom investigations (available for free online) and launch a new PLT GreenSchools! website. Come take a look!

News & Updates

Quick Response—Using Technology as an Entry Tool to Nature

By Joan Newkirk

QR technology and collaboration between older and younger students got kids outside and excited to learn about nature in this PLT GreenWorks! project in Maine.

From Youngest to Oldest, Great Ideas for a Nature Trail

By Christine Mathews

Fifth-graders and kindergarteners at Hillside Elementary in New York had a lot to teach each other, and the whole school benefited.

Educator Tips

PLT's Updated GreenSchools! Investigations Focus on STEM Education and More!

By Sheri Soyka

Engage your students in science, technology, engineering, and math through real-life applications. PLT's GreenSchools! program provides a multitude of opportunities to engage students in scientific inquiry as they solve environmental issues at their school.

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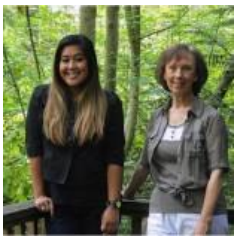
Tools



Policy Update

By Christine Cadigan

Learn about a recent success for environmental education in the Senate, and what you can do to help educate your political candidates and decision-makers on education issues that are important to you.

Literature Connections – Autumnblings

By Jaclyn Stallard

This children's book explores the colors, events, and emotions that the fall season brings. Learn more about this resource and the PLT activities it supports.

EE Resources – Fall 2012

By Jaclyn Stallard

PLT activities correlated to Common Core Standards, grants, competitions, educational websites, games, interactive maps, videos, and more!

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The Branch TOOLS FOR EDUCATORS

New Curriculum Materials, More Ideas on PLT's New GreenSchools! Website

By Al Stenstrup

One way we spent our summer here at PLT was to update PLT's GreenSchools! classroom investigations and launch a new PLT GreenSchools! website. Come take a look!

Project Learning Tree GreenSchools! provides curriculum resources, training, and grants for students and teachers to create green and healthy schools. It helps improve students' academic performance in STEM (science, technology, engineering, and math) subjects, and can even help save your school money!

- Five PLT GreenSchools! Investigations provide the tools and resources for students to investigate their school site, energy use, water, waste and recycling practices, and environmental quality. Teachers can access the materials, available for free online, by registering at www.greenschools.org.
- Our new and improved website highlights success stories from PLT GreenSchools! across the country that are implementing exciting action plans to green their schools and communities. See what other schools are doing!

What's New

PLT GreenSchools! provides a blueprint and a set of on-the-ground tools and resources for students, educators, environmental and health advocates, school board members, parents and community members to teach, learn, and engage together through environmental education, service-learning, and student leadership opportunities. It has many connections to STEM (science, technology, engineering, and math) education. (See this issue's Educator Tips article for more on STEM connections.)

As the PLT GreenSchools! program has grown over the past few years, so has the volume of information that we want to share with students, teachers, and supporters. Our challenge: how to organize all that information in the most useful way.

We hope you'll spend some time exploring the site, and check out this guide to what you'll find online. In the meantime, here are some highlights, including information about the parts of the site that require (free) registration.

My GreenSchools! Homepage

Our website, www.greenschools.org, describes the nuts and bolts about what it means to become a PLT GreenSchool!, funding and training opportunities, and examples of what other schools have accomplished.

At the heart of the PLT GreenSchools! program are hands-on, student-driven investigations in five areas: Energy, Water, School Site, Waste and Recycling, and Environmental Quality.

One thing you will notice is that we ask you to choose a user name and

password to access some parts of the site. This enables us to know which curriculum materials and resources are of most interest, and to follow up to tell you about new funding opportunities for your school, webinars, and other content.

Once you've logged in with your chosen user name and password (registration is free), you'll go to a page entitled My GreenSchools! Homepage from where you can access PLT's classroom investigations.

You can view each investigation online or download it. The investigations provide--

- Background information for educators
- Directions for Green Team leaders
- Worksheets
- Action Project ideas
- Resources
- Correlations to academic standards
- Connections to STEM-related careers
- Supporting PLT activities

You'll see specific things to measure and observe, worksheets to fill out, and guidance on how to combine your various bits of data into a school-wide analysis. We also share specific tips on how to form a Green Team of students, teachers, parents and others; how to create an action plan based on the Green Team's investigations; and how to share and celebrate your work.

PLT GreenSchools! Certification

Some schools use some of the investigations and other ideas on the site, but do not become a Certified PLT GreenSchool! Those that have done so, however, tell us it has provided them with both tangible and intangible benefits, such as—

- A way to unify students and teachers school-wide and provide a link as students move from grade to grade;
- Grants from PLT and from other sources. PLT's annual grant program has a deadline of September 30, but as funding permits, we are sometimes able to offer additional grants throughout the year. In addition, schools report that they have received grants from other sources and the certification has strengthened their proposals;
- Opportunities for students to co-present with PLT staff at local, regional, and national conferences, as well as online webinars;
- Support from the national PLT office in garnering positive attention for your school from local and social media;
- A profile on the PLT GreenSchools! website, a certificate, window stickers, and the opportunity to purchase a customized banner for a modest sum.

PLT GreenSchools! Certification is available once your Green Team has completed all five PLT GreenSchools! Investigations. The website provides the criteria and a certification reporting form that members of the Green Team can download and complete. The reporting form asks you to self-assess your completion of the investigations, and comment on any action projects implemented by students at your school. We especially want to hear about the data collected that tracks positive changes at your school.

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Your Feedback

Over the past four years PLT (in partnership with its 50-state network, the U.S. Forest Service, the Corporation for National and Community Service, and many other state and local partners) pilot-tested its GreenSchools! program at more than sixty schools around the country. Currently more than 2,000 schools are participating in the PLT GreenSchools! program—engaging an estimated 1 million students annually. Thirteen PLT GreenSchools! were among the inaugural class of Green Ribbon Schools named by the U.S. Department of Education in April.

We hope our new website provides an easy-to-navigate way for you to learn about PLT GreenSchools! and, if interested, to take the steps for your school to become one.

We welcome your comments and suggestions. Schools large and small, public and private, and for all types of learners and in all types of locations have benefited. We hope your school will, too!

Al Stenstrup is Director of Education Programs for Project Learning Tree.

Photo 1: Professional development, classroom investigations, and service-learning projects are the major components of PLT's GreenSchools! program.

Photo 2: Students use CO2 meters during a PLT GreenSchools! training in Tulsa, Oklahoma.

Photo 3: A set of five investigations enable teams of students or whole classes to examine their school's energy use, waste and recycling, water consumption, school site design and management, and environmental quality (such as indoor air quality, school transportation, and use of chemicals.)

Photo 4: Fourth grade teacher Debra Wagner and students at St. Paul Lutheran School, a Certified PLT GreenSchool! in Florida, pose with their PLT GreenSchools! banner.

Photo 5: Students at Jackson Middle School in Houston install bird boxes at their school.

News & Updates

Quick Response—Using Technology as an Entry Tool to Nature

By Joan Newkirk

For me, getting kids outside and excited about nature is paramount. Yet today's generation of children is consumed with technology. So, why not bring technology outside? Technology is an entry tool that can be used in the outdoors to make learning about the natural world exciting and fun. It keeps students engaged, and it has the capacity to answer children's questions and satisfy a child's curiosity instantly.

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Many people, parents and students included, have smart-mobile phones, are comfortable using them, and take them everywhere. Teachers can take advantage of their benefits – for example, their ease of use and the tremendous amount of information they can provide very quickly – to engage students in learning.

Last year I designed a class project that incorporated smartphone technology and encouraged collaboration between older and younger students at two nearby schools. With the help of a PLT GreenWorks! grant, my third-grade class and seventh grade students created signage along a beloved nature trail in Bath, Maine using QR Codes to access interpretive information digitally. Abbreviated from Quick Response Codes, these square bar codes are becoming increasingly common and are readable by tablets, mobile phones with a camera, and smartphones. When scanned, the QR code takes you to a website for more information.

The Sewall Woods Digital Trail

Our GreenWorks! project, called The Sewall Woods Digital Trail, incorporated learning about the natural history of a local forest, an authentic purpose for writing, and technology. It was a collaboration between the Kennebec Estuary Land Trust (KELT), KELT's Education Coordinator Becky Kolak, my third-grade class at Fisher Mitchell School, and Monica Wright's seventh-grade students from Regional School Unit 1, in Bath, Maine. Throughout the project the students worked in groups, connecting and interacting with each other and their environment.

The section of Sewall Woods that we focused on is part of a popular five-mile-long trail that winds its way through Bath. The students created a digital interpretative guide—the first of its kind in the region!—that can be accessed online or on the trail by QR (Quick Response) technology, activated by smart-mobile phones.

What the Students Did

During the 2011–2012 school year, the students traveled to the Sewall Woods property on four occasions. They worked with partners to record observations at eight interpretive spots on the trail. The third-grade science curriculum focuses on the forest community, therefore the information at each stop emphasizes interesting trees and forest features. Much of the students' knowledge about trees was obtained through classroom lessons from PLT resources (see below for the activities we used).

Small groups of students were assigned to a location along the trail, where they collected their observations in a special binder. They needed to determine what they thought was important for a visitor to notice at each location. They continued to research their topics back at

school with assistance from the seventh graders and members of the Land Trust and then wrote brief interpretative messages to be posted on a web page.

The QR or Quick Response code is the link between the sign along the trail and the website. Each QR code is unique. When a QR bar code is scanned using a mobile phone camera, a QR "app" takes the user to a specific website. Our QR codes direct participants to a page that will be connected to the school's and the KELT's websites. (Note that many free online sites generate QR codes in a matter of seconds—you key in a URL and a QR image is created that you can then use on signs, brochures, or anyplace else you would like.)

PLT's GreenWorks! grant was used in part to lease the technology for a few months. In addition to having devices on hand for the students to try out during development, parents and community members tested the QR codes during a trail opening celebration in June. The grant also helped fund the signs and field supplies. On opening day, visitors walked to the eight different interpretive signs to scan the QR codes, and students were at each spot ready to answer questions and share research.

PLT Tie-Ins

I used these activities from PLT's PreK-8 guide that fit with what we were trying to accomplish:

Introductory Period

#87 Earth Manners
#61 The Closer You Look
#68 Name That Tree
#21 Adopt a Tree

Fall Lessons

#64 Looking at Leaves
#78 Signs of Fall
#22 Trees as Habitats

Spring Lessons

#22 Trees as Habitats
(we revisited this lesson in a different season)
#23 The Fallen Log
#65 Bursting Buds
#30 Three Cheers for Trees!
#27 Every Tree for Itself
#32 A Forest of Many Uses

Tips to Share from Fisher Mitchell School
This project involved not just kids learning about something, but kids teaching others and together creating something that will educate others. Here are some suggestions – five powerful learning tools – that I would like to pass on to other educators:

1. **Technology**, in this case QR codes, create more interest and accessability to the trail or ecological concept.
2. **Using a local natural area** encourages students to appreciate a natural gem in their own "backyard."
3. Older students are **inspiring role models** to younger students.
4. Selecting **PLT lessons** that connect with objectives enriched the learning experience.
5. **Collaboration**, in our case between the local land trust and different age students, is a powerful learning tool.

Joan Newkirk is a third grade teacher at Fisher Mitchell School in Bath, Maine. Photos are courtesy of Becky Kolak, Kennebec Estuary Land Trust.

From Youngest to Oldest, Great Ideas for a Nature Trail

By Christine Mathews

"I LOVE seeing kids outside!" That's what a Hillside Elementary parent told me one day last June when 75 children and parents built a nature trail around the perimeter of the school grounds.

That parent happens to be a professional landscaper, so he brought both skills and enthusiasm to the project. With students, school staff, and parents contributing both skills and enthusiasm, we were able to plan, fund, create, and dedicate the nature trail at our school of about 350 children in Niskayuna, a suburb of Schenectady, New York—all in one school year.

The project began with my kindergarten class and Christine O'Reilly's fifth-grade class just before the start of the 2011-2012 school year. Even before we wrote grants or had approval for constructing a nature trail, we were committed to establishing a strong relationship with our classes and finding ways for the older children to mentor the younger ones.

Mentors and Mentees

In September, we paired students based on strengths and needs as indicated by classroom observation. When we gathered together as a group, our goal was simple: to establish a strong community of learners. Meeting one or two times a month enhanced the relationships among our students. They would get together to work together; for instance, they co-created books about friendship where each described what it

meant to be a friend. By January, we felt the mentors and mentees had developed relationships that would help them not only with the nature trail, but also in other aspects of school.

In January, we received word that we had received funding from a PLT GreenWorks! grant, the Niskayuna Community Foundation, and Hillside's PTO. One of our main objectives was to allow students to establish a vision for the trail, their goals and ways to make it a reality.

Children learn best by seeing and doing. In order to create a nature trail, we knew that observation and experience with seeing a variety of trails would be crucial. Yet, attending several field trips during a school day would be challenging to organize and approve. Instead, we organized weekend or after-school hikes to see other nature trails nearby. Parents were involved by bringing their children to the events and stayed to participate. As a community of learners, our students took pictures and recorded their observations to show those who could not attend and also so the children could discuss what they had seen back in the classroom.

After a hike, the kindergarteners would talk during Morning Meeting about what they noticed along the trail, such as built facilities like benches or playgrounds, trees, and water features. Additionally, we started to establish a common knowledge base using books like *Along the Nature Trail* and *Hiding in the Woods*.

Meanwhile, the fifth graders looked at the "big picture" of our terrain. They drew a land map and determined the sunny and shady areas, the wet and dry spots, and other characteristics for trail construction and planting.

Hillside Elementary is nestled in a neighborhood. There are adjacent woods, but they are not on school property, so the children had to plan a trail in our more open area. Yet, they also realized that if they planted trees as part of the project, the trail eventually *would* be in a wooded area.

They also had to figure out what we could do within our budget. For example, they were enthusiastic about building a pond until they learned that this was not feasible with the available funds. In the end, that lesson was about prioritizing and determining what was most important to the initial construction of a trail.

Identifying Priorities

Eventually, they identified four top priorities: ground cover for the trail, a logo and signage, trees, and a trail guide.

Other grades also became involved in the project. For example, two other kindergarten classes created a rainbow garden and the third graders created a butterfly garden. Our librarian, Debbie Urbriaco, helped guide students to do research with each grade level and also connected the activities to the science curriculum. The school's

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head custodian, Donn Armstrong, provided practical knowledge. For example, he recommended stone dust as a ground cover, and he warned against a pumpkin patch for fear of vandalism.

The surrounding neighborhood also needed to know about the plan. Christine O'Reilly's fifth grade class created a brochure and, with parental supervision, went door to door to nearby houses. They did not get universal support and we had to make a few revisions to the plan as a result. Again, a good lesson.

Construction and Dedication Days

After months of planning, researching and confirming plans, our big day had finally arrived in early June. Extensive planning for the construction day took place beforehand. Students, their parents and families were invited to participate. We organized people into small groups based on the interests they indicated on a RSVP form (laying ground cover, posting signs, planting trees, etc.).

Within each group, there was a parent who was considered the "team leader." This person would funnel the questions to Christine O'Reilly, Debbie Ubriaco, and myself. Additionally, groups were assigned to a specific area. Although many parents came directly to one of the teachers instead of going to their team leader, we were able to complete the project in two hours, instead of the four or five that we had anticipated! What was most inspiring that day, was the way the community came together to make our students' dream a reality.

Several weeks later, Hillside Elementary celebrated the opening of the trail. We invited Tom Shimalla, the New York PLT coordinator, to give a keynote speech, and, of course, everyone had the opportunity to walk on the trail. We also invited the media, and articles with photographs appeared in two local newspapers.

Tips for Teachers

1. **Pairing older and younger students provides learning experiences for them both.** However, the relationships take time to develop, and doing specific activities together, such as our friendship books, really helps.

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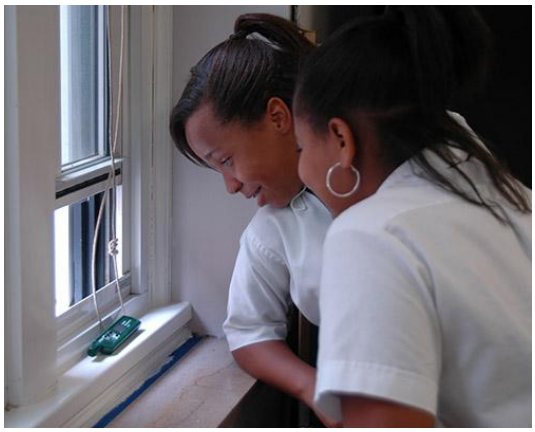
2. **To involve other grades or classes, make it as easy for them as possible.** For example, provide some funding or suggest specific options they can choose to do, such as the butterfly garden created by the school's third-graders.
3. **Get support from the principal.** Our principal believed in us teachers and in the project. She encouraged us to take risks.
4. **Ask parents for help.** In addition to our parent who was a landscaper, another parent was a carpenter who could help with the signage. A parent who could not participate in the construction was more than willing to organize the refreshments.
5. **Teach kids about trade-offs and future action.** They could not accomplish all they would have liked, but they learned to prioritize. They are now seeking funding for benches and other features.
6. **Ask local businesses for donations.** Many businesses are willing to donate and all it takes is a letter from your students explaining why their project is worthwhile.

Christine Mathews is a kindergarten teacher at Hillside Elementary School in Niskayuna, New York. She is a new PLT trained educator who is looking to connect PLT activities with the school's new nature trail.

Educator Tips

PLT's Updated GreenSchools! Investigations Focus on STEM



Education and More!

By Sheri Soyka

PLT's revised GreenSchools! Investigations bolster science, technology, engineering, and math (STEM) education while promoting sustainable schools. They provide students with opportunities to actively engage in scientific inquiry as they solve real-world environmental issues at their school. The five investigations in Energy, Water, School Site, Waste and Recycling, and Environmental Quality are available for immediate download at www.greenschools.org.

STEM Connections

Following are a few highlights of how two of PLT's GreenSchools! Investigations, School Site and Energy, support STEM education:

Science

- **School Site Investigation**: students collect data on tree health, record observations on plants and animals, learn about invasive species, and determine how improvements to the school grounds could be made.

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- **Energy Investigation**: students learn about renewable and nonrenewable sources of energy and determine the main sources of energy for their school using a free online tool.

Technology

- **School Site Investigation**: students use satellite images, Google maps, and other technology to map their school site and determine tree canopy cover. Students also use a free online tree-benefits calculator to determine the value of trees on their school grounds.
- **Energy Investigation**: students use a variety of monitoring devices (such as infrared thermometers, watt meters, and light meters) to analyze their school's energy use. In addition, students learn how technology can be used to conserve energy.

Engineering

- **School Site Investigation**: students learn about pervious and impervious ground cover, determine if the amount of pervious ground cover on their school site should be increased, and suggest design solutions to increase the amount of pervious ground cover.
- **Energy Investigation**: students learn about different types of lighting, use a light meter to take readings in rooms, and then compare their results to national lighting standards for buildings.

Math

- **School Site**: students measure and mark plots; determine the percentage of impervious ground cover on the school site; estimate, measure, and calculate the diameter and height of trees; and calculate the percentage of tree canopy cover using the dot grid method.
- **Energy Investigation**: students use a watt meter to determine the kilowatt-hours used by various appliances. They use this information to calculate the cost per year of running those appliances. Students also use a thermometer to take room temperatures at various locations and then calculate averages.

Monitoring Equipment
PLT's GreenSchools Investigations suggest the use of monitoring equipment and other tools to aid students with data collection. Information on where to borrow or purchase these items is provided in each of the investigations. Although the use of these tools is not required to complete the investigations, they do help make the investigation more meaningful to students and

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allow them to use forms of technology that they might not otherwise be exposed to.

STEM Careers
Each investigation includes a section on science, technology, engineering, and math related careers. For example, in the Water Investigation, students discover that a variety of professionals are needed to maintain safe drinking water supplies (such as civil engineers, hydrologists, water chemistry scientists, water resources planners, water rights law and policy specialists, and water treatment technicians).

New Framework for K-12 Science Education
PLT's GreenSchools! Investigations support the new *Framework for K-12 Science Education* developed by the National Research Council of the National Academy of Sciences and released in July 2011. For example, the investigations strongly align with the following Science and Engineering Practices as defined in the Framework:

- Asking questions and defining problems
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations and designing solutions
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

The GreenSchools! Investigations also support the Framework's emphasis on understanding the human-built world and integrating the learning of science, engineering, and technology across disciplines.

What's Coming Up

The Framework is now being used as the foundation for new K-12 science education standards to replace standards issued more than a decade ago. The *Next Generation Science Standards* will be correlated to the PLT GreenSchools! Investigations once they are released. In addition, a correlation of PLT's GreenSchools! Investigations to the Common Core Standards for Mathematics is in the works. Check the correlations section of the PLT website for new updates!

GreenSchools! Training and Resources
PLT offers many resources to help schools get started with the investigations including:

- A series of webinars highlighting PLT's GreenSchools! Investigations that bring together student presenters with expert panelists who share their experience and resources
- Training in local communities conducted by PLT facilitators (for a list of upcoming workshops contact your PLT state coordinator)

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- GreenWorks! grants to assist with GreenSchools! service-learning projects
- A blog where educators and students can share information and success stories.

Here's what Denise Scribner, an Ecology/Biology Teacher at Eisenhower High School in Kansas had to say about GreenSchools! training, "PLT is a low-cost professional development program that provides me with the resources I need to bring my students up. I like that it's interdisciplinary. PLT GreenSchools! builds math and writing skills, and helps build awareness of social issues and the impacts of government policies. It prepares them to be informed consumers and voters."

Get Started!
Why wait? Go to www.greenschools.org and download the investigations today.

Sheri Soyka provides research, writing, and editing services to environmental education and science organizations nationwide. Previously, Sheri served as the Associate Director for Project Learning Tree.

Tools

Policy Update

By Christine Cadigan

As you may remember, the 2013 President's budget and House budget appropriators completely eliminated funding for the National Environmental Education Act (NEEA)—a program that funds the Environmental Protection Agency's Office of Environmental Education and other state-driven environmental education efforts. In response to this news, we worked with our environmental education partners to reach out to these decision-makers and better explain the importance of this program for student learning.

We also worked with our partners on Capitol Hill on a Senate strategy to restore funding, which was thankfully included in the Senate Interior Appropriations draft released on September 25th—a huge step forward for continuing NEEA. That being said, these budget issues won't be finalized until next March when the current Continuing Resolution expires and Congress is forced to act. Furthermore, as you're all well aware, Congress has officially left Washington D.C. to hit the campaign trail—meaning we don't expect to see anything move on the Hill before the election.

Yet now is a good time to get the education issues you care about in front of all your political candidates. Consider taking this opportunity to educate them about the value of outdoor learning, how environmental education can improve student achievement, and the importance of helping students understand the environmental issues that impact our economy, health, and national security. Here are some ideas of what you can do:

- Visit candidates' campaign offices.
- Write a Letter to the Editor to your local paper outlining your EE priorities.
- Invite them to tour your school or nature center for first-hand experience.

Educate your candidates and decision-makers about how PLT and environmental education prepares students for the future!

To learn more about how to communicate with your candidates, check out a recording of our advocacy webinar. If you need any help reaching out, please contact me at ccadigan@forestfoundation.org.

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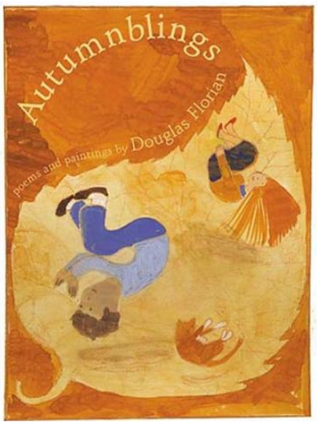
Photo: Jane Ulrich (pictured right), a 4th grade teacher at Sunny Hills Elementary in Sammamish, Washington, shows Jacques Imperial (pictured left), Constituent Services Liaison for Congressman Dave Reichert, the outdoor classrooms that Jane says motivate students to learn, help improve test scores, and encourage stewardship of natural spaces.

Literature Connections -- Autumnblings

By Jaclyn Stallard



Ages 4-8. ISBN: 0060092785

Published by Greenwillow Books, 2003

Authored by Douglas Florian

What do you like about Autumn?

- Flying kites?
- Apple picking?
- Trick or treat?
- Frisbee flicking?

This children's book explores the colors, events, and emotions that the fall season brings, and it serves as a special treat for those of us who are not fortunate enough to witness the most dramatic effects of the changing seasons. Using simple rhyme schemes; invented words, such as "autumnatically," "owlphabet," and "fallicopters" (maple seeds); and descriptive spellings, this book from Florian's seasonal series demonstrates that reading and writing can be lots of fun.

Try it in conjunction with the following PLT activities:

Environmental Experiences for Early Childhood

#1 The Shape of Things
#5 Signs of Fall
#8 Adopt a Tree

PreK-8 Environmental Education Activity Guide

#5 Poet Tree
#21 Adopt a Tree
#61 The Closer You Look
#64 Looking at Leaves
#78 Signs of Fall

EE Resources - Fall 2012

By Jaclyn Stallard

Common Core - PLT Correlations to the New Standards are Complete!

PLT's PreK-8 Activity Guide has been correlated to the Common Core standards for both English Language Arts and Mathematics. The PLT-Common Core standards correlations can be accessed on the PLT website. We have also developed a reverse correlation organized by PLT activity (rather than Common Core standard) for Common Core correlations to Mathematics … and the English Language Arts are soon to come. Please check the correlations section of the PLT website for new updates! We also continue to track the development of the Next Generation Science Standards and plan to correlate PLT's activities to these new science standards upon their release.

Preparing for Next Generation Science Standards

The National Science Teachers Association (NSTA) is offering a series of eight free webinars for educators to better understand the practices in the *Framework for K-12 Science Education*, the foundation for the upcoming Next Generation Science Standards.

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Recordings of the first three webinars in the series (*Asking Questions and Defining Problems*, *Developing and Using Models*and *Planning and Carrying Out Investigations*) are available online for those who missed them. Upcoming webinars are:

- *Analyzing and Interpreting Data*, October 23, 2012
- *Using Mathematics and Computational Thinking*, November 6, 2012
- *Constructing Explanations and Designing Solutions*, November 20, 2012
- *Engaging in Argument from Evidence*, December 4, 2012
- *Obtaining, Evaluating, and Communicating Information*, December 18, 2012

Each webinar is accessible through NSTA's archives after its initial presentation and can be considered as a stand-alone event or as a part of the series. Visit the NSTA Learning Center for more information and to register.

The Lorax is Now on DVD
Released in movie theaters earlier this year, *Dr. Seuss' The Lorax* is now available for rent and purchase on DVD. National PLT partnered with USDA Forest Service to assemble a PLT activity packet of lesson plans for educators to use in conjunction with the film to teach about the inherent value of forests and the importance of sustainable forest management. Universal Studios has recently redesigned the PLT activities so that they now feature graphics and imagery from *The Lorax* film. The six redesigned PLT activities are featured on the Forest Service's Discover the Forest website, as well as the PLT homepage under "What's New".

American Honda Foundation Grants
Deadline: November 1, 2012
Honda awards grants of up to $75,000 to youth education programs focused on STEM and the environment. Programs should embody the characteristics the company holds dear, "imaginative, creative, youthful, forward-thinking, scientific, humanistic, and innovative." Public schools, public school districts, and nonprofit organizations are eligible.

Intel Community Grants
Deadline: November 1, 2012
Intel Community Grants support schools and communities where Intel is located, with a focus on education, the environment, and the community. Of particular interest are K-12 STEM programs and recycling and resource conservation projects. Grants are intended for publicly funded educational institutions and nonprofit organizations; awards of between $5,000 and $10,000 are available.

The Lawrence Foundation Grants
Deadline: November 1, 2012
The Lawrence Foundation provides grants that support the environment, human services, and disaster relief. Public schools, libraries, and nonprofit organizations may apply. Both program and operating grants are available.

2013 Educator Academy in the Amazon Rainforest ~ July 2-11, 2013
Join Amazon Rainforest Workshops / Environmental Expeditions in Peru and investigate the Amazon rainforest using best practice 21st century instructional models such as inquiry-based exploration, STEM education, sustainability science, and more. Return with a new set of skills and tools that will enrich your teaching and deepen student understanding. PD hours, graduate credit, and scholarships are available.

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The Academy is a cross-curricular professional development workshop for educators to use and learn innovative instructional approaches and protocols while exploring one of the world's most important natural resources - the Amazon Rainforest. Participants will complete a Project Learning Tree *Forests of the World* workshop and will also complete GLOBE and Project Noah activities. You'll visit several Amazon communities and schools and complete a service-learning project. Learn more, and contact Christa Dillabaugh at christa@amazonworkshops.com or 1-800-431-3634 for additional information.

Teaching About Climate and Energy
CLEAN (Climate Literacy & Energy Awarness Network) has collected (and reviewed) hundreds of activities that teach about climate and energy. The activities are searchable by grade levels, and by linkages to the Climate Literacy Principles as well as Excellence in Environmental Education: Guidelines for Learning (K-12)

Parade of Games in PowerPoint
The Parade of Games website offers templates for more than 16 education games – such as Bingo, Jeopardy, and Who Wants to Be a Millionaire – that K-12 teachers can customize and use to support learning and review content. The website includes a matrix for assessing each game for purpose and use. Try it with a few different PLT activities and please share any games you create with Jackie (jstallard@plt.org) for posting on the PLT website!

You-Tube Dendrology
(resource for PLT's PreK-8 activities "The Closer You Look," "Adopt a Tree," and "Name that Tree," and PLT's Focus on Forests' secondary activity "Monitoring Forest Health")
Dr. Don Leopold, State University of New York's College of Environmental Science and Forestry professor, has identified a total of 135 tree species on You-Tube. These 2-minute, high definition videos briefly summarize how to identify each tree species, its ecological characteristics and importance, and communicate fun facts. While the list of native and non-native tree species is familiar to Northeastern landscapes, many western U.S. tree species are also covered. These vignettes are also all available for free on i-Tunes.

Plant Heroes
(resource for PLT's PreK-8 activity "Invasive Species," and PLT's secondary activities: Biodiversity's "Global Invaders", and Focus on Forests' "Forest Invaders")
The Sentinel Plant Network helps protect plants by preventing the spread of bad bugs and fungi. To help their mission, they assembled a team of "Plant Heroes" to detect and combat bugs and diseases that harm plants and ecosystem health, paying special attention to the Emerald Ash Borer, Asian Longhorned Beetle, Redbay Ambrosia Beetle, and Ramorum Blight. Using games, comics, printables, and field guides, the Plant Heroes website allows students to learn more about pest and disease identification and how to report evidence of them.

Endangered Species Interactive Map
(resource for PLT's PreK-8 activities "Web of Life," "Life on the Edge," "Habitat Pen Pals," "Charting Diversity," as well as PLT's Focus on Forests' secondary activity "Tough Choices")
The US Fish and Wildlife Service has launched a web-based interactive map with information about endangered species success in every state: stories of species making strides towards recovery, audio interviews and

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podcasts with biologists about on-the-ground endangered species conservation, and more.

Return to the Forest Where We Live
(resource for PLT's PreK-8 activities "Then and Now" and "Planning the Ideal Community" as well as PLT's secondary activities: Focus on Forests' "Monitoring Forest Health" and "Forest to Faucet" and Places We Live's "Mapping Your Community Through Time" and "Green Space")
This 3-minute video takes a look at the devastation of the urban forests in New Orleans and the Mississippi Gulf Coast caused by Hurricane Katrina. More than 70% of the trees in New Orleans were damaged by the storm and the flooding that followed. Can you imagine a city without trees? What changes result?

Earth Preservers Website
(resource for many PLT PreK-8 Guide activities!)
Earth Preservers is an environmental news and information website for students that relates the environment to a wide-range of current events and topics. Resources include short films and documentaries, interactive quizzes, classroom resources, poll questions, and a monthly newsletter.

How Do Solar Panels Work?
(resource for PLT's PreK-8 activities "Renewable or Not" and "Energy Sleuths" and PLT's GreenSchools! program)
In this digital interactive from the Public Broadcasting Service's (PBS) *NOVA* Education, users see how solar panels work to convert sunlight into electricity. Links to related PBS *NOVA* videos and programs are also included.

Greenhouse Gardening Guide
(resource for PLT's GreenWorks! and GreenSchools! programs)
This blog offers information about the construction, use, and management of greenhouses. The guidelines found here offer a mix of useful tips about greenhouse gardening along with background information on the topic.

Teaching the Food System
(resource for PLT's PreK-8 activites "A Few of My Favorite Things," "Pass the Plants Please," and "A Look at Lifestyles")
Resources from The Johns Hopkins Center for a Livable Future introduces students to food-system topics and issues. Explore questions such as: What are the strengths and weaknesses of local food systems? How is our food supply dependent on ecosystems? Find slides, handouts, and other supplemental materials on their Teaching the Food System website.

International Art and Poetry Contest
Every year, in affiliation with the Library of Congress Center for the Book, River of Words sponsors a free international poetry and art contest on the theme of watersheds. The contest is open to students ages 5 through 19 anywhere in the world. Deaf students may submit poems in American Sign Language on DVDs. Entries are accepted throughout the year. (Enter now!) Winners are announced each April at a ceremony at the San Francisco Main Library. Grand Prize and international winners receive an all-expense-paid trip to Washington, D.C., to attend the awards ceremony at the Library of Congress.

Nature Play at Home:
A Guide for Boosting Children's Healthy Development and Creativity
(resource for PLT's Environmental Experiences for Early Childhood)
This 35-page PDF shows parents and

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caregivers how they can turn an uninspired outdoor environment into an exciting play area that will have kids racing to “Go outside and play!” Produced by the National Wildlife Federation and the Natural Learning Initiative, this is a helpful guide for creating enticing outdoor play spaces as close as your backyard, patio, or balcony.