Litzsinger Road Ecology Center

Community Newsletter

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New Year's Resolutions

By Bob Coulter

It's that time of year again…What resolutions are you making for 2010? As your partners in place-based education, we'd like to make a few suggestions for you to consider:

- Read a good book that will extend your practice. Two recent favorites of mine are *Making Learning Whole* by David Perkins and *5 Minds for the Future* by Howard Gardner. Both of these books help to give some perspective for a school climate that is all too often obsessed with narrow skill sets and tests that measure only a small portion of what it means to be educated. Perkins uses a game metaphor to help teachers think about kids "playing the whole game" whether that be math, science, or any other field. How much of math is lost when we focus only on arithmetic skills? Gardner, famous for his earlier work with multiple intelligences, helps us to focus on broader capacities such as integrating different perspectives and creating original ideas.

- Sign up for a professional development workshop. We'll have more details in next month's newsletter, but we will be offering our *Sustainable Schoolyards* workshop June 14–18, our *Mapping Your Community* workshop on June 21–25, and an *Introduction to St. Louis Ecology* July 12–16. *Sustainable Schoolyards* is for teams of teachers looking to engage their students in developing natural habitats on their school grounds, and *Mapping Your Community* focuses on use of computer mapping tools to investigate local issues.

If neither of these strike you, perhaps you'd like to take up a new interest to share with your kids. Bird watching? Stream monitoring? If you have an environmental interest, we can help you find a place to get started. Our experience and a good bit of research literature shows that your passions and interests travel well to your kids, helping them develop their own identities.

Happy New Year!

Inside this issue:

Upcoming LREC Events:

Volunteer Enrichment: Navigating Urban Streams Revisited
January 25, 12:30–2:30pm. The session will include a stream table review. Call (314)540-4068 or email martha@litzsinger.org to RSVP.

Deer Creek Water Testing
January 28, 9am–12pm. Meet at Glass House. Contact Danelle with any questions: danelle@litzsinger.org.

Upcoming Opportunities:

Native Plant School: Native Small Flowering Trees & Shrubs, Part 1
January 14, 1–4pm. At Shaw Nature Reserve. $12 ($8 for Garden Members). Reserve your place by calling (636)451-3512.

Missouri Department of Conservation Eagle Days
January 16 & 17, 9am–3pm. At Old Chain of Rocks Bridge (south of I-270 off Riverview Drive). Events include live eagle programs, exhibits, activities, guides with spotting scopes, etc. Call (314)877-1309 for more information.

Last Chance to Drop Off Entries for "Power of Plants" Contest
January 31, 10am–4pm. At the Garden's Commerce Bank Center for Science Education. Individuals and groups in kindergarten through 12th grades are challenged to pick a plant that does great things and tell its tale through a creative two- or three- dimensional work of art. Visit www.mobot.org/power for complete contest information.

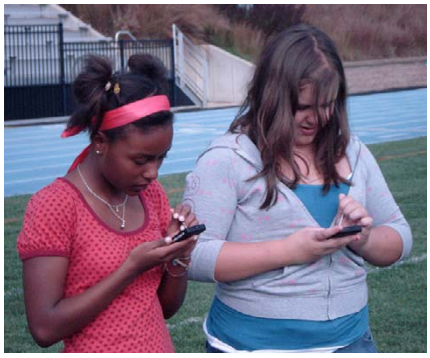
CSI: Community Science Investigators

By Deanna Lawlor

How many of us have thought at some point about how we could use our skills to make a difference in the world in which we live? Knowing the audience that reads this newsletter, it is probably all of you. I think about the LREC volunteers, teachers, students, and staff and realize that in many ways we are all reaching out to make the world a little better in some way. We all know how rewarding this can be, and for kids having opportunities to take what they are learning and apply that knowledge to make a change in their own community can be an enriching and very meaningful part of their education.

Students from Christ the King School work together to compile community data. Photo by Deanna Lawlor.

For almost a year now I've been working on an NSF (National Science Foundation) grant funded project with Bob and one of our wonderful volunteers, Leo Ebel. This project, called Community Science Investigators (CSI), focuses on middle school students who meet once a week after school. Through this three-year program, a partnership between the Missouri Botanical Garden and the Massachusetts Institute of Technology (MIT), middle school students are introduced to technologies that can be used in real-life situations as they do community outreach through service learning projects. Every week I work with local middle school teachers and students in this after-school program. This year, three St. Louis schools and three Boston schools are involved.



Two Maplewood-Richmond Heights students use handheld computers. Photo by Deanna Lawlor.

Each school is learning several technologies. One of these is MITAR, a handheld computer game developed by MIT. This technology allows students and teachers to create computer games. These computer games take them out into the community, and combine games with real-life situations to inform and educate their audience. We also use professional-grade Geographic Information Systems (GIS) software for analyzing spatial data. Users are able to customize maps to their own needs. Students and teachers can map and study anything from land elevation to population density.

See **CSI**, page 5

Glass House Quiz: Snow

By Danelle Haake and Deanna Lawlor

We have been having discussions about snow lately at the Glass House. Some of us eagerly await the first snow of the season while others hope that first accumulation skips a year. Thinking about winter and snow often raises questions about our area's history, the composition of snow, and the organisms that live here. We hope that you enjoy contemplating these questions as we did, maybe in front of the fire with a cup of tea.

Ice on grasses. Photo by Eddie Jones.

References:

Halfpenny, James and Ozanne, Roy. 1989. *Winter: An Ecological Handbook.* Johnson Publishing Company; Boulder, CO.

Marchand, Peter. 1996. *Life in the Cold: An Introduction to Winter Ecology.* University Press of New England; Hanover, NH.

1. When was the earliest recorded snowfall of the season of 0.1 inches or more in St. Louis?

   A) October 20, 1916 B) October 27, 1895

   C) November 4, 1938 D) November 8, 1993

2. When was the latest recorded snowfall of the season?

   A) March 10, 1973 B) March 24, 1922

   C) April 6, 1889 D) April 24, 1910

3. Snow often behaves like water in slow motion. An example of this is when you observe snow curling under the edge of a roofline. We refer to this movement without breaking as *plastic* or *viscous* behavior. Why might this behavior be helpful to small animals?

4. How do snowflakes form?

5. Have you ever thought about frogs and winter? Take our cute land-hibernating spring peeper *(Pseudacris crucifer)* and wood frog *(Rana sylvatica)* for instance. How do they survive?

See **Quiz Answers**, page 4

The Litzsinger Daily News?

By Eddie Jones

In Thomas L. Friedman's August 23rd *New York Times* column, "Connecting Nature's Dots" (http://www.nytimes.com/2009/08/23/opinion/23friedman.html), he introduces us to the "publisher" and the "reader" of the news in Botswana's Okavango Delta. On a recent visit to this land-locked south African nation, Friedman noted that "it is not uncommon for a guide to lean out of his jeep, study the animal and insect tracks, and pronounce that he's 'reading the morning news'." So, as he further states, this news is "published on the roads—literally."

Friedman's local guide, who was relating the local "daily news" to him, suggested that "If you spend enough time in nature and allow yourself to slow down sufficiently to let your senses work, then through exposure and practice, you will start to sense the meanings in the sand, the grasses, the bushes, the trees, the movement of the breezes, the thickness of the air, the sounds of the creatures and the habits of the animals with which you are sharing that space."

In his August 24th *St. Louis Post-Dispatch* column, Bill McClellan made some other observations regarding our ability to "read" signs of nature. He recalls a story about an island village off the coast of Sumatra that suffered no casualties from the 2004 tsunami. The reason? The villagers hurried to higher ground shortly before their village was destroyed. Somehow, they anticipated the catastrophe that took the high-tech world by surprise. How did they do that? An anthropologist who had lived with the tribe reported that the tribal people have a keen sense of world around them. He reported: "They can tell the depth of the water by the feel of their paddles as they row." McClellan closes his column by reminding that us that for millennia, sailors used the stars to determine their location at sea.

How many of us can read the stars or any of the other signs of nature that are clamoring for our attention as we reach for our cell phones and program our GPS systems? Are we destined to a life of nature illiteracy? Or is it just possible that, as we go outside with our school children and take the time to observe natural objects and events with them, that we will awaken some of our latent abilities to "read" nature? Our subscription to the "daily news" begins today: go outside.

Quiz Answers, from page 3

1. A) October 20, 1916
2. D) April 24, 1910
3. Snow that settles on rocks or logs gradually flows off the side to the ground. This will often leave a small hollow cavity beside the rock or log that small animals can use to travel while protected from the outside environment.
4. Snowflakes are ice crystals that form when water vapor freezes around a particle called a nucleating agent. The nucleating agent is usually a tiny piece of soil that has been carried into the atmosphere by wind. You could say that a snowflake is dressed-up dirt!
5. These frogs actually hibernate under leaf litter. Because they often experience subfreezing temperatures, have water permeable skin, and are cold blooded, they actually FREEZE! When temperatures drop to the point where ice begins to form in the frog, its body produces an immense amount of glucose, making the frog severely diabetic. The frog's heartbeat rate doubles to pump the glucose through the body. Eventually the heartbeat rate slows to a complete stop. The frog stops breathing and is only kept alive by anaerobic metabolism of its energy stores and the glucose. In spring, within an hour after thawing, the heart starts again, and within six hours the heartbeat is back to normal.

CSI, from page 2

Both of these technologies have future career opportunities, and in this program are immediately applied to real-life situations in the form of service learning. Service learning allows students and teachers to take what they are learning and apply this knowledge to make positive changes in their communities.

One of the schools with which I'm working, Marian Middle School, has decided to focus on recycling in their school and surrounding community. The participants have spent the first part of the school year splitting their time between learning new technologies and learning about the importance of recycling.

As they come back from their winter break in January, the students will apply their new technology skills to finalize an electronic survey for their school community—an effort to learn what other students and teachers know and feel about recycling. At their first session in January, the students will be meeting with a representative from a company that supplies dumpsters to schools for single stream recycling. The students plan to start a school recycling program and then extend it out into the broader community, allowing community members to use the school as a recycling drop off point.

Marian Middle School students also have their first MITAR games almost ready for testing on the handhelds. They will soon be thinking about how they can use their new game building skills to inform their teachers and school peers about the importance of recycling.

The students have also been exploring roles for the GIS program, and plan to use the mapping program to identify other local recycling drop off points, and to explore the community's demographics and land use. This group is well on its way to learning about these two technologies and applying their new skills to make a difference in their community.

This is only one example of some of the things these middle schools are doing. Each school will be working the rest of the year on their own unique projects, and they will all be participating in two weeks of intensive work this summer to continue to apply their new-found technology skills in meaningful ways.

LREC reaches far beyond its 34 acres to make a difference locally, and CSI is one of the programs that make this possible. Not only does this program touch the teachers and students who participate in it, but it also touches the communities in which these participants live. I look forward to keeping you updated on the impact these schools are making in their schools and communities.

Deanna Lawlor works with students at Marian Middle School. Photo by Stephanie Airaghi.