

# Litzsinger Road Ecology Center

## COMMUNITY NEWSLETTER

www.litzsinger.org

May 2013

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*Kids explore Deer Creek during Spring Break Nature Camp. Learn more on page 4. Photo by Eddie Jones.*



## Change by How Much?

*by Bob Coulter*

Like many of you, the education staff here at Litzsinger Road Ecology Center is working to understand the challenges and opportunities provided by the new Common Core standards in math and language, and the “Next Generation” science standards. As part of that effort, I’ve been reading *Sensible Mathematics* by Steve Leinwand, which focused on the implications of the Common Core. As part of his recommendations, he cautions administrators that it’s unfair to expect teachers to change by more than ten percent a year. But...he also challenges teachers by asserting that it’s unprofessional for teachers to change by less than ten percent. Leaving aside the specific number, the underlying premise is undoubtedly true: We need to grow, but we can’t change everything all at once.

As you move toward summer and look forward to relaxing and recharging, be sure to include some time for your professional growth. Aside from the formal learning opportunities through workshops on effective outdoor learning and sustainable schoolyards, we’re more than willing to have one-to-one or small group meetings to focus on what’s

important for you and your work. As you build your plans for field study, where will you be growing?

*P.S. For those who are curious, I’m working on my ten percent as I finish up a civic ecology course I’ve been participating in, and start one on the philosophy of science that will run for the next couple of months. ✎*

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THE LITZSINGER ROAD ECOLOGY CENTER COMMUNITY  
NEWSLETTER IS GOING ON SUMMER HIATUS.  
LOOK FOR OUR NEXT ISSUE IN SEPTEMBER 2013.



# LREC SCRAPBOOK

Written by a Brentwood Early Childhood Center teacher Rachel Beard-Curran about her trip with preschoolers to LREC, taken with permission from her “journal” to the students’ parents:

April 22, 2013

## What a walk in the woods can bring you...



**GROSS MOTOR PLANNING:** Climbing trees is such an amazing skill for kids. It requires motor planning, balance, strength, impulse control, and for these little souls to be brave. This morning we played on the jungle gym nature left us – a giant fallen tree. It was an amazing way to spend Earth Day!



**LANGUAGE SKILLS:** Explaining their thinking to peers is a big part of what we do on these field trips. It’s a big part of what we do in life. The excitement of finding a skull is just one opportunity to do just that!



**CURIOSITY AND QUESTIONING:** These are both wonderful traits that good thinkers possess. It is something we work very hard to instill in these little ones --- to ask questions about the world around them and then try to seek answers. “Why would bugs like to hide under this board?”



**OBSERVATION:** Good thinkers also take time to observe. What do you see? What do you hear? What can you learn when you take a minute to just watch? No small feat for preschoolers!



# Glass House Quiz: Nests

by Danelle Haake and Deanna English

Recently here at LREC, we've seen many birds fluttering about with bits of plant material in their beaks. This behavior can mean only one thing: the birds are nesting.

We have also learned about a citizen science opportunity with the Cornell Lab of Ornithology called "Nest Watch." To learn more about the program, visit <http://www.nestwatch.org>. In the meantime, take our quiz to explore the world of homemaking—bird style.

- 1. Of the birds we are likely to see in the St. Louis area, who makes nests, the males or the females?**
  - a) Almost always the males
  - b) Always the females
  - c) Both work together
  - d) It really depends on the species
- 2. Which of the following building materials are NOT commonly found in nests?**
  - a) Moss
  - b) Flowers
  - c) Feathers
  - d) Mud

- 3. Different birds place their nests in different locations. Which of these birds likes to nest in tree cavities (holes in dead limbs or trees)?**
  - a) Woodpeckers
  - b) Bluebirds
  - c) Chickadees
  - d) Owls
  - e) All of the above
- 4. Some birds make nests on the ground. Which of the following does NOT?**
  - a) Cedar waxwings
  - b) Canada Geese
  - c) Meadowlarks
  - d) Turkeys
  - e) All of these nest on the ground
- 5. Which of these birds does not build a nest? For extra credit: where does this species lay their eggs?**
  - a) Northern orioles
  - b) Indigo buntings
  - c) Brown-headed cowbirds
  - d) Blue jays

## In the Calendar this Month...

While the newsletter will be on hiatus for the summer, the blog posts containing descriptions of the subjects in the LREC calendar will continue. Please stop by to see them. I hope you are finding the photos enjoyable and informative!

### April

1. Indian paintbrush (*Castilleja coccinea*)
2. Staff and volunteers collecting aquatic macroinvertebrates
3. A flathead mayfly clinging to a rock (*Stenonema* sp.)
4. Young leaf and seeds of a sycamore (*Platanus occidentalis*)

See full-size images and learn more about the subjects of these photos on our blog at <http://www.litzsinger.org/weblog/>.



See **Quiz**, page 5

# Spring Break Nature Camp, Part II

by Eddie Jones and Leslie Memula

Our week of habitat investigations during the recent Spring Break Nature Camp is now just a memory. In the meantime, we have experienced snow, an 85° F day, a minor flood and, yes, the eventual emergence of Spring.

The Spring Break campers were asked to create a habitat; first for themselves, then for another LREC resident. The teams chose deer, rat snakes, rabbits, and foxes.

The resulting habitats turned out to be places that were special to the campers, with only minor reference to the animal of choice (see project drawing at right).

We tested some of David Sobel's ideas (see below) and we were pleasantly surprised that many of these rang true when we let the kids take the lead. They really took ownership of their special place and the week in general. ✨



Project drawing by the "deer" group. Having seen areas in the prairie where deer had rested, these students included a deer "bed" in their habitat.

## SUMMARY

*Childhood and Nature: Design Principles for Educators (2008)* by David Sobel

### ADVENTURE

Environmental education needs to be kinesthetic, in the body. Children would stalk, balance, jump, and scamper through the natural world. Activities with a physical challenge component speak directly to children via the mind/body link.

### FANTASY AND IMAGINATION

Young children live in their imaginations. Stories, plays, puppet shows, and dreams are preferred media for early childhood. We need to structure programs like dramatic play; we need to create simulations in which students can live the challenges rather than just study them.

### ANIMAL ALLIES

Brenda Petersen said, "In our environmental wars, the emphasis has been on saving species, not becoming them" (1993). If we aspire to developmen-

tally appropriate science education, the first task is to become animals, to understand them from the inside out, before asking children to study them or save them.

### MAPS AND PATHS

Finding shortcuts, figuring out what's around the next bend, following a map to a secret event. Children have an inborn desire to explore local geographies. Developing a local sense of place leads organically to a bioregional sense of place and hopefully to biospheric consciousness.

### SPECIAL PLACES

Almost everyone remembers a fort, den, tree house, or hidden corner in the back of the closet. Especially between ages eight and eleven, children like to find and create places where they can hide away and retreat into their own found or constructed spaces.

### SMALL WORLDS

From sand boxes to doll houses to model train sets, children love to create miniature worlds that they can play inside of. Through creating miniature representations of ecosystems, or neighborhoods, we help children conceptually grasp the big picture. The creation of small worlds provides a concrete vehicle for understanding abstract ideas.

### HUNTING AND GATHERING

From a genetic perspective, we are still hunting and gathering organisms. Gathering and collecting anything compels us; searching for hidden treasure or the Holy Grail is a recurrent mythic form. Look at the success of *Where's Waldo*. How do we design learning opportunities like treasure hunts? ✨





From **Quiz**, page 3

Answers:

1. **d) It really depends on the species.** This is very species specific. For starlings, the male begins the building process, but the female finishes, building the majority of the nest. Male wrens build multiple nests and their partner chooses one. Both purple martins and nuthatches build their nests as a pair. Eastern phoebe females build their nests without help from the males. Orioles work together: the males bring building materials and the females weave the nest.

2. **b) Flowers.** Flowers are not often found in nests. In addition to moss, feathers, and mud, you



*A pileated woodpecker (Dryocopus pileatus) visits its nest in a tree cavity. Photo by Danelle Haake.*



*A pair of Canada geese (Branta canadensis) chose an unusual location at LREC for their nest this year: atop this root wad. You can barely see the head of the parent goose at the top left of the wad. Photo by Leslie Memula.*

- may also find twigs, hair, bark, grass, and leaves. Sometimes you will also find man-made materials like string, ribbons, paper, and bits of plastic, especially in urban areas.
3. **e) All of the above.** All of these birds nest in tree cavities. These birds will also nest in bird houses; to a bird, what is the difference between a hole drilled in a wooden box and a hole that opens into the inside of a tree? Probably not much...
4. **a) Cedar waxwings.** Cedar waxwings most often nest in trees.
5. **c) Brown-headed cowbirds.** The brown-headed cowbird is a nest parasite. This means that they lay their eggs in the nests of other birds. They are not very picky about the foster parents, as they are known to lay eggs in the

nests of more than 150 different species.

*Resources:*

Cornell Lab of Ornithology. Online at [http://www.birds.cornell.edu/nestinginfo/bios/sp\\_accts/](http://www.birds.cornell.edu/nestinginfo/bios/sp_accts/)

*Stokes Nature Guides: A Guide to Bird Behavior.* Vols 1, 2, and 3.

USDA Forest Service. "Cavity-nesting birds of North American Forests." November 1977. Online at [http://www.na.fs.fed.us/spfo/pubs/wildlife/nesting\\_birds/](http://www.na.fs.fed.us/spfo/pubs/wildlife/nesting_birds/) ↗



## SUMMER OPPORTUNITIES FOR TEACHERS

### Litzinger Road Ecology Center:

#### Sustainable Schoolyards

June 10–14, 2013

Investigate the history and ecology of your school, and enhance the schoolyard as a habitat.

#### Effective Outdoor Learning

June 19–21 OR July 15–17, 2013

Learn about place-based education and *Discover Nature Schools*, an outdoor curriculum by MDC.

#### What's It Like Where You Live?

July 22–26, 2013

Learn to combine the study of weather and climate patterns with plant and animal adaptations.

Details:

<http://www.litzinger.org/profdev.html>

### Missouri Botanical Garden:

#### Inquiry Institute: Physical Science and Beyond

July 8–12, 2013

Dig into the pedagogy of inquiry using physical science activities that challenge your own thinking.

#### Foodology for Schools: Let's Grow!

July 23–24, 2013

Attend a two-day summit for educators and others interested in ensuring that healthier, fresher, more locally grown fruits and vegetables make their way into school gardens, cafeterias, classrooms, and family kitchens.

Details:

<http://www.missouribotanicalgarden.org/learn-discover.aspx>

### Around Town:

#### Voyage of Learning Teachers Academy

July 17–19 AND July 22–26, 2013

Learn to use Forest Park as an outdoor classroom while engaging an interdisciplinary approach. Details at <http://www.forestparkforever.org/experience/programs/>

#### Missouri Department of Conservation Workshops

May 30, 2013 at August A. Busch Memorial Conservation Area  
OR

June 18 at Cuivre State Park

Become familiar with the *Discover Nature Schools* (DNS) Program. Each workshop has a slightly different focus. Details at <http://mdc.mo.gov/education/teacher-workshops>

## Horticulture & Restoration Offerings for School Groups

by Deanna English

This has been a fantastic cool, wet, and beautiful spring, and it feels like everything is popping at once. Everyday there is something new to greet us, and I bet this is happening in your home gardens and schoolyards too.

As we head into May things are in full swing here at LREC. Plants are coming out of the green house and will soon be heading off to schools and into the surrounding LREC landscape. It looks like we will have quite a variety of plants to offer schools. Lists of available plants for schoolyards will be coming out soon, so if you have a school garden make sure you request a list from your school partnership coordinator. We are also super busy

outside and always welcome help from school groups.

Check out the following May activities. If they fit into your curriculum, then call or email your school partnership coordinator and make arrangements to join us in one or more of these activities.

**Stream cleanup**—Available when the stream is at a safe level.

**Stream monitoring**—Use a kit to test dissolved oxygen, conductivity, pH, temperature (air and water), nitrates, turbidity, and chloride.

**Invasive plant removal**—Learn about invasive species and help us remove invasive plants from the site.

#### Roots and plant structure

**demonstration**—Students are introduced to the purpose and function of roots and plant structures.

**Plant seedlings**—Greenhouse plants need to be planted in the prairie and woodlands.

**Tree monitoring**—High school and middle school students can develop tree identification skills and learn techniques used to inventory a large area of trees.

**Plant monitoring**—Students can learn how the plant monitoring grid is set up at LREC and practice their own monitoring skills. ✂

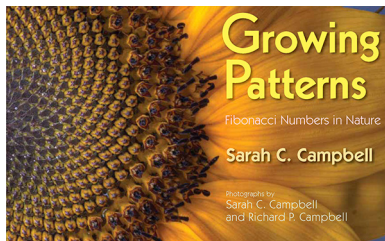


## LREC READING CORNER

by Anne Wamser

*"In the seeming randomness of the natural world, we can find many instances of mathematical order involving the Fibonacci numbers themselves."*

—Kikhat Parveen



### **Growing Patterns: Fibonacci Numbers in Nature**

BY SARAH C. CAMPBELL; PHOTOGRAPHS BY SARAH C. CAMPBELL AND RICHARD P. CAMPBELL

Spring is a great time to get students outdoors to explore their school grounds.

As flowers begin to bloom and trees begin to leaf out, we can begin to observe visual patterns in the natural world. These patterns may be found in the web of a spider, the wings of a butterfly, the cracks in the earth, the petals on a flower, and the branches of trees. Yet, did you know that some of these patterns reflect a more complex mathematical pattern? *Growing Patterns: Fibonacci Numbers in Nature* by Sarah C. Campbell explains this phenomenon.

*Growing Patterns* introduces the reader to the concept that mathematical patterns frequently occur in nature. In this picture book, the author uses beautiful photographs and basic addition to explain the Fibonacci number sequence (1, 1, 2, 3, 5, 8, 13...). The Fibonacci number pattern can be found by adding the last two digits in the sequence to find the next number. Campbell compellingly explains that these numbers often appear in nature through the arrangement of petals or spiral patterns in plants and animals.

The recommended age range for this book is children ages 5–11 years. However, older readers and adults can enjoy this book as well, contemplating the occurrence of these complex patterns in nature.

*Growing Patterns* serves as a great resource for teachers. It can be used to guide lessons conducted outdoors in math, science, and visual arts. Activities are also available through Earth Partnership for Schools' (EPS) curriculum guide entitled *Nature's Patterns*. Although the EPS activities are recommended for grades 9–12, activities can be modified for elementary school students as well. Please contact your school partnership coordinator to obtain a copy of the EPS lesson.

I strongly recommend this book to readers of all ages. As the days get warmer, I encourage you to get outdoors with your students and your children to explore the occurrence of these patterns in your schoolyards or backyards. 🌿

## LREC Announcements

May 29, June 19, July 31, & August 28  
**Monthly Water Quality Sampling**  
9am, meet at the Glass House.  
Questions? Contact Danelle Haake at [danelle@litzsinger.org](mailto:danelle@litzsinger.org) or 314-961-4410.

May 29  
**Volunteer Potluck Picnic**  
11am to 2pm, at the Windegger Shelter at Tilles Park. Call Martha at 314-540-4068 to let her know what you will bring.

## Local Events

May 11  
**Spring Wildflower Market**  
9am–4pm at the Shaw Nature Reserve. Browse and purchase hundreds of varieties of native wildflowers, ferns, trees, and shrubs. Pay each vendor directly; cash or check only. Included in Nature Reserve admission. Presale on May 10 for Garden members. Learn more at <http://www.shawnature.org>.

June 13  
**Native Plant School: Garden Archaeology and Ethnobotany**  
1–4 pm at the Shaw Nature Reserve. \$12 for MBG members; \$15 for non-members. Advanced registration is required. Learn more and register at <https://www.mobot.org/classes/>.

June 29–July 31  
**Desert Show: Plants and People of the Western U.S. Deserts**  
9am to 5pm daily at the Missouri Botanical Garden. See plants from North American deserts and learn about indigenous uses as well as medicinal potential. Garden admission plus \$5; free for members.