

Litzsinger Road Ecology Center

COMMUNITY NEWSLETTER

www.litzsinger.org

March 2013

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Students sow seeds at Litzsinger Road Ecology Center using the stomp method. Learn about this and other sowing methods on page 3. Photo by Eddie Jones.

Is Your Science Good Enough?

by Bob Coulter

As we embark on the latest round of shuffling science standards into new slots, it's worth taking a step back to consider what we are trying to accomplish. While there is an inexorable pressure to get more complex concepts at lower grades, we need to be sure we aren't crowding out interest and imagination. Just as an acorn can't be forced to grow into an oak tree overnight, kids take time, too.

To that end, I recommend investing 14 minutes in a TED Talk by a Tyler DeWitt, a teacher with a remarkable ability to make complex science accessible through story (see <http://on.ted.com/TylerDewitt>). As he argues, scientists need highly precise language to talk in a professional context, but kids do better with science that is good enough. While there are exceptions to every statement, if we bog science down in pursuit of

every nuance, kids will never turn on to the wonders of science. At that point, the need for professional precision will be moot, since the kids will decide science isn't for them. We can do better. Thanks for leading the way in your building. Let us know how we can help. ✨



A Look at the Nature Pyramid

by Leslie Memula

A couple of weeks ago I received an email from a colleague at Shaw Nature Reserve. The email contained a link to a blog post written by Tim Beatley that explored the continually emerging concept of the Nature Pyramid (<http://www.thenatureofcities.com/2012/08/07/exploring-the-nature-pyramid/>). For obvious reasons—both personal and professional—I was intrigued by this idea and chose to read the post. I encourage you to do the same.

As Dr. Beatley explains, his version of the Nature Pyramid was built off of the model of his University of Virginia colleague, Tanya Denckla Cobb. You may want to take a look at her version of the pyramid as well (<http://ien.arch.virginia.edu/projects-current/nature-pyramid>).

A few quotes from Dr. Beatley's post stuck with me:

“Exposure to nature, direct personal contact with natural [sic] is not an optional thing, but rather is a necessary and important element of a healthy human life.”

“Are there such things as minimum daily requirements of nature? And what do we make of the different ways we experience nature and the different types of nature that we experience? Is there a good way to begin to think about this?”

“Yale professor Stephen Kellert argues that we need to overcome the sense that nature is ‘out there, somewhere else,’ probably a national park, and what we need today more than ever is ‘everyday nature,’ the nature all around us in cities and suburbs.”

I would love to hear your feedback on this concept. Are Dr. Beatley's ideas realistic for you, your family, or your students? I am excited about the research implications that are emerging—and will presumably continue to emerge—from connecting people and nature more intently.

Please consider emailing me your thoughts on the Nature Pyramid concept and how it might influence you. I can be reached at leslie@lrec.net. 🌿

In the Calendar This Month...

Winter is giving way to what we hope will be a lovely spring. As we look with anticipation for warmer days, please enjoy our early spring calendar photos!

March

1. Jack-in-the-pulpit (*Arisaema triphyllum*)
2. Flowers of the red buckeye (*Aesculus pavia*)
3. Turkeys displaying (*Meleagris gallopavo*)
4. Student exploring decomposition

See full-size images on our blog: <http://www.litzsinger.org/weblog/>.





Sowing and Stomping

by Eddie Jones

Is native plant seed sowing and indoor or outdoor activity? Yes! And it has been happening at Litzsinger Road Ecology Center since the year began.

Indoors, students are given plastic bags containing wet sand and native plant seeds. The seeds have been tricked into “thinking” that winter is over and it’s time to germinate. How did we trick them? We mimic winter in the soil by placing the plastic bags, loaded with wet sand and seeds in the refrigerator for 60 to 90 days. The cool temperature, moisture, and abrasion fake winter, softening the seed coat and turning on the

seed’s germination engine. Seeds sown by students in the LREC greenhouse often germinate within days of sowing. Thus seed sowing is an indoor activity.

But why mimic winter when seeds can experience real winter? If seeds are sown directly in the prairie, woodland, or schoolyard, they will be prepared to germinate. However, it’s really hard to keep track of those little bitty seeds in that great big schoolyard. Nevertheless, with sufficient seed, direct sowing is an effective means of establishing and enriching a schoolyard habitat. When the seeds are sown, they are assured



Students sow seeds in the LREC greenhouse. Photo by Eddie Jones.

contact with soil if the students stomp or dance on the sown seeds. A musical sound track helps. Therefore, seed sowing is an outdoor activity.

Both indoor and outdoor seed sowing have occurred recently at Litzsinger. Outdoor seed sowing has also taken place at a number of schools that partner with us. Now it’s up to the seeds—and the forces that act on them—to produce plants that will provide other living things with food, shelter, and a place to raise their young. ✨



Preschoolers stomp seeds in their schoolyard. Photo by Eddie Jones.



Glass House Quiz: Ready to Grow

by Deanna English and Danelle Haake

Each spring, we begin to grow new plants in our greenhouse. We've had a lot of help recently from visiting students. In January and February, many groups joined us in the greenhouse to sow seeds in flats. Their growth has been really taking off, and we have begun transplanting seedlings into pots.

About this time of year, we also walk through the prairies and woodlands looking for new growth. Among the first harbingers of spring are the little purple spikes that pop out of the ground near the woodland trails. These spikes turn green and blossom into Virginia bluebells within a week or two. The burnt prairies turn from a clean slate into a patchwork of many shades of green that break through the blackened landscape.

In celebration of the coming spring, we thought it would be good to improve our knowledge of germination and seedling growth.

1. What are the five things plants need to grow?

- a) music, friends, love, food, vibration
- b) cold, wind, sun, water, neighbors
- c) light, water, soil, heat, air
- d) shelter, heat, water, light, food

2. What is the first pair of leaves called when the seed of a flowering plant germinates?

- a) primaritae
- b) cotyledons
- c) seed leaves
- d) floweria

3. When is the best time to transplant?

- a) immediately when the plant has its first leaves
- b) once the plant has two to six leaves
- c) just before it begins to bloom
- d) You shouldn't transplant at all, just stick it in the ground

4. What type of growing medium is best to use?

- a) potting soil
- b) soilless growing mix
- c) compost
- d) manure

5. What sort of soil should you use to transplant your seedlings?

- a) potting soil
- b) manure only
- c) soilless mix
- d) don't transplant them. Just plant them in the ground

6. When is the best time to plant native seedlings in the garden?

- a) after the last frost date, just like most vegetables
- b) native seedlings can be planted anytime—they're tough
- c) preferably when there's snow on the ground
- d) wait until the fall so they have more time to grow in the container

7. Why would you want to start your own seeds?

- a) it's fun
- b) it's less expensive
- c) you'll probably be able to grow a larger variety than what's available at nurseries
- d) you can plant seeds that grow in your region
- e) all of the above

See **Quiz**, page 5



From **Quiz**, page 4

Answers:

1. **c) Light, water, soil, heat, air.** Although there have been a number of studies about the effects of music on plant growth, it is not a requirement for growth. However, plants do need all of the items listed in c.
2. **b) Cotyledons** or **c) seed leaves.** The first leaves on the seedling of a flowering plant (or *angiosperm*) are called cotyledons or seed leaves. The next leaves are called *true leaves*.
3. **b) Once the plant has two to six leaves.**
4. **b) Soilless growing mix.** While soilless mixes reduce the chance of introducing disease

and insect problems, the mix contains little, if any, nutrients so you will need to feed them liquid fertilizer or transplant them into more nutrient rich soil a few weeks after germination. We use Pro-Mix BX, which is a peat based mix. Your local nursery should have a soilless mix available.

5. **a) Potting soil.** Any good potting soil should do the trick. The plants need nutrients, so make sure it's a decent soil.
6. **a) After the last frost date, just like most vegetables.** Young natives are tough, but hardening them off by letting them spend some days outside

with protection from afternoon sun and then bringing them inside or covering them against the chill of early spring nights will help them survive once they are planted. Planting in late April and May will give them time to establish themselves before the heat of summer and the cold of winter. Even natives need some help that first year, so keep them watered until they get established.

If you selected d, then you are also correct. However, it's not necessary and may require that you transplant again if the plants outgrow their pots. The plants will require more care to ensure that they stay watered and fed, but should do fine if you decide to wait and plant them in the ground in the fall.

7. **e) All of the above.** ✨



Plants have sprouted in flats in our greenhouse. Photo by Eddie Jones.



Horticulture & Restoration Offerings for School Groups

by Deanna English

March is here and bunches of seed mixes have been delivered to schools and stomped into the ground. In fact, we've stomped a few mixes here as well. There's lots happening in the greenhouse, too. Since early February things have gotten a little crazy with all the tiny new plants. It's amazing how quickly the seeds germinate and grow when given all the right conditions. Now we are busy transplanting these seedlings into larger pots filled with nutrient rich soil.

If you are planning a visit in March, you may want to consider if any of the following activities fit into your curriculum. If they do, call or email your school partnership coordinator and make arrangements to join us as we prepare for spring.

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.

Macro invertebrate monitoring—This is an opportunity to count the numbers and types of macro invertebrates found in Deer Creek to help determine stream health.

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.

Greenhouse transplanting—We can always use the help to transplant some of those little seedlings. 🌱



WELCOME SUSAN BARON!

Susan Baron joined the LREC team in February. She'll be working with Bob Coulter on a new National Science Foundation grant designing smartphone adventures for kids who visit the Missouri Botanical Garden's main campus and other community attractions like Citygarden. We'll also be extending our series of computer game design camps to support kids in designing games to be played in those spaces.

Susan is a recent graduate of the Masters' program in Environmental Studies at Antioch University New England in Keene, New Hampshire. (Bob and Deanna English are also Antioch alums, and intern Maisie Rinne is a soon-to-be alum!) 🌱

SPRING

by Martha M. Schermann

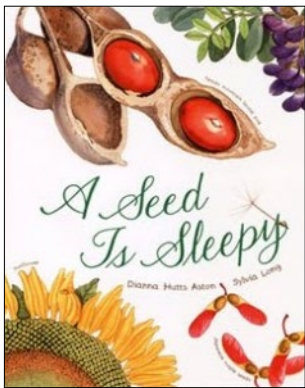
Seeds
Planted
Result
In
New
Growth



LREC READING CORNER

by Leslie Memula

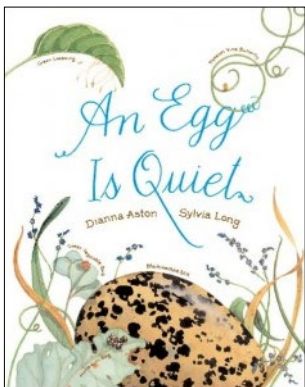
Plant life cycles are a huge focus of study for early childhood and elementary students. During the past month many, many students have paid the greenhouse a visit during their time at LREC. It is here in the warmth of the greenhouse that students have learned about the basic needs of plants while assisting us in our efforts to propagate plants.



A Seed Is Sleepy* and *An Egg Is Quiet

BOTH WRITTEN BY DIANNA HUTTS ASTON AND ILLUSTRATED BY SYLVIA LONG

A Seed Is Sleepy is a captivating book that takes both young and old on a journey of discovery. You will learn about fruits, naked seeds, seed sizes and dispersal, and germination. Its vivid illustrations, combined with fascinating descriptions, are sure to make it a favorite!



And if you are interested in animal life cycles, why not begin by reading *An Egg Is Quiet*. Once again these ladies don't disappoint. You will already be familiar with some of the eggs you see, but you will certainly learn a great deal more as you turn from page to page. And how fun it will be to match up the eggs with the adults once you are finished reading!

The curriculum connections are endless... but if you need some guidance in getting started you can thank Anne Wamser, LREC Restoration Assistant. Anne found the downloadable K-5

Teacher's Guide for both books and she graciously passed along the link (<http://www.chroniclebooks.com/landing-pages/pdfs/EggSeedTeachersGuide.pdf>). You will find a number of pre-planned activities you can use with your students to unlock the magic in each of these books. 🌱

LREC Announcements

March 20

Volunteer Enrichment: Vernal Equinox Walkabout

Walkabout starts at 1pm (ends around 2:30pm) or bring a brown bag lunch at 12:30pm. Meet at the Cabin. RSVP to Martha at martha@litzinger.org or 314-540-4068.

March 27

Monthly Water Quality Sampling

1 to 4 pm, meet at the Glass House. Questions? Contact Danelle Haake at danelle@litzinger.org or 314-961-4410.

Local Events

March 9

It's Purple Martin Time

9:30 to 11am at Busch Memorial Conservation Area. Learn about purple martins, their conservation, and how to establish and manage a colony in your backyard. Ages 14 and up. Call 636-441-4554 to register.

March 14

Native Plant School: Native Plant Propagation from Seed

1-4 pm at 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/>.

March 16

Pirates of Columbia Bottom: Intro to Geocaching

1 to 3pm at Columbia Bottom Conservation Area. After a brief introduction on the basics of geocaching, try your hand at hunting for hidden treasures. GPS units will be provided. All ages. Call 314-877-6014 to register.

SIGN UP FOR ONE OF OUR SUMMER WORKSHOPS:

Sustainable Schoolyards • Effective Outdoor Learning • What's It Like Where You Live?

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