COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY • COLLEGE OF AGRICULTURE

Kentucky's Outdoor Classroom Newsletter

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FALL COLORS

Can you believe fall is so fast approaching? Now is a great time to put extra effort into those outdoor classrooms. Soon it may be to chilly to spend class periods outside. And, have you noticed that due to our dry summer many of the leaves are already changing colors?

This issue has suggestions for:

- explaining fall colors from legend to fact. Right now might be a great time to plan a field trip to appreciate the fall foliage. Maybe a state park in your area.
- getting everyone from reluctant teachers to community leaders involved in your school's outdoor classroom.

Why is it that environmental educators encourage schools to have a broad base of support for their outdoor classrooms? This is to insure that the outdoor classroom will be used indefinitely. With involvement from many groups you won't run into problems if a class or teacher that used the outdoor classroom predominately should graduate or leave the school.

Students

Projects in the outdoor classroom are a great way to teach responsibility and leadership to students.

Teachers

Teachers of all grade levels and subject areas can use the outdoor classroom. Having many teachers involved will create a sense of community and more guidance for the students.

Administrators

Support from administrators will have a positive impact. Students can invite administrators to join them in their outdoor activities.

Service Personnel

Grounds staff and custodians know the grounds and can help guide students to the best locations for projects and activities.

Parents

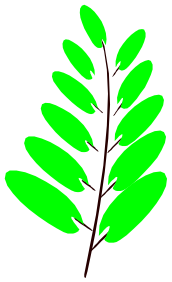
Invite parents to participate in activities lead by the students. Once parents see the benefits of an outdoor classroom they may become another excellent resource for future programs and events.

Community members

Students can give presentations to civic organizations or youth groups about their outdoor classroom. Interaction with the community will be a great experience for the students and it may also create community involvement and donations.

For more detailed descriptions about this project use the *Teacher's Guide Developing, Using & Maintaining Outdoor Classrooms in Kentucky.*

The Changing Seasons



Autumn, what comes to mind? Maybe rolling hills or chiseled mountains bursting with an array of colors. Wherever you're at, it is a special time when trees change colors. You can use your outdoor classroom to explain this yearly phenomenon.

The Legend

Native Americans believed that the constellation they identified as the Great Bear (we call the Big Dipper) was killed. Its blood dripped down to earth making the leaves red. The leaves receive their yellow color from the bear dripping fat while it was being cooked.

The Scientific Explanation

Different factors control when and how deeply leaves change colors. The photo period is the amount of sunlight a region receives during the year. Plants use sunlight in a process called photosynthesis to survive. With sunlight, they use chlorophyll, a substance found in their leaves, to absorb water and nutrients. When the days become shorter and the temperatures cool, the food making process is reduced. When chlorophyl production is reduced, the deep green begins to fade. The other colors were always in the leaf but concealed by the green of the chlorophyl. With it now gone, you can see the other shades.

Jack Frost, through popular myth, has been credited for the orchestrated transformation, but temperature has little to do with it. The shorter days and longer nights release a chemical clock inside each tree, that triggers the tree to shut down. As the change comes about, the green chlorophyll that has dominated the leaves during the summer months, begins to break down and is utilized less in the manufacturing of food. The chlorophyll had a very vital function during the growing season, capturing the sun's energy and converting it to simple plant sugars that are produced from water and carbon dioxide, and then in turn are utilized for plant growth. Because the tree is preparing itself for winter, and is not in growth mode, chlorophyll is no longer needed.

There are other colorful pigments found in a leaf during the entire life of the leaf, but they are dominated by the green chlorophyll. As chlorophyll dissipates, the splendid colors that have been hidden by chlorophyll all summer become visible, as do the colors created from the ever shifting chemical changes in the leaves and trees.

Leaf color can be a helpful way to identify trees. Here's the crayola on a few favorites.

Blackgum	**Birch**	**Hickory**	**Poplar**	**Red maple**	**Sugar maple**	**Sourwood**
bright red	bright yellow	golden bronze	gold	scarlet red	orange- red	deep crimson

Activities for Fall Colors

Project Learning Tree has activities that work with a lesson on fall colors. Try # 42 **Sunlight and Shades of Green** for a photosynthesis lesson.

Another leaf related Project Learning Tree activity to try is #64 **Looking At Leaves** it provides a good lesson to learn more about characteristics and how leaves can be used to identify trees.

Books for Fall

Incorporating a children's book might help explain fall colors and the changing seasons.

Red Leaf, Yellow Leaf. By Lois Elhert A tree is cut down and then a new one begins. The book goes through the seasons showing the changes in a Maple tree.

The Gift of A Tree by Alvin Tresselt. This book is about an Oak tree's life and involves the animals that depend on it.

Reference and Websites

"*Land, Legacy and Learning Making Education Pay For Kentucky's Environment*" is a Master Plan written by citizens of Kentucky for Environmental Education and the Commonwealth. This publication was sponsored by the Kentucky Environmental Education Council (KEEC). To get a copy contact the KEEC at 502-564-5937.

Check it out!

Environmental Education for Kids website. An electronic magazine for kids 4th-8th grade to learn more about the great outdoors. The website has an area called Our Earth, Nature Notes, Get a Job and even a Teacher Page.
http://www.dnr.state.wi.us/org/caer/ce/eek/

Notable News

Highland Turner Elementary in Breathitt County and Rogers Elementary in Wolfe county participated in Project Learning Tree workshops to kick off the new school year and to get use of their outdoor classrooms.

Rogers Elementary in Wolfe county had a dedication ceremony for their outdoor classroom. The students and teachers dedicated the outdoor classroom to their former principal Beverley Miller because she was instrumental in supporting the teachers in developing plans for the outdoor classroom..

Several schools have begun development of their outdoor classrooms this fall!!!!
Johns Creek School - Pike County
Marie Roberts Caney Elementary - Breathitt County
Red River Elementary - Wolfe County
Robert W. Combs Elementary - Perry County
South Laurel High School - Laurel County

If you have news you would like to share about your outdoor classroom please pass the news along to us.

Upcoming Events

Project Learning Tree Facilitator Training will be held November 12 - 13, at the University of Kentucky's Robinson Forest. The cost is $50.00. Project Learning Tree is an interdisciplinary environmental education program for educators working with students from kindergarten through the twelfth grade. From more information and registration contact Doug McLaren at 606-257-2703.

Available For Loan

Calculator Based Laboratory System (CBL). If you are familiar with this system and would like to borrow it for your classroom, please contact us at the numbers below.

.....More Activities

Every Drop Counts #38 in *Project Learning Tree*. A very relevant activity due to our recent drought. The lesson addresses our water use and waste and ways to try to conserve water.

Food Land and People activity **We're Into Pumpkins** is a good lesson for students to learn more about this seasonal fruit. Students will use such skills as predicting, measuring, recording and concluding for this lesson.

Mailing List

Know someone who would like to be on the mailing list or we need to make an address correction? Please fill out and return to Laurie Taylor at address below:

Name: _____

Address: _____

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