



February, 2012 Food For Thought

In This Issue

Ag Literacy Program
Sheep Facts
Farms Across the State
Beetle Watchers

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Calendar

Come visit us at one of these events

Feb. 3-4 NH Farm & Forest Expo, Manchester
exhibits, workshops, live animals
www.nhfarmandforestexpo.org

It's not too late to register for our composting workshop:
Thursday, February 9,
4:00-7:00 pm
"Don't Throw it Away! Composting at School"
Nottingham School
Fee: \$25/person; \$20/person if registering two or more teachers from the same school. Pre-registration is required. Contact

Greetings,

This winter has been a strange one, but there certainly have been days when I've been glad to have a wool sweater, hat and socks to wear as defense against the cold. When people put these garments on, they probably don't think about the farmers and their sheep who made those clothes possible, but hopefully after the next couple of months more people in New Hampshire will. As we mentioned in previous issues, the 2012 theme for our Agriculture Literacy Program is sheep and wool. We're looking forward to using the book *Charlie Needs a Cloak* by Tomie dePaola as a springboard for teaching about the wool industry. If you are interested in having us come to your school, homeschool group, library or other venue, or if you would like to volunteer as a reader in your community, please contact me. The programs usually last about an hour and are geared toward children ages 5-9.

This issue of *Food for Thought* will provide some wool related resources and activities to get you started or augment our programs. Local sheep farmers and fiber artists will be on hand to demonstrate and discuss with students how they raise sheep and use their wool. These programs are great for teaching science lessons on adaptation, as wool helps the sheep stay warm even before it helps us! Integrating arts into your lessons is easy with spinning and dyeing activities. The history of sheep farming in New Hampshire is fascinating and had a major impact on our state. These resources can enhance history lessons as well.

Though we're focused on sheep and wool for the next few weeks, there are many other things going on too. Once again we'll be at the

us at nhaic@nhfarmbureau.org to register. Price includes refreshments and resources.

March 3, NOFA-NH Winter Conference

Sanborn High School, Kingston workshops, local organic food, vendors, Frances Moore Lappe keynote
www.nofanh.org

March 8 National Agriculture Day

March 12, NH Science Teachers Association Conference,

Keene State College workshops, networking, speakers
www.nhsta.net

March 14, NH Environmental Educators Conference,

Seacoast Science Center, Rye workshops, networking, speakers
www.nhee.org

March 24-25 NH Maple Weekend

Visit a sugarhouse near you.
www.nhmapleproducers.com

Sheep & Wool Books

A Lamb's Tale by Caroline Owens
Learn about raising sheep through the eyes of a curious lamb. Follow Lily through her first year of life, and find out how The Shepherd takes care of her and her flock. Discussion guide included. This was written when the Owens farmed in NH so has a local connection. The author says, "I looked and looked, but could not find the right book for our children's programs at Owens Farm. I wanted a book that explained the skills, planning, and TLC

NH Farm and Forest Expo in Manchester on February 3rd and 4th. If you haven't been to the Expo, come check it out. It's a wonderful place to learn about the diversity of working landscapes in our state. You can meet people who raise all kinds of crops and livestock and learn about what they do and why. If you're exploring small scale farming there are tool and equipment exhibits providing helpful resources. Forestry and wildlife experts can teach you about the woods and their importance to our economy. In addition to the exhibits, food tasting and the FARM-O game, there are excellent workshops too. Visit the Farm and Forest website for more details(www.nhfarmandforestexpo.org) and

stop by to see us at booth #201.



It's also time to begin thinking about maple sugaring. That is a sweet topic but unfortunately there are many potential threats

to our maple sugaring industry including invasive insect pests. See the article from Piera Siegert, state entomologist with the NH Department of Agriculture, Markets and Food about insects to watch for and how to get students involved in real science and preventative measures to protect our precious maple trees.

Best wishes,

Ruth

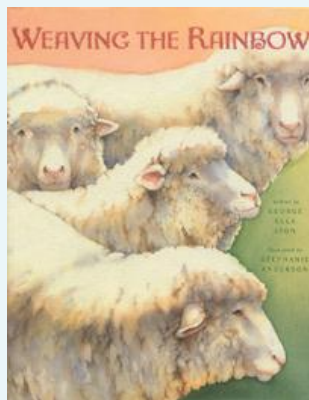
Ruth Smith, Coordinator

that goes into raising sheep-but in an entertaining way. I found cute stories with no substance. I found dry textbooks with no humor. The only solution was to write my own." www.owensfarm.com

Weaving the Rainbow

by George Ella Lyon

In this satisfying book, a young woman raises sheep, shears them, cards and spins the wool, dyes the yarn, and weaves it at a loom. Lyon's writing is lyrical, and the gentle pacing is calming. Terms like "yearling," "skein," "warp," "weft," "shuttle," and "treadles" are understandable in context and bring richness to the text. Words and illustrations complement each other in evoking the essence of creating art and in portraying the lush countryside. The paintings, with their dose of impressionism, effectively depict textures, but they can also suggest steam or wind. The final spread reveals what the woman is weaving: a picture of her sheep in their pasture. A beautifully presented walk through one person's artistic process. ISBN: 978-0689851698. Appropriate for K-Grade 3.



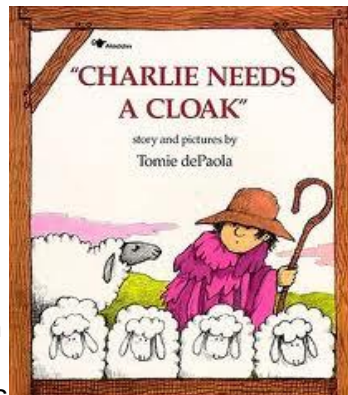
Unraveling Fibers by Patricia Keeler and Francis McCall

From general remarks about fibers and how they are spun, then woven or knitted into cloth, this book proceeds to more detailed discussions of natural fibers from plants (flax, cotton, jute) and animals (wool, cashmere, silk), and synthetic fibers (rayon, polyester, Kevlar). Throughout the book, small full-color photographs provide clear views of the fibers in many stages of growth and production. The last page speculates about possible fibers of the

Charlie Goes to School

NHAITC to Launch Ag Literacy Program on National Agriculture Day - March 8

As we have done for the last several years, we will be launching our Agriculture Literacy Program on National Agriculture Day. Starting March 8th volunteers will be visiting classrooms



around the state to read *Charlie Needs a Cloak*

by Tomie dePaola. This book tells how the shepherd Charlie shears his sheep and processes the wool into fabric to make himself a new cloak.

Presentations for classrooms will include sheep farmers explaining how they raise sheep and/or fiber artists demonstrating carding, spinning and weaving. If you would like one of our volunteers to come to your class, please contact us. Books will be purchased and donated to school libraries and classes. Teachers will also be provided with resource packets and activity ideas to enhance the program. This is a great way to integrate agriculture into your language arts, science, social studies and art lessons. Don't be sheepish about contacting us!

Some Sheep Facts:

A male sheep is a ram.

If he is neutered he is called a wether.

A female sheep is a ewe.

A lamb is a sheep that is less than 1 year old. Most lambs are born in the spring. Typically a ewe births 1-3 lambs at a time. Lambs can stand soon after they are born. Lambs are considered full grown at about 6 months.

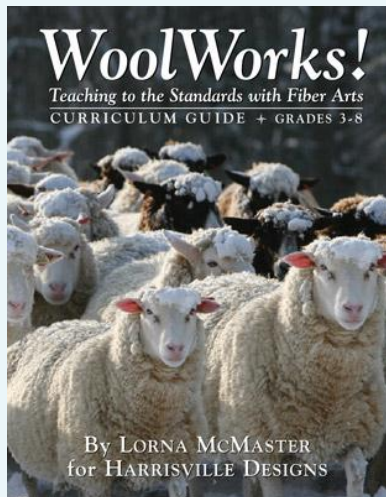
A group of sheep is called a flock. The flock provides safety for the animals.

Sheep make a bleating sound. A lamb can identify

future. The clarity of both text and illustration makes this a useful introduction to fibers, their production, and their uses. ISBN: 978-0689317774
Appropriate for grades 3-5.

WoolWorks! Teaching to the Standards with Fiber Arts by Lorna McMaster

A fabulous curriculum guide including science, math, art, language arts, history and more curriculum connections. Developed for Harrisville Designs in Hancock NH. For grades 3-8. www.harrisville.com. Harrisville Designs is offering this guide and other resources at a discounted rate for



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Resources linked to *Charlie Needs a Cloak*:

Instructional guide for *Charlie Needs a Cloak*. This guide provides questions, vocabulary words, links, videos and more. Online guide from Captioned Media Program: www.dcmp.org/guides/10049.pdf.

Plans for step by step lessons designed by teachers for teachers for grades 2-3. www.lessonplanpage.com
Search for *Charlie Needs a Cloak*.

Craft books:

You Can Weave! Projects for Young Weavers by Kathleen Monaghan

A weaving book for kids with projects that actually work.
ISBN: 978-0871924933 Grades 4-7.

Kids Knitting: Projects for Kids of All

its mother by her bleat.

There are over 200 different breeds of sheep in the world. Some are raised for meat, others for different types of fiber. The US is home to 35 different breeds. One of the most popular breeds is the Hampshire.

Sheep do not have any top front teeth. The roof of their mouth is hard. They eat grass and forbs (broad leafed herbaceous plants) as well as browse on some woody plants. They are ruminants, which means they have four parts to their stomach to help them digest the plants.

Sheep are sometimes used to control weeds. They have been put under power lines, on ski slopes and in forested areas to graze and "mow" the plants which grow in places where humans don't want them. This service means fewer machines or chemicals are needed to reduce the weeds in these areas.

Sheep have been domesticated by humans for over 8000 years.

As of January 2011 New England was home to 51,000 sheep (according to the American Sheep Industry). They resided on 3000 different farms.

History

Despite a ban on exportation of sheep to the New World, a few smuggled sheep made it to North America and by 1665 there were 100,000 on this continent.

In the colony of Massachusetts during the late 1600's, the general court passed a law requiring youth to learn to spin and weave.

Restrictions on the trading of wool was one of the issues that helped incite the Revolutionary War.

In 1809 Merino sheep were imported from Spain and brought to New Hampshire. There was a dramatic growth in the sheep industry within 3-4 years. Hill top farms were ideal for grazing. At least 80% of NH south of the White Mountains was cleared. Flocks of 500-1000 sheep were common throughout the state. In 1835 there were 465, 000 sheep in the state.

The human population of NH at that time was only 190,000.



Ages by Melanie Falick

In fifteen easy projects, Falick teaches kids of all ages how to knit. Through step-by-step instructions beginners learn the fundamentals. ISBN: 978-1885183767. Ages 4 and up.

Feltmaking Projects for Children by Anne Einset Vickrey

Designed for teachers the book can also be used at home. Six projects for groups and individuals allow children to make one-of-a-kind felt items. ISBN: 978-0961905385. Grades P-5.

Sheep & Wool Resources

Wooly Wool Kit

A kit with activities including spinning, dyeing, washing wool. Activities related to literature, math, science. For grades K-3. Contact us to reserve one for a 2 week loan period.

Alpaca Begins with "A" Learning Kit

A kit with puppets, books, fiber, lesson plans and activities to teach about the history, communication, life cycle and uses of alpacas. Developed by the Cottage Industry Alpaca Breeders Association (www.ciaba.org). For grades K-2. Contact us to reserve one for a 2 week loan period.

NH Sheep & Wool Growers Association

This organization has members across the state who raise sheep, operate farms, educate the public, work with wool and promote the sheep industry in NH. NHSWGA hosts an annual sheep and wool festival. www.nhswga.com

NH Spinners and Dyers Guild

Members of this organization encourage the arts of spinning and dyeing. www.nhsdg.org

NH Humanities Council

Humanities to Go program: "The Great Sheep Boom and its Enduring Legacy on the NH Landscape." This program is conducted by Steve Taylor the former commissioner of the NH Department of Agriculture. Taylor tells of the historical significance and impact of sheep that took place in the early 1800's. This program is designed for adults.

In New England 250,000 miles of stonewalls were built to confine sheep. Woolen mills were scattered in small towns across our state. This was a short lived boom. By 1840's the farms were being abandoned as people headed west to more fertile soils or into the cities to work in the mills and industries of the Industrial Revolution. The old farms reverted to forests and today our woods are scattered with the stonewalls as a lasting legacy of the impact of sheep on our landscape.

Oxen, Alpacas, Fruits & Vegetables, Oh My!

By Deb Robie, Grafton County Coordinator

Who would have ever expected a mere twenty years ago that we would have this kind of diversity in little old New Hampshire? It doesn't matter what part of the state you look at you can find just about any kind of farm imaginable and probably some you never thought of.

How many of your students have ever seen much less touched an ox? Do you know the difference between an ox and a steer? How can oxen help teach about self-discipline, patience and self-confidence? A visit to the Ox-K Farm Discovery Center in Gilford, NH will help answer all of your questions. Look at their website www.oxkfarmdiscoverycenter.org to learn how to visit them or have them come to you.

New Hampshire Ag in the Classroom board member Val Newell owns and operates Crown Point Alpacas in Strafford, NH. Visit their website at www.thegreenalpaca.com to learn about the fascinating world of alpacas. We have a new kit donated by Val for educating children about alpacas. Contact our office for more information about this fabulous kit.

For fruits and vegetables one only has to go out your backdoor no matter where that might be. Edgewater Farm is in my hometown of Plainfield, NH. They have been raising fruits and vegetables for over three decades. By visiting their website at www.edgewaterfarm.com you can read their thoughts on organic vs non-organic farming and how they incorporate both systems. Up north in Stewartstown, NH Bishop Brook Farm has pasture-raised eggs, handspun wool yarns, goats' milk and cheese. Their farms site is www.localharvest.org/farms/M30015.

As you can see New Hampshire is growing all over the place. Have your students take a virtual field trip or better yet contact any of the hundreds

www.nhnc.org

American Sheep Industry Association

A national group promoting the sheep industry. They have an on-line resource guide for teachers which covers a great deal about the life and benefits of sheep. The guide is from Colorado but most is usable for NH. www.sheepusa.org. See the "For Kids" page as well as the "Fast Facts" page for great fact sheets.

Sheep101

This website has a wide variety of information about sheep, laid out in a friendly way for anyone who wants to learn a little or a lot about sheep. www.sheep101.info

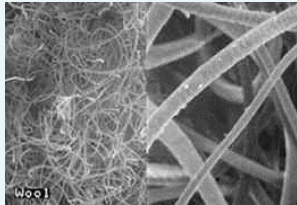
FiberArts.org provides a directory of fiber art groups and guilds across the state.

<http://fiberarts.org/directories/guilds/New+Hampshire>

Sheep & Wool Activities

Experiments with Wool

Wool can absorb up to 30% of its weight in moisture without feeling damp. This is why it can still keep you warm even when it gets wet. Test the absorbency of wool compared with cotton or other types of fabric.



Look at wool under a magnifying glass or even better a microscope to observe the fibers and learn how they hook together. This is why they spin so well and make strong yarn.

Place ice cubes in several paper cups (be sure it is the same amount in each). Wrap the cups with wool, cotton, synthetic fabric, styrofoam or other materials. Compare how long it takes for the ice to melt. This can also be done with hot water in the cups and measuring the temperature drop. Use caution with hot water and children.

of farms in your state and pay them a visit. You won't be disappointed in the lessons learned.

Insect Pests Threaten Forests

Teaching early detection of EAB and ALB: An essential role for educators

by: Piera Siegert, State Entomologist and Director, Division of Plant Industry NH Department of Agriculture, Markets & Food

Asian longhorned beetle (ALB) and emerald ash borer (EAB) are invasive insects that New Hampshire residents should be concerned about. Neither has been found in New Hampshire, but there are populations of both ALB and EAB within 100 miles of the state's borders. The largest known ALB infestation is located in Worcester, Massachusetts, and EAB populations have been found in New York's Hudson River Valley, and near Montreal in Canada. Both ALB and EAB were likely introduced to the U.S. in shipping material from China; both spend part of their lifecycle feeding under the bark of hardwood trees; and both have the potential to cause significant economic and aesthetic damage to New Hampshire's forests.

ALB principally attacks maple trees, making ALB a threat to both the maple syrup and fall-foliage tourism industries in New Hampshire. ALB adult females lay eggs in chewed-out pits in the bark of maple trees. These eggs hatch into larvae which burrow into and feed within the tree. Because larvae and their feeding galleries are beneath the bark, and because early infestations can be asymptomatic, ALB populations can be difficult to detect. There is no commercial trap or other passive detection method currently available for ALB. Detection of ALB populations relies on a survey in which host trees are examined for signs and symptoms of damage. This is a labor-intensive process, and one which is greatly assisted by the efforts of residents with an eye to the health of their trees.



EAB attacks and kills all species of ash trees, with tree mortality occurring 3-5 years after initial infestation. Ash has been a highly planted urban landscape tree, making EAB a threat to both forest and urban landscapes. Nationally, EAB is estimated to cost between \$12 and \$25 billion dollars over the



Try dyeing some wool with Kool-Aid, onion skins, or other plant dyes.

Experts in the Field

Visit a sheep farm (see the resource list for ways to find them, or contact us). Have the children interview the farmer about the life cycle and needs of the sheep.

Invite a fiber artist to come to your class to demonstrate carding, spinning, weaving, etc. (We can help with contacts).

next decade to treat, remove and replace urban ash trees. Ash's autumnal colors contribute to the palette that makes New England's fall forests so striking. Additionally, black (a.k.a brown) ash is culturally significant for some Native American tribes. Early infestations of EAB can be difficult to detect, with systemic symptoms such as crown die-back not evident until late in the infestation. Unlike ALB, there are passive detection methods for EAB; however, an informed population is still a critical component of EAB detection and management.

In general, insect infestations are easier to manage when populations are small. The earlier an outbreak is detected, the lower the associated costs and the greater the chance of success. Early detection can reduce the overall impact to our northern hardwood forests, urban landscape and maple syrup industry. Because the impact to the community is reduced by early detection, community participation is critical. Currently, the New Hampshire Department of Agriculture, Markets & Food is administering a USDA APHIS and US Forest Service joint project with the goal of providing outreach to school-aged children about ALB and EAB. A critical aspect of this project is to train educators about ALB and EAB so that they can incorporate forest pest awareness activities into lesson plans, helping to create an educated community able to participate in the detection of these destructive insects. To find out more about how to participate in this program, please email: NHFPOSP@gmail.com.

To learn how to train your students to become "beetle watchers" watch for future workshop opportunities through NHAITC or attend a workshop at the NH Science Teachers Association Conference on March 12 at Keene State College: www.nhsta.net