

## Flower Power

# Growing Plants, Growing Minds

## May 2012 Food for Thought

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Growing Your Own Experiments  
More Farm Visiting Opportunities

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### Calendar

**May 12-13** NH Sheep & Wool  
Festival, Deerfield  
For more information visit:  
[www.nhswga.org](http://www.nhswga.org)

**May 16-17** School to Farm at  
Apple Hill Farm, Concord  
Contact Granite State Dairy  
Promotion to check on

Greetings,

We haven't experienced too many April showers this year, but recent rain has caused the landscape to transform into a lush green pallet of new growth (at least in the southern and central parts of the state). May is a time for flowers, green growth, more young animals and without question a busy season of preparation for nearly everyone involved in agriculture.

In this issue we will focus on plants, how they grow, their parts and what students can learn by planting some of their own, either in the classroom, in a school garden or even at home. This process can be truly transformative. A tiny seed which may look like a spec of dirt or a pebble can transform into something that has the potential to nourish us. By observing and participating in growing something students can gain enriching experiences that teach responsibility, patience, resilience and more. Life skills that will come in handy for years to come can be nurtured along with the plants.

The February 2011 issue of *Food for Thought* has an article about how to plant and grow seedlings indoors. Check out the newsletter archives on our website:  
<http://archive.constantcontact.com/fs083/1102560151594/archive/1103423126311.html>

As you explore plants with your students, don't forget that not all plant producers are growing food. New Hampshire's largest agricultural sector is actually ornamental horticulture, representing a 381 million dollar industry. By connecting with nurseries and garden centers in your area as well as field farmers, students will better understand the importance of learning about many kinds of plants.

availability

[http://nhdairypromo.org/indexContact\\_Us.htm](http://nhdairypromo.org/indexContact_Us.htm)

**June 5-7** School to Farm Days at UNH, Durham  
Open to 4th grade classes in the Seacoast area. Contact us by May 7 to register. Call 224-1934 or email:  
[nhaitc@nhfarmbureau.org](mailto:nhaitc@nhfarmbureau.org)

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## Resources - Websites

NH Department of Agriculture, Markets and Food - provides a map of gardens, garden centers and farms throughout the state  
<http://agriculture.nh.gov/publications/index.htm>

NH Plant Growers Association - a professional organization for plant growers. The website contains newsletters, current research, lists of botanical gardens in New England.  
<http://www.nhpga.org>

Kids Gardening - a comprehensive website with resources about gardening with children, in and outside the classroom, resources, grant sources, supplies and more.  
<http://www.kidsgardening.org/>

Missouri Botanical Gardens - Biology of Plants: lesson plans, diagrams, vocabulary words and activities related to growing and examining plants.  
<http://www.mbgnet.net/bioplants/grow.html>

I hope the following resources will inspire you to put some seeds into some soil and help your children and their plants grow.

Happy growing,

Ruth Smith, Statewide Coordinator

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## Growing Your Own Experiments

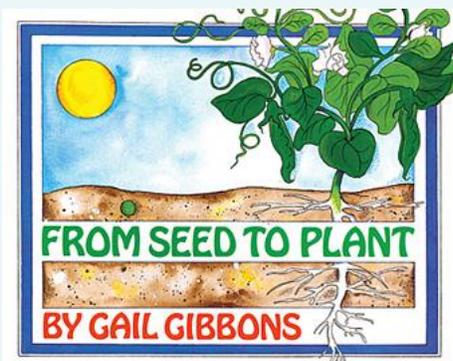
One of the best things about growing plants at school is that you have your own, ever changing materials to experiment with. Watching plants develop can provide lessons on life cycles, plant parts, pollination, reproduction, nutrition, you name it. As with most aspects of agriculture, it can be incorporated into any discipline.

Our diet is made up of many types of plants as well as various parts of the plant. Plants have six distinctive parts that all serve unique functions - roots, stems, leaves, flowers, fruits and seeds. We eat roots when we munch on a carrot or bite a beet. Celery, asparagus and rhubarb are stems we consume. Edible leaves include lettuce, spinach, Swiss chard and kale. Broccoli and cauliflower are the buds of flowers but violets and nasturtiums are also tasty flowers. It's easy to think about fruits such as apples and oranges, but all plant parts that contain seeds are considered a fruit including tomatoes, squash, and string beans. However when we eat dried beans, corn, grains, and peas we are eating the seeds of the plant. Gather photographs (seed packets and catalogs are good sources, as well as the internet) of different plants that we eat and have the children classify which part of the plant we are actually eating.

As you grow some plants in your classroom, plant plenty of extras so you can sacrifice a few along the way for examination. To watch root development, place bean seeds inside a zip-close baggie with a

Plant Explorer - a website resource for primary children to explore plant growth  
[www.naturegrid.org.uk/plant/index.html](http://www.naturegrid.org.uk/plant/index.html)  
<http://www.naturegrid.org.uk/qca/flowerparts.html>

## Books



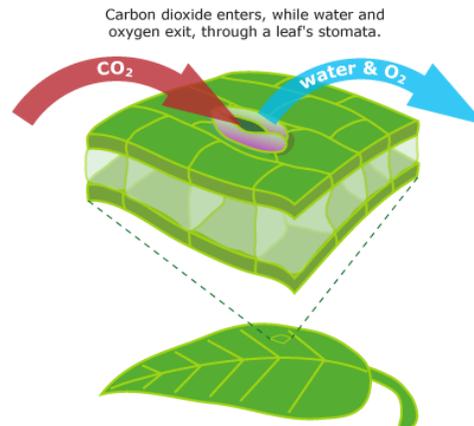
*From Seed to Plant* by Gail Gibbons

A simple introduction to how plants grow and reproduce. Illustrations show pollination, seed dispersal and more. This includes a simple bean growing project. Best for grades K-2. ISBN: 978-0823410255.

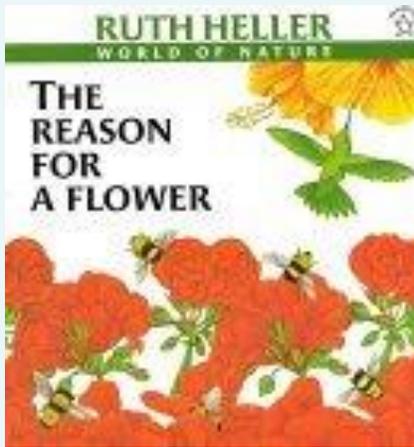
damp cotton ball. It can be taped to the classroom window for easy viewing, just make sure it doesn't get too cold or too hot. It will grow within the range of 60-90 degrees. Make sure the cotton ball stays damp. In the course of a few days the bean will begin to sprout and the parts of the root will be visible. Look at diagrams of seeds and identify the different parts with the students so they can see first hand how the first leaves and embryonic roots form.  
<http://www.mycaert.com/samples/070026.pdf>

Some of the seeds can be planted in soil. When stems begin to form, dissect and look at some under a magnifying glass or a microscope. Look for the vascular structure (the veins) which is the plumbing of the plant. The stem provides the structure, but also the conduit for water and nutrients to be transported throughout the plant.

Leaves can also be examined closely. Search for the stomata or pores on the leaf. These tiny holes help the plant to "breathe". It is where the gases of oxygen and carbon dioxide are exchanged during photosynthesis. They also give off water during the process of transpiration.



The development of flowers is one of the most exciting parts of plant study. You may not want to wait for your in-class plants to get to that stage before dissecting some flowers. At this time of year the school grounds or your own garden may provide plenty of materials with which to work. Choose larger flowers that have distinctive parts that the children can readily view. Help them learn to identify the female part (pistil) and the male part (stamen), the petals and sepals. Review the functions of each (see resource list for more detail). Discuss how different plants are pollinated - insects, wind, bats.



*The Reason for a Flower* by Ruth Heller

"The reason for a flower is to manufacture seeds", but there's more to it than that and this book illustrates plant and flower parts with rhythmic lines and vibrant pictures. Best for grades P-2. ISBN: 978-0698115590

*Botany for All Ages* by Jorie Hunken

This is an activity book designed to give educators many options for hands-on lessons related to plants. It is broad and includes wild as well as cultivated plants. ISBN: 978-1564402813

*Project Seasons* by Deborah Parrella

Though not exclusively about plants, this activity guide has a hefty chapter on green plants with many engaging activities for students to learn about plant growth and adaptations. ISBN: 0-9642163-0-2

Depending on the plants that you are growing and the length of time you have to watch their development, the students may be able to observe the formation of fruits (if the flowers have been pollinated) and the seed production. This brings the study full cycle. As a 5th grader that I worked with recently said while she was harvesting beans, "These look just like what we planted in the spring." Indeed!

Remind the students that the plants we eat go through most of these stages and are nurtured by the farmers who raise our food. Becoming a successful vegetable or fruit farmer requires a good knowledge of plant biology. Learning this stuff is not just fun but can actually be useful - imagine that!

## Opportunities ABOUND

by Deb Robie

From an educator's standpoint, I don't think there is anything more fun than to see the light go on for a child learning something new. The joy of discovery; the thought that you just had something to do with opening a child's mind to something new; the knowledge that whatever it was, will stick with that child for a long time. That is why we teach. Hopefully, for all of us, we have had that time in our lives.

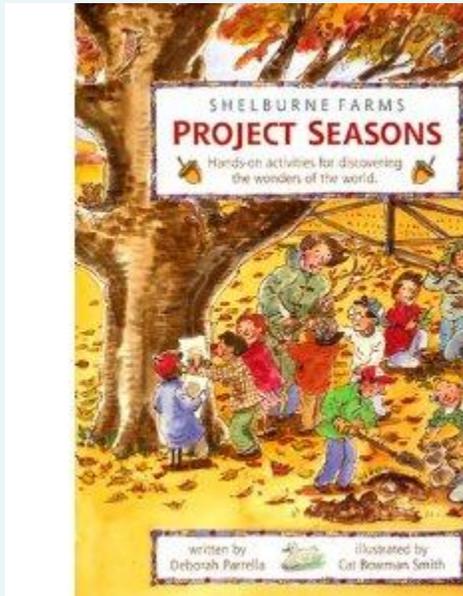
As the school year comes to a close there are many different opportunities to bring about that "Oh, that's cool!" moment for all.

Farms around the state are plowing ground, planting things, turning animals out and embracing spring. There is new life all around. Take this time to visit a farm or have a farmer come visit you.

Here are some more suggestions of places to visit either in person or virtually at least.

Located in Derry is J and F Farms. They have been a family owned farm since 1906. They have a very large farm with the whole package of real life educational lessons. History, math, science, social studies, economics and language arts are all in one place. Even if you just study their web site you will be able to see the various ways to apply their resources to learning. Check them out at [www.jandffarms.net](http://www.jandffarms.net).

In Sanbornton you will find Surowiec Farm. They are not open for the season yet but you can bet they are planning



and planting to beat the band. Talk about math, science, social studies and time management! All the things we try to teach our students to make them more successful in life are the very same things that farmers deal with everyday. Visit the farm at [www.surowiecfarm.com](http://www.surowiecfarm.com).

Walpole is the home of Boggy Meadow Farm. Talk about history, this farm has been in the same family since 1822! Visiting their farm will make you aware of what makes New Hampshire so special and the envy of all. Find them at [www.boggymeadowfarm.com](http://www.boggymeadowfarm.com).

Last but certainly not least, in North Haverhill, you will find Windy Ridge Orchard and Christmas Tree Farm. The Fabrizio family has been farming for generations. Don't let the farm's name fool you. This is a year round destination. There is never a real down time on a farm. A retired UNH Cooperative Extension Service 4-H agent and a long time elementary school teacher run the farm. They know how to set up a field trip. Look and see for yourself at [www.windyridgeorchard.com](http://www.windyridgeorchard.com).

I know the end of the year can be extremely busy but wouldn't it be nice to get out and enjoy all that New Hampshire agriculture has to offer you and your students?

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