

# **Haldane's Sustainable Garden Handbook**



**2011 - 2012  
School Year**

# History and Overview



*No race can prosper until it learns there is as much dignity in tilling a field as in writing a poem.*

*Booker T. Washington (1856-1915)*

## **Garden History and Overview**

Thanks to generous grants from Hudson Highlands Land Trust (HHLT) and Haldane School Foundation, Haldane's hard working parents and students built a garden worthy of Blue Devil pride in 2009.

A series of "theme beds" organize the space. These were started in 2010 when students planted an herb garden, a grass garden, and a perennial sensory garden full of fragrant plants donated by Laurel Rimmer (Haldane parent and a gardener from the Bronx's famous Wave Hill). Haldane parent and Glynwood farmer Dave Llewellyn has also been a great source for help and advice.

Raised beds south of the walkway are home to annual vegetables and flowers. In spring 2011, the 2<sup>nd</sup> grade planted cucumbers, the 3<sup>rd</sup> grade planted a butterfly garden, and Mrs. Horn's 6<sup>th</sup> grade Environmental Science class planted an array of flowers known to attract birds. The dedicated school kids also hauled soil, spread wood chips (donated by Jerry Allen of Philipstown Tree Service), and planted bird-attracting shrubs around the perimeter of the garden. Later that fall, Haldane parent Andy Reid graciously rototilled a new section of earth to expand the existing butterfly garden.

Now in 2012, a new compost pile is maintained by 3<sup>rd</sup> and 4<sup>th</sup> grade students with scraps they collect from the cafeteria, and a leaf pile sits beside it for mulch. The garden is also fortunate to have a hand-pumped rain barrel which collects run-off from the equipment shed's roof. Thanks to Mr. Dudar for the rain barrel idea and to Haldane's own Facilities Manager, Wayne Robinson, for building it.

Each year the fence around the garden's perimeter sees the addition of more plants and climbing vines that screen the garden for privacy and create mini habitats. Many of these plants are generously donated by Haldane parents from their own gardens. Our long-term goal is to become a Certified Wildlife Garden, which provides food, water, and shelter for wildlife.

This year we look forward to having the 3<sup>rd</sup> grade release the butterflies they have hatched, from chrysalises in the classroom, out into our very own butterfly garden. We are also excited about starting a pumpkin patch for the Kindergarten classes. Every year we hope to add another project that will enrich education and peak the curiosity of Haldane students.

# PTA



*If you have a garden and a library, you have everything you need.*

*Cicero (106 - 43 BC)*

## PTA Garden Committee

The Garden is managed by an all-volunteer PTA subcommittee run by Haldane parents and teachers.

*Co-chairs:* Beth Sigler & Melissa Angier

*Members:* Diana Geller, Lourdes Laifer, Danielle Pack McCarthy, Carina Frantz, and Kory Riesterer

Contact us at: [info@growinghaldane.com](mailto:info@growinghaldane.com)

Our new **garden website** ([www.growinghaldane.com](http://www.growinghaldane.com)) will be accessible through links on the Haldane Central School District website and the Haldane PTA website. We'll be posting photos, project updates, and past newsletters to keep everyone informed. The website will also be a place where, we hope, teachers will post comments and share lesson plans and teaching ideas.

The **Garden Club** meets Mondays after school in the garden, depending on weather, and extends an open invitation to all parents, students, and teachers interested in weekly garden maintenance: planting, pulling weeds, turning compost, mulching, harvesting, pruning, and clean-up.

## Garden Parents

Haldane's garden is lucky to have the enthusiastic support of numerous parents. These volunteer Garden Parents assist teachers with garden activities or prep the garden for specific class projects:

- Kory Riesterer ([kriesterer@optonline.net](mailto:kriesterer@optonline.net)) and Carina Frantz ([carina\\_frantz@verizon.net](mailto:carina_frantz@verizon.net)), both for Mrs. Rasa-K
- Danielle Pack McCarthy ([daniellepackmccarthy@gmail.com](mailto:daniellepackmccarthy@gmail.com)) for Mrs. Cretara-K
- LauraLee Holmbo ([llholmbo@yahoo.com](mailto:llholmbo@yahoo.com)) for Mrs. Wilde-K, Ms. Isler-2, and Mr. Virgadamo-5
- Melissa Angier ([melissa\\_angier@yahoo.com](mailto:melissa_angier@yahoo.com)) for Mrs. Comerford-1
- Sandy McKelvey ([sandy@odara.com](mailto:sandy@odara.com)) for Mrs. Quick-2
- Melany Campanile ([melanycampanile@yahoo.co.uk](mailto:melanycampanile@yahoo.co.uk)) for Mr. Dudar-3 and Mr. Dougherty-5
- Jennifer Murrinan ([jcmurrinan@verizon.net](mailto:jcmurrinan@verizon.net)) for Ms. Windels-4
- Beth Sigler ([siglerhendersonstudio@verizon.net](mailto:siglerhendersonstudio@verizon.net)) for Mrs. Hartford-4
- Lourdes Laifer ([llsabio@aol.com](mailto:llsabio@aol.com)) for Mrs. LeMon-4

If your class does not have a garden parent and you would like assistance in planning or implementing garden projects, please let the Garden Committee know and we'll be happy to find someone willing to help.

## Getting Started: Tools and Layout



*No occupation is so delightful to me as the culture of the earth,  
and no culture comparable to that of the garden.*

*Thomas Jefferson (1743 - 1826)*

## Getting Started: Garden Tools and Layout

If you would like to use the garden with your class, just let us know! Contact [info@growinghaldane.com](mailto:info@growinghaldane.com). With your project plans in mind, we can arrange a space for you to plant or coordinate visits with other classes. We can also share information about your project across grade levels, for classes using the garden simply for observation, journals, or taking measurements and readings.

### Water

Multiple water spigots run along the raised beds, and an additional spigot is attached to the school building in the back corner of the Butterfly Garden courtyard. Extra water can be retrieved by watering can from the hand-pumped rain barrel next to the tool shed.

### Tools

The Garden's tool shed should have everything you need to complete a project, but let us know if additional tools are required and we will do our best to provide them.

Also, if any teacher would like a refill of peat-soil starter-pods (for the windowsill greenhouses we distributed last year) just let the garden committee know. We may also be able to provide additional greenhouses.

#### ***The combination to the tool shed's lock is: 947***

##### ***Tools:***

20 small trowels  
20 small cultivators  
2 large shovels  
1 medium shovel  
2 small shovels  
2 leaf rakes  
2 dirt rakes  
2 pitchforks  
2 watering cans  
2 hoses  
4 hose nozzles

1 Weed Whacker  
(w/ batteries and charger)  
1 large broom  
2 small brooms

##### ***Gloves:***

20 pairs small gloves  
20 pairs large gloves

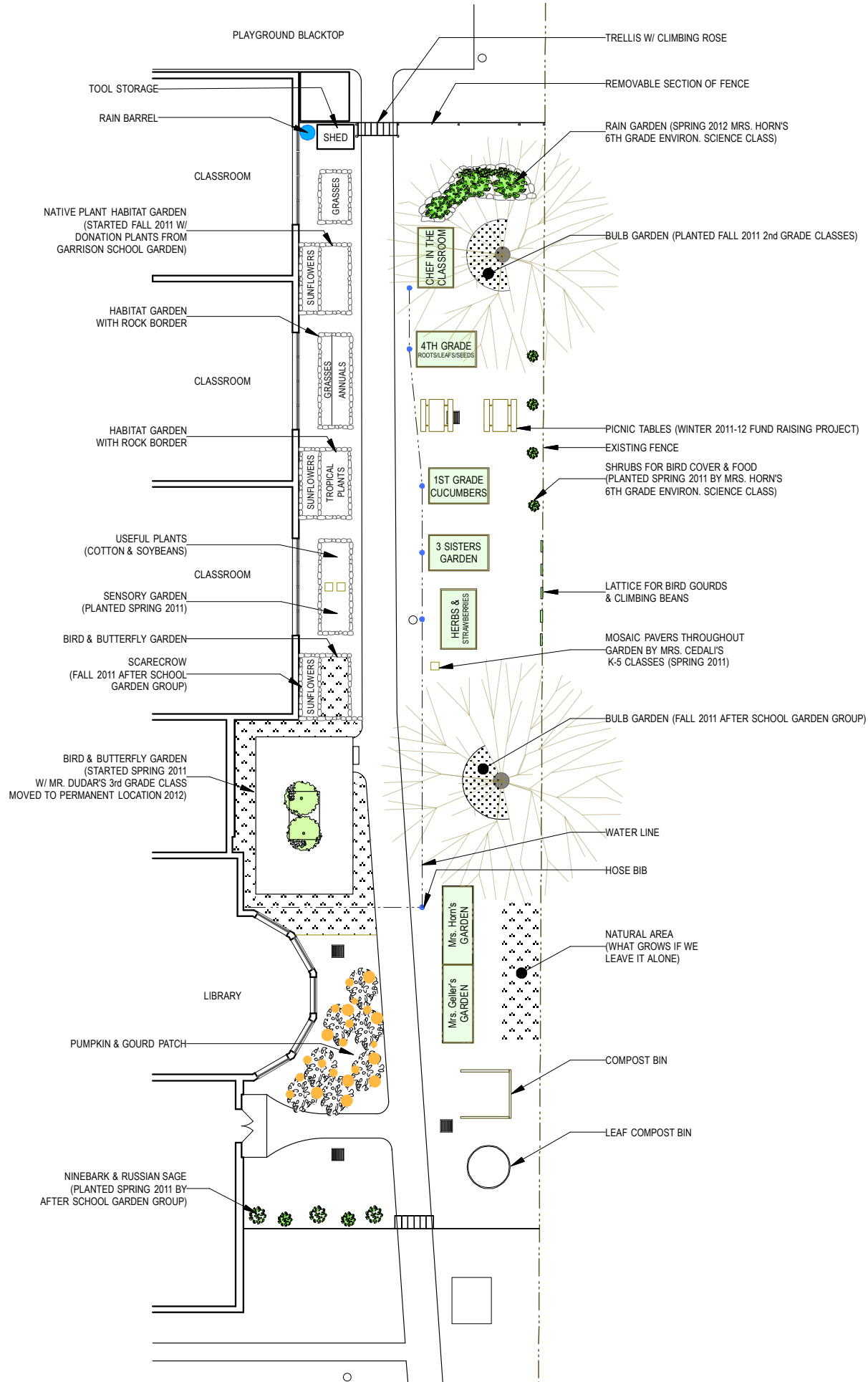
##### ***Miscellaneous:***

clothes for scarecrows  
plant ties and stakes  
tomato cages

## **Layout**

The garden will change year to year as beds are rotated and plants are added or removed (according to how well they grow). Each year we will update our garden map, so we have a record to look back at and build on for the next season. In general, edible plants should be grown in the raised beds furthest from the school building, as this soil is healthiest. Beds along the school wall will consist of permanent ornamental plantings or be used for annual 'theme' gardens.





# HALDANE'S SUSTAINABLE GARDEN PLAN 2011-2012

# Curriculum and Resources



*A weed is no more than a flower in disguise,  
which is seen through at once if love give a man eyes.*

*James Russell Lowell (1819-1891)*

## Curriculum Resources and Lesson Planning

### Ways to Use the Garden

The garden can be used to support curriculum across both grade levels and subject matter. It can provide a space for students to actively interact with or a space to simply visit for observation or data collection. Lessons can take place outside in the garden, or plant materials and soil matter can be brought into the classroom for center-based learning.

We want Haldane staff to think of the garden as a **supplemental teaching tool and resource**, not additional work! Garden lessons can also be very short, like a quick visit just to take notes. Teachers need not be experienced gardeners to make use of the garden, that's what the Garden Committee and Garden Parents are here for -- support.

Please note that anything planted outside (such as a seed-sowing activity) will be cared for by the Garden Committee and Garden Club until the class returns. Classes will not be responsible for maintaining plants unless they choose to.

The Garden Committee will also strive to **maintain good communication**, so that items planted are well tended and projects started are not disturbed. This requires good two-way communication -- so whenever possible we encourage teachers to send us a quick e-mail if their project changes the garden's overall composition and/or we need to care for anything growing outdoors long-term.

We also ask for teachers to **share lesson ideas**, especially those that worked well or those with carryover potential to the next grade level. This way, projects planted at the end of one school year (June) could be harvested or investigated by incoming students in the fall (September).

Beginning this year, the after-school Garden Club will grow some of the vegetables and herbs to be used in the ***Chef in the Classroom* program**. We encourage grades participating in this program to visit the Chef's bed, so students can see how the plants grow and even harvest some of the ingredients they'll be cooking with in class! Visit the Hudson Valley Farm To School website for more information: [www.hvfs.org](http://www.hvfs.org)

## Sample Lesson Ideas Across Subject Matter

As we all know, the garden can be used in many ways to support Haldane's Science 21 Curriculum. So here are a few garden project ideas for other subjects.

### **English Language Arts:**

Potential units: *garden journals - observation or inspiration - garden as narratives - descriptive/ persuasive/ poetic - symbolic plants in mythology, folktales, Shakespeare - how words are defined: what is a weed? this depends on the author (subjective vs. concrete thinking) - basic read and follow directions on seed packet planting instructions*

### **Math:**

Potential units: *take measurements (grids for garden design) - rain & temperature gauges - chart plant growth - graphing results - look for patterns in nature (colors/shapes/textures) - grow a pattern garden that students measure/map out - estimate number of seeds per row length - use fractions to divide garden beds - locate symmetry/asymmetry in garden - calculate perimeter & area of beds - determine importance of location (sundial)*

### **Foreign Languages:**

Potential units: *plant name scavenger hunt - collect pieces of plants listed in French and Spanish from the garden - look at Latin or botanical plant names (*Rosa vulgaris*) for similarity with modern day Romance languages*

### **Social Studies:**

Potential units: *plants grown in Native American or 'Pilgrim' gardens - historically useful or medicinally important plants (George Washington Carver: peanuts) - American industrial and agricultural history (cotton, soy, tobacco, indigo dyes) - pioneer plants (broom) - native edible weeds - plants brought to the new world from Europe - plants brought to Europe from the Americas - plant biodiversity as people migrate - invasive plant species impact on cultures*

### **Art:**

Potential units: *gardens as landscape design (horticulture) - design garden beds for color/shape/height/seasonal interest - trace or draw plants by hand - early botanists as great artists: scientific drawing before cameras - realistic vs. impressionistic renditions of nature*

## More Ideas for Garden-Theme Beds

Another way to support curriculum is to have individual classes design and grow related 'theme beds' that are appropriate to grade level and to specific units of study. Haldane's garden has enough space to accommodate a few different theme beds each year, so we encourage teachers who want a full or half bed to contact us in winter so we can assign class beds. Or, with advanced notice, teachers can request that the Garden Committee grow a specific theme bed for their class to observe and explore during the school year. Here are some theme ideas:

### *ABC Garden*

- Have students plant an alphabet garden that includes one plant whose name begins with each letter of the alphabet

### *African-American Garden*

- Create a garden using plants that are native to or frequently used in African countries or that were used in America by African slaves
- Learn to cook traditional African foods and have the students taste
- Have students explore the diversity of ecosystems that exist in Africa and create small garden plots to represent each

### *American History Garden*

- Create a garden using plants that were once used for cloth or dyes (cotton, flax, beets, etc.) then using these plants, learn to dye cloth
- Use or learn about plants that were discovered by Lewis and Clark
- Learn about plants that are native to North America or New York
- Plant a Kitchen Garden with heirloom vegetables, herbs, and flowers used by Colonial Americans for food and economic value
- Plant a grain garden with cereal crops grown in your region

### *Art Garden*

- Grow plants that can be used for art projects (e.g., dried flowers, flowers for pressing, interesting seed pods, gourds) then sell items made with garden products to raise money for the next growing season
- Create a garden mosaic of student designs on a garden wall (or cement bird bath)

### *Herb Garden*

- Discuss cultural and medicinal uses of herbs through history
- Make herbal vinegars, oils, or sachets for Mother's Day gifts
- Dry herbs from the school garden and sell to raise money

### *Jack and the Bean Stalk Garden*

- Create a bean teepee in the garden!

### *Kinder Garden*

- Plant a rainbow garden
- Sunflowers and gourds grow very quickly—use them as the basis for a “measuring garden” where young ones learn to measure

### *Kitchen Garden*

- Create an edible garden using plants that children like to eat or have never tried before, or grow a salad garden that will be ready to harvest before school is out
- Create a garden with vegetables that harvest from each different plant part—roots, stems,

flowers, fruits, and seeds and learn about plant parts using foods we eat

- Plant a fruit and veggie garden featuring “vegetables” such as lettuce, carrots, and spinach as well as “fruits” (anything with a seed) such as squash, cucumbers, or eggplant

#### *Latin-American Garden*

- Create a garden using plants that are native to or used frequently in Latin countries, such as tomatoes, tomatillos, cilantro, and hot peppers

#### *Native-American Garden/Colonial Garden*

- Learn about the Three Sisters Garden tradition
- Create a garden using plants that are native to America or plants traditionally used by Native Americans and make corn seed necklaces
- Discuss medicinal plants; learn how Native Americans and Colonial settlers used plants as medicine

### **Additional Resources**

*Overview: how to use an educational garden*

[http://www.mnh.si.edu/archives/garden/seasons/garden\\_overview.html](http://www.mnh.si.edu/archives/garden/seasons/garden_overview.html)

*Garden Activities for Teachers*

[http://www.educationworld.com/a\\_lesson/lesson167.shtml](http://www.educationworld.com/a_lesson/lesson167.shtml)

*Lesson Plans (Sustainable Agriculture)*

<http://www.growing-minds.org/lessons.php>

*School Gardening Site with Lesson/Activity Ideas*

<http://www.kidsgardening.org/school-gardening>

*Garden Curriculum*

<http://communitygarden.org/rebeltomato/fruits/garden-classroom.php>

*Large, Random List of School Gardening Ideas*

<http://aggie-horticulture.tamu.edu/kindergarten/Child/school/ideas.htm>

*Garden Lessons and Activities*

<http://schoolgardenweekly.com/instructional-activities/school-garden-lessons-activities-and-curricula>



*In his garden every man may be his own artist without apology  
or explanation. Each within his green enclosure is a creator,  
and no two shall reach the same conclusion;  
nor shall we, any more than other creative workers,  
be ever wholly satisfied with our accomplishment.  
Ever a season ahead of us floats the vision of perfection  
and herein lies its perennial charm.*

*Louise Beebe Wilder (1878-1938)  
garden writer*