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The Classroom Naturalist

Making Our World a Better Place: Inspired by Wangari Maathai

“Tree by tree, person by person, Wangari Maathai is making Kenya a better place to live”

In October 2004, Professor Wangari Maathai (**wan-GAH-ree mah-Dheye**) was awarded the 2004 Nobel Peace Prize for her tireless work to improve the environment in her native Kenya. Prof. Maathai is the first environmentalist and first African woman to win the prize since it was first awarded in 1901. She is a source of inspiration for everyone in the world who seeks to protect our environment and promote peace. After reviewing her story (below) with your students, brainstorm ideas on what they can do to make our town and state a better place.

Planting Trees to Save the Environment



Wangari Maathai was born in Nyeri, Kenya in 1940. Ever since she was a little girl growing up in a farming community, she recognized the importance of planting seeds for the future. Unlike many of her friends, she went on to college and earned many degrees, eventually becoming a biology professor. Today, Prof. Maathai is Kenya's deputy environment minister.

As she grew older, Prof. Maathai noticed that her community was becoming dryer and more barren because people were cutting all the trees down for firewood and building material. She also observed that the streams were muddy and clogged because nearby trees had been cut down and the soil was eroding into the water. In an effort to add a little greenery to the area, she planted trees in her backyard.



After planting the trees, Prof. Maathai realized that this could be a way to mobilize Kenyan's to preserve their forests. In 1977, Prof. Maathai founded the Green Belt Movement, a group that teaches poor women how to plant and care for trees in nurseries on farms. The women raise the tree seedlings and then give most of them to farmers in nearby communities at no cost. In exchange, each woman receives 2 shillings (3 cents U.S.) from the Green Belt Movement for each native tree they distribute. In this way, they can earn money to send their children to school or start small businesses. The movement has expanded so that trees are now also planted in public places like parks and other green spaces. The Green Belt Movement has planted over 30 million trees to help save Kenya's forests, which have been heavily cut by builders, farmers, and people that need wood for fuel. The Movement has also spread to Tanzania, Ethiopia, Zimbabwe, and other African countries.

Kenyan Children Learn About How Important Trees Are

Prof Maathai has also gotten children involved by teaching them how important trees are to rivers. Trees next to rivers help prevent erosion (soil washing into the river). Muddy, cloudy water is not good for the insects and animals that live in rivers. The children learn about animals that live in the rivers by their schools, the history of the river, do experiments to find out how clean it is, and brainstorm about what they can do to help the river become cleaner.



Why Did She Win the Peace Prize for Planting Trees?

Wangari Maathai believes that peace and the environment are interconnected. Many of the wars and conflicts in the past and today had their roots in competition over natural resources (like petroleum, natural gas, timber, minerals, and water). Prof. Maathai believes that if we did a better job of conserving our resources and protecting them, conflicts over them would be reduced.

Upon winning the Nobel Peace Prize, Maathai won \$1.4 million, a gold medal and a diploma. She plans to use most of the money for the Green Belt Movement project and other activities that will benefit Kenyans and the environment.

Why Are Trees Important?

Here in **Milton**, we are lucky to have trees all around us. But, many of us take them for granted. In this activity, students will brainstorm why trees are so valuable and then think about ways that people can help trees grow and prosper.

1. Explain to the class that they're going to create a list of reasons why trees are important.
2. Divide the class into groups and provide them with some books about trees and the environment (see side bar). Ask each group to brainstorm about how trees are good for the environment and create a list. Then, they can also make a list of ways that people can help trees.

Resources: Time for Kids Online, <http://www.timeforkids.com/> (search for "Maathai")
 BBC News, <http://news.bbc.co.uk/2/hi/africa/>
 The Green Belt Movement, www.greenbeltmovement.org.
 The Leaf Pack Network, <http://207.89.253.45/stroudcenter/lpn/index.htm>.



3. When the class gets back together, have each group present their results and compile master lists. After reviewing the results, you can ask: “Were trees important in the same ways 100 years ago?”
4. Class volunteers could type or write up the lists (“Why Trees are Important” and “What You Can Do to Help Trees”). With the addition of illustrations and a cover, this could be made into a book or poster so the information can be shared with others.
5. Students could also write their ideas on construction paper leaves and put them on a large tree created on a bulletinboard.

MA Curriculum Frameworks:

1.1, 1.2, and 1.3 Language Arts
 Strand 2 Life Science (Biology)
 Strand 2 Geography, Learning Std. 10
 (Human Alteration of Environments)

Resource: 30 Good Reasons for Trees,
http://www.eduplace.com/rdg/gen_act/earth/trees.html

Trees are good for our health and the health of the planet. They:

- ✓ Provide us with timber for use to build houses, boats, furniture, musical instruments, baseball bats, etc.
- ✓ Can be used as fuel
- ✓ Bear fruits and nuts that humans and animals eat
- ✓ Provide habitat for many creatures
- ✓ Are used to make medicines and dyes (Aspirin is made from willow bark.)
- ✓ Provide shelter for animals and plants
- ✓ Form “green corridors” that connect habitats with one another, allowing animals routes to migrate
- ✓ Act as a wind break, reducing heating costs in buildings and protecting other plants

- ✓ Provide shade and reduce air conditioning costs
- ✓ Absorb pollution
- ✓ Absorb carbon dioxide and slow down global climate change
- ✓ Prevent erosion
- ✓ Muffle noise
- ✓ Beautify our community
- ✓ Clean water—their roots help filter groundwater
- ✓ Provide great recreational areas for hiking, skiing, etc.
- ✓ Their flowers make it possible for bees to make honey
- ✓ Are used to make rayon, cellophane, and photo film
- ✓ Provide us with maple sugar (sugar maple trees)
- ✓ Are used to make chewing gum, rubber tires, paints, inks, soaps, and waxes (the sap and gums of certain trees)
- ✓ Help patients heal faster when they can see trees outside their windows
- ✓ Provide nutrients for other plants when leaves and twigs fall to the ground
- ✓ Help keep the air and soil near gardens moist by releasing water in a process called transpiration
- ✓ Produce oxygen--A mature tree creates enough oxygen in a day to support a family of four
- ✓ Improve the soil (by preventing erosion) and thereby increasing food productivity (the amount of food that can be grown on an area of soil)

Resource:
<http://www.naturenet.net/trees/important>

Tree Books in the Glover Library*

Audubon First Field Guide: Trees,
National Audubon Society
National Audubon Field Guide to
New England, National Audubon Society
Trees and Shrubs of New England, Marilyn Dwelley
A Tree is Growing, Arthur Dorros
Be a Friend to Trees, Patricia Lauber
Berries, Nuts & Seeds, Diane Burns
Birds, Nests & Eggs, Mel Boring
DK Nature Encyclopedia
Giants in the Land, Diana Applebaum
How the Forest Grew, William Jaspersohn
Nature All Year Long, Clare Walker Leslie
Tell Me, Tree: All About Trees for Kids,
Gail Gibbons
The Grandpa Tree, Mike Donahue
Trees, Leaves & Bark, Diane Burns



Tree Activity Web Sites

A Tree for Every Child, American Forests,
http://www.americanforests.org/resources/kids/a_tree_for_every_child
Teaching Youth About Trees,
www.arborday.org/kids/TeachingYouth.cfm.
Kids Make a Difference,
www.arborday.org/programs/kidsdif.html.
Treetures,
<http://www.treetures.com/Meet1.htm>.

Bird of the Month: **Black Capped Chickadee** (*Parus atricapillus*)

The official state bird of Massachusetts, the black capped chickadee, is a small, active bird that is ideal to study and observe in the winter.



What Do They Look Like?

Black-capped chickadees are approximately 5 inches or 13 centimeters in length. They are easy to recognize because of their black cap, black throat and their white cheeks. Their underparts are a dull white. The male and female look similar.

Chickadee Behavior

Chickadees are extremely active birds. They are in constant motion - hopping, feeding upside down, and searching the underside of branches for food. Some have suggested that their ability to hang upside down to eat is an adaptation to winter-feeding. Such acrobatic behavior enables them to gather seeds and insects from the underside of snow covered trees.

What Do They Eat?

Chickadees need a lot of food for their high-energy activity. They eat insects (including moths, caterpillars, spiders, beetles, flies, wasps, leafhoppers, aphids, scale insects, millipedes and snails). In the winter, they mostly eat seeds and berries. They often store food where they can recover it later (like in bark crevices).

What is Their Habitat?

Chickadees live in deciduous and mixed forests. They also live in gardens with trees that harbor insects, larvae and insect eggs. They live in the Boston area all year round.

In the winter, chickadees travel in small flocks of about 6 birds. The flocks consist of a dominant pair, some younger birds and an adult stray or two. There is a definite “pecking order” to a chickadee flock. If you watch a flock closely, you may see one bird “usurp” another’s feeding perch by scaring it away. This is how chickadees establish dominance in their flocks!!

Where Do They Nest?

Chickadees like to nest in hollowed out tree stumps. They usually lay 6-8 brown-speckled eggs. Chickadees will nest in a box with a little encouragement. Fill a nesting box or bird box with sawdust. The chickadees will carry the sawdust out bit by bit and use the box to make their nest.

Oh, the Lovely Sound of the Chickadee...

Chickadees are noisy and communicative birds. Each of their calls is associated with a certain behavior or function:

“**tseet-tseet**”- The high pitched call that helps keep the flock together.

“**chickadee**”- Their well known call that help a bird to locate the flock.

“**dee-dee-dee-dee**”- A scolding call that expresses dominance.

Try talking to a chickadee. It will talk back!!

Where to Find Them at Glover

Take a trip to the outdoor classroom. You may find a chickadee in the Eastern red cedar or on a bayberry bush. They like bayberries, sunflowers, winterberry, viburnums, Virginia creeper, birches, pines and hemlocks for food and shelter.

Visit us on the web at

<http://gloveroutdoorclassroom.home.comcast.net>

To a Chickadee by Charles D. Campbell

Perky little chickadee
Warms the very heart of me.
Summer parent, winter neighbor
Hot to cold seems not to matter.
Others leave but you’re no snowbird,
Fluff your feathers’ spend the winter.

Thistle silver’s sunflower seeds
Satisfy your major needs.
Mine a metabolic ration;
Tiny seeds yield your elation.
Feet to perch—head down—tail up’
Acrobatic fluid motion.

Twinkly eye beyond my hand,
Can you see and understand
My challenging complexities?
You revel in simplicities.
I am stronger but I need
A few of your abilities.

You can fly from tree to tree,
I can travel when I’m free;
You meet the sunrise while I sleep,
I ponder isms wide and deep;
You fly to be with merry flock,
I stand apart my pride to keep.

Perhaps it’s best we not try
To close the gap, you and I,
Friendship is spelled in joys and deeds;
You light my day, I give some seeds.
From lofty perch I hear your call;
My day brighter I stand more tall.

Resources:

Stokes Nature Guides: A Guide to Nature in the Winter

The Birder’s Handbook, by Paul Ehrlich, David S. Dobkin and Darryl Wheye

www.enature.com

<http://birds.cornell.edu/bow/bcch>