

15 for Trees

4 weeks of activities for grades 4-8

Dear Teacher,

Welcome to **15 for Trees!**

Do your students have some “down” time before or after lunch or at the end of the day before the bell rings? If so, then *15 for Trees* is for you! We designed these **15-minute activities** because we know that you may not have time to fit an entire unit on trees into your yearly schedule—it’s tough enough to cover the required material! However, we think time spent on our connections to trees and the environment, and on our responsibilities to the Earth, is of utmost importance. Our well-being depends on it!

Each week explores a different topic about trees and our connections to the environment: *Trees and Planet Earth*, *Trees and New York City*, *Trees and New York City Neighborhoods*, and *Trees and Me*. Each activity begins with a question and is designed as a mini-investigation where students can apply prior knowledge and find their own meaning.

With your needs in mind, the activities take little preparation and generally require few materials. Vocabulary, suggested reading, and resource lists are found at the end of each activity. Extensions are included that allow your students to follow their interests; they are designed to be fun, engaging, and thought-provoking. Activities are aligned with New York Science and Language Arts standards; objectives are written for each activity.

15 for Trees follows best practices in education and is designed to meet the needs of diverse learners. Activities are varied to keep interests high and support a variety of student intelligences and ways of knowing; however, they can be easily modified based on the strengths and needs of your students. Each activity uses higher-order thinking skills and promotes skills and behaviors for life-long learning.

Focusing on our need to be stewards of trees and the Earth, the activities are designed to empower students to affect positive change, to realize their own potential, and to engender a sense of responsibility and civic duty.

We hope that you enjoy 15 for Trees. Together, we can make a difference!

Sincerely,

Akiima Price

Chief of Education and Programs
New York Restoration Project

If you have any questions or comments, please contact New York Restoration Project at 212.333.2552.



INTRO **a**

15 for Trees Curriculum Educator Guide

Activities Overview

The *15 for Trees* curriculum is composed of interdisciplinary activities designed as mini-investigations in which students answer daily questions to learn about trees and environmental connections. These investigations follow best practices in education (Zemelman et al., 2005); they are student-centered, experiential, authentic, holistic, expressive, reflective, social, collaborative, democratic, cognitive, developmental, constructivist, and challenging.

Student-centered activities take into account students' interests and questions and take advantage of students' natural curiosities such as exploring the schoolyard for natural artifacts or looking for animals and habitat elements within the boundaries of a Hula Hoop®.

Experiential and authentic exercises keep students active in purposeful, hands-on exploration of the natural world and urban environments. Extension activities encourage reading, analyzing, looking, listening, comparing, drawing, writing, etc. By "doing," students will find their connections to trees.

Holistic approaches involve life-long learning skills such as considering the ways that things are connected and the impacts of actions. The interdisciplinary focus of the activities immerses students and invests in them as whole learners.

Each activity involves **expressive** exercises that encourage students to share what they have learned and **reflective** exercises that encourage students to review what they've learned. Extension activities allow students to create a variety of products using a variety of media and to follow their interests.

Students learn best in **social** situations that are engaging and fun. Team games, group tasks and discussions, and other **collaborative** exercises help students learn from and with one another.

Democratic approaches encourage students to be a part of the classroom community and the community of learners. By working together, students will find solutions to the daily investigations and will build cooperative skills and concepts.

Students will use **cognitive** exercises to develop "higher order" thinking skills such as reasoning (e.g., writing captions for pictures of street trees), categorization (e.g., grouping the benefits of trees), drawing inferences (e.g., how their daily actions impact the health of the Earth), and synthesis (e.g., finding the connections between themselves and trees). Each activity ends with a brief discussion time and a challenge that encourages students to extend their thinking and consider other opinions.

Each *15 for Trees* activity is designed to be age-appropriate and includes **developmental** exercises that encourage positive learning steps. Activities also include **constructivist** approaches that help students make sense of new content and reinvent it. Activities immerse students in different ways of knowing and learning (such as using their senses to "get to know" trees and leaves) and reinforce students' own discoveries about trees.

Students are given a challenge at the end of each activity. **Challenging** exercises nurture students' capacity to try new things, apply what they've learned, and think for themselves. With a "no fail" sense of adventure and exploration, *15 for Trees* activities create a safe environment where students can learn about trees, the environment, and themselves.

INTRO **b**

15 for Trees Curriculum

Educator Guide (continued)

Assessment Overview

Formative assessments:

Each *15 for Trees* activity contains a “quick check for understanding,” verbal probes, and evaluations of group discussions. However, you can add other formative assessments such as:

1. **Classroom or individual KWL charts** at the beginning of Week 1 or at the beginning of each week.

2. **Journals.** Include students’ “Think, Pair, Share” work, responses to the challenges, extension activities, any reflections, and the results of activities. If you use three-ring binders for journals, include copies of scavenger hunt worksheets, etc. At the end of each week, ask students to create a web in their journals to show the relationships between the elements learned. Use the journals as “response” journals: add questions, positive feedback, encouraging comments, and challenges.



3. **Quizzes.**

4. **Classroom or individual portfolios.**

5. **Nature journals.** At the beginning of Week 1, start nature journals using memo tablets, downloaded journal pages, or plain paper in a three-ring binder. Go outside for 10-15 minutes a day, if possible; on rainy days, have students stand at your classroom windows. Encourage students to add a variety of elements, such as sketches, free writing, poetry, thoughts, and reflections.

See the Sierra Club’s “Keeping a Nature Journal” at www.sierraclub.org/education/nature_journal.asp and the National Wildlife Federation’s “Create Your Own Nature Journal” at www.nwf.org/kidzone/kzPage.cfm?siteld=3&departmentld=152.

Summative assessments:

15 for Trees activities are designed to be short in duration, but the following summative assessments can be added:

1. **Performance tasks.**

2. **Weekly pledge to help trees and the environment:** Include descriptions of specific action(s) that will be taken, an action plan, an evaluation, and background information gathered from research.

3. **“You can make a difference” proposals and projects:** Proposals/projects initiated during Week 4, *Trees and Me*, should reflect how well students have internalized “the story” of trees. Students should also state their personal involvement (e.g., “This is important to me because...”).

Group/self-assessments and peer review:

Many of the *15 for Trees* activities involve cooperative groups. Students can assess the effectiveness of the entire group and their roles within the groups on such things as willingness to contribute, sharing, taking turns, helping, and asking for help. Students can also assess each other.

References:

Gisel, Bonnie J. 2002. (Sierra Club.) “Keeping a nature journal.” http://www.sierraclub.org/education/nature_journal.asp

National Wildlife Federation. 2008. “Create your own nature journal.” <http://www.nwf.org/kidzone/kzPage.cfm?siteld=3&departmentld=152>

Zemelman, S., H. Daniels, and A.A. Hyde. 2005. *Today’s standards for teaching and learning in America’s schools*. Heinemann. 0325007446.

WEEK
1

ACTIVITY
1
A

Trees and Planet Earth

I know we've met before... but how?

(Adapted from Kriesberg, 1999)

Location: Location:
Inside or out.

Materials: Mystery Box (box with question marks drawn on the sides); four items that are made from trees/ come from trees, e.g., a pencil, paper, an envelope, an apple; four pieces of paper; four pencils.

Summary:

Students are reminded of the connections that they have with trees by trying to write the longest possible list of connections.

Objective:

List five ways that trees are a part of students' lives (connections).

Hook:

"I'm going to pull some things out of this Mystery Box. Turn to a partner and

try to figure out what they have in common." Ask students to raise their hands when they are ready to guess (all of the items are related to trees), and then slowly pull the items out of the box. See if students can think of other "tree connections," i.e., the ways that trees are a part of our everyday lives: Trees give us oxygen, trees make us feel good because they add beauty to the landscape, etc.

Ask partners to come together to form teams of four or five. Give each team a sheet of paper and a pencil, and explain that the game will be silent. On "go," students take turns writing down tree connections; after a student writes down one answer, he/she passes the paper to another student on his/her team. Students keep passing the paper around, adding to the list, until "time" is called. (Suggestion: play for one minute and then gauge the responses, adding more rounds as time permits). The team with the longest list wins. (Hint: For a longer list, write down specific tree connections, such as "apple," versus general connections, such as "food.")

Do a quick check for understanding: Were students surprised by the lengths of the lists? Ask teams to

share three items from their lists without duplicating what another team has shared. Can they do it? Thank students and give them a challenge: Take a minute when you get home to try to find 15 ways that you are connected to trees.

Extensions:

- **Tree stories.** Think for a few moments about a tree connection that you currently have or had when you were a child, such as fond memories of a Christmas tree, a "secret place" near a tree, a rope swing on a tree limb, collecting acorns, a favorite tree near your playground, eating apple pie, etc. What made/makes that tree-connection special? Do other students have similar stories? What is it about trees, "green spaces," and nature that makes our connections so strong?

Review children's picture books from your library. Discuss story elements and illustration techniques that make the books enjoyable, then write and illustrate your own tree stories. Allow time for revision, and then share your stories with younger students. Photocopy your stories and share with parents and siblings, distribute copies to your local community center, submit copies to magazines (e.g., *Skipping Stones*, www.skippingstones.org/), or post on NYRP's website (www.nyrp.org/).

Vocabulary:

None.

Suggested Reading List:

Hosta, Dar. 2007. *If I were a tree*. Brown Dog Books. 0972196730.

Teacher Resources:

New York Restoration Project. 2008. www.nyrp.org/

Skipping Stones Magazine. 2008. www.skippingstones.org/

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WEEK	1	ACTIVITY	Trees and Planet Earth
		1 _B	I know we've met before... but how? (continued)
		References: Kriesberg, Daniel. 1999. <i>A sense of place: Teaching children about the environment with picture books.</i> Teacher Ideas Press. 1563085658.	

WEEK
1

ACTIVITY
2_A

Trees and Planet Earth

How can I get to know a tree?

Location: Outside.

Materials: A box; white paper; crayons or colored pencils; flat surfaces to do leaf rubbings on, like a notebook or a clipboard; a nearby tree or trees.

Optional: A tree identification guide from your library.

Summary:

Students connect with trees by doing leaf rubbings and by using their senses.

Objectives:

State the fact that there are a variety of trees or types of trees; describe a way to identify a tree.

Hook:

"Today, we are scientists and we're going on an expedition to try to identify

the tree(s) in/near our schoolyard. Help me pack our supplies!" Ask students to hand you the crayons or colored pencils and the paper, and ask each student to get a notebook or a clipboard. (Optional: Take a tree identification guide.)

Go outside and gather students. How can we tell one tree from another? What's different about trees? Ask if any student has ever identified trees, and if so, how. Tell students that, today, you are going to get to know / identify the tree(s) by looking at the leaves. Have each student collect one leaf, being careful not to be destructive. To do a leaf rubbing: Lay a leaf on a flat surface so that you can see the veins in the leaf (the bumpy side). Lay a piece of white paper over it and rub over the leaf with a crayon turned on its side or with a colored pencil.

If you have a tree guide, use it to identify the tree(s). Ask students to label their rubbings with their name, date, and type of tree. If you don't have a guide, then look on the tree or on the ground for other "clues." Are there acorns on/around the tree? If so, then it's an oak. Are there "helicopters" on/around the tree? If so, then it's a maple or an ash. If there aren't any clues, then have students write three descriptions of the tree on their leaf-rubbing paper, e.g., the color and texture

of the bark, the shape of the tree, if the leaves were smooth or velvety, etc. Later, encourage students to use an online identification guide (see Teacher Resources).

Ask students to use their senses to "get to know" their leaf: Use their eyes to look, their noses to smell, and their fingers to feel it. Then have them put their leaves in a pile and turn around. Separate the leaves on the ground and then have students turn around and see if they can find their leaf. Repeat as time allows.

Do a quick check for understanding: Did students enjoy getting to know a tree? What specific part did they like the most? Thank students and give them a challenge: Have you ever noticed a tree in your neighborhood? Is it tall, beautiful...? I wonder what type of tree it is. How could you find out?" On your way home from school today, notice a tree and its leaves. How are the leaves similar to the leaves on our tree(s)?

Variations:

1. If it is autumn or winter and there are no leaves on the trees, students can identify the tree(s) using leaves that have fallen to the ground, fruit or nuts from the tree, bark, or twigs. Many trees also have distinctive shapes or growth habits.

2. (Adapted from Kriesberg, 1999.) Before class begins, collect pairs of different types of leaves from nearby trees (you can have duplicate pairs). In class, give a leaf to each student and have them find a match. Then go outside and see if students can find the tree that their leaf came from.

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Trees and Planet Earth

What's it like to be a tree? (continued)

Extensions:

- **Tree map.** Draw a map of the schoolyard or make a three-dimensional schoolyard model and place it on a table. Add leaf rubbings to the map; use pinecones, sticks, or decorated paper towel tubes to represent trees on the model and add a key. Surprise students by hiding several secret treasures in the schoolyard; put treasure icons on the map/model and key. Break students into teams; have each team search for a different treasure. Use treasures that are tree-related, such as pencils or small notepads. Challenge another class to use the map/model to identify the trees or to find secret treasures.
- **Schoolyard guide.** Create a guide to the trees and green spaces in your schoolyard. Photocopy the guide for parents and visitors.
- **Reflections.** Start your own field or nature journals using memo tablets, downloaded journal pages, or plain paper in a three-ring binder. Go outside for 10-15 minutes a day, if possible; on rainy days, have students stand at your classroom windows. Students can even sit in their seats and close their eyes—our senses can be used to connect to any environment! Encourage students to add a variety of elements, such as sketches, free writing, poetry, thoughts and reflections. Guide students through the first week of entries. See “Teacher Resources” for journal websites, a list of books written in field journal formats, and a list of books to inspire young journalists.
- **Naturalists.** Read excerpts from the works of famous naturalists, such as Henry David Thoreau (*Walden*), Aldo Leopold (*A Sand County Almanac and Sketches Here and There*), and Rachel Carson (*Under the Sea-Wind*, *The Sea around Us*, and *The Sense of Wonder*).

- **Natural art.** (Adapted from Kriesberg, 1999.) Create tree-inspired works of art with leaves (use the leaves from the leaf rubbings), sticks, fruit or nuts, tree flowers, and pieces of loose or fallen bark; add other natural artifacts, such as rocks and feathers collected from the area around your school. Give students a variety of art materials, such as glue, paint, clay, and string. Label the finished artwork and display it in your school.

Vocabulary:

None.

Suggested Reading List:

Iverson, Diane. 1999. *My favorite tree: Terrific trees of North America*. Dawn Publications. 1883220939.

Matsen, Brad. 2005. *Go wild in New York City*. National Geographic Children's Books. 0792279824.

Morgan, Jancy. 2007. *If this old tree could talk to me!* Leathers Publishing. 1585974390.

Morrison, Gordon. 2008. *Nature in the neighborhood*. Houghton Mifflin/Walter Lorraine Books. 0547015488.

Teacher Resources:

Teaching/curricula guides:

Cornell, Joseph. 1998. *Sharing nature with children*. (20th anniversary edition, revised and expanded.) Dawn Publications. 1883220734.

Kriesberg, Daniel. 1999. *A sense of place: Teaching children about the environment with picture books*. Teacher Ideas Press. 1563085658.

Books written in field journal format:

Anosky, Jim. 1992. *Crinkleroot's guide to knowing the trees*. Simon & Schuster Children's Publishing. 0027058557.

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WEEK
1

ACTIVITY
2c

Trees and Planet Earth

What's it like to be a tree? (continued)

Arnosky, Jim. 1993. *Crinkleroot's guide to walking in wild places*. Aladdin. 0689717539.

Powzyk, Joyce A. 1998. *In search of lemurs*. National Geographic Children's Books. 079227072X.

Pratt-Serafini, Kristen J. 2002. *Saguaro moon: A desert journal*. (Sharing Nature with Children Book). Dawn Publications. 1584690364.

Pratt-Serafini, Kristen J. 2001. *Salamander rain: A lake and pond journal*. (Sharing Nature with Children Book). Dawn Publications. 1584690178.

Websites with field/nature journal activities and printable journal pages:

Gisel, Bonnie J. 2002. (Sierra Club.) "Keeping a nature journal."
http://www.sierraclub.org/education/nature_journal.asp

National Wildlife Federation. 2008. "Create your own nature journal."
<http://www.nwf.org/kidzone/kzPage.cfm?siteId=3&departmentId=152>

Books to inspire young naturalists:

Atkins, Jeannine. 2000. *Girls who looked under rocks: The lives of six pioneering naturalists*. Dawn Publications. 1584690119.

George, Kristine O. 2007. *Old elm speaks: Tree poems*. Clarion Books. 0618752420.

Muir, John and Cornell, Joseph. 2001. *John Muir: My life with nature*. (Sharing Nature with Children Book). Dawn Publications. 1584690097.

Field guides

Arbor Day Foundation.
www.arborday.org/trees/treelD.cfm

Aronson, Steven. 1998. *Fandex family field guides: Trees*. Cards edition. Workman Publishing Company. 0761112049.

Burns, Diane. 1995. *Trees, leaves, and bark*. (Take-along guides.) NorthWord Books for Young Readers. 1559716282.

References:

Kriesberg, Daniel. 1999. *A sense of place: Teaching children about the environment with picture books*. Teacher Ideas Press. 1563085658.

WEEK
1

ACTIVITY
3_A

Trees and Planet Earth

Where are trees found?

Location: Inside or out.

Materials: Marker, whiteboard, picture of palm tree (included), scripts (included).

Summary:

Students play a Mad Lib-style game to learn about trees of the world.

Objective:

State the facts that there are a variety of trees and that different trees grow in different places around the world.

Variations:

1. After completing Script 1 as a class, give copies of the remaining scripts to three student teams. Teams can repeat as above or not act out the scripts; teams can also compete, e.g.: Round 1: As one team waits, the remaining students fill-in the script; the team that waited then acts out the script. Afterwards, the remaining students “vote” on their performance by clapping. Rounds 2 and 3: Different teams wait.

Hook:

Close your eyes and make ocean sounds. “Has anyone ever been to a beach where there are palm trees / Has anyone ever seen a palm tree? Today, let’s think about different types of trees and where they are found.” Show students a picture of a coconut palm (included); ask students to name the type of tree (coconut) and where it might grow (the tropics, Florida, Hawaii...). Can students think of other trees and their locations? Write students’ responses on the board.

Tell students that they are going to play a Mad Lib-style game to learn more about the trees of the world. Ask for several student volunteers that would like to “act out” a tree script as it is read. Ask the remaining students to name verbs, plural nouns, adjectives, etc., for Script 1, about the coconut palm. Remind students not to use offensive or crude language. After the script is filled in, read it to the class while the student volunteers try to act it out. Then read the “real” script while students listen or act it out.

Repeat with the remaining scripts as time allows.

Do a quick check for understanding: Have students vote on their favorite tree from the activity; encourage them to say the name of the tree and where it is found. Thank students and give them a challenge: Think of three ways that these trees are like our schoolyard tree(s).

Extensions:

- **World trees.** On a bulletin board, attach a large world map or cut continent shapes out of colored paper and label them. Add pictures/descriptions of coconut palms, giant redwoods, acacia trees, and cacao trees; use thumbtacks to mark the locations where they grow. Then read books about trees from around the world and add more pictures/descriptions. Introduce the books by adding thumbtacks to the map.
- **Tree research and presentation.** Focus on trees from a particular continent or region and conduct research. How big are the trees? What do their leaves, flowers, and fruit look like? Do the trees provide food, building supplies, or products for people? How about homes for animals? Encourage students to present their findings in different ways, like performing plays or by acting as news reporters.
- **Games!** Create a board game about world trees and the people and animals that depend on them. Use other games as models and combine favorite elements, such as the chutes of Chutes and Ladders, the real estate portion of Monopoly, the trivia-style questions of Trivial Pursuit, or the challenges of Cranium. Choose imaginative tree-related board designs, token pieces, cards, and spinners.

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WEEK 1	ACTIVITY 3 _B	Trees and Planet Earth	
		Where are trees found? (continued)	
Vocabulary: None.		Powzyk, Joyce A. 1998. <i>In search of lemurs</i> . National Geographic Children's Books. 079227072X.	
Suggested Reading List: Bash, Barbara. 2002. <i>In the heart of the village: The world of the Indian banyan tree</i> . Gibbs Smith, Publisher. 1578050804. Bash, Barbara. 2002. <i>Tree of Life: The world of the African baobab</i> . Sierra Club Books for Children. 1578050863. Cherry, Lynne. 2000. <i>The great kapok tree. A tale of the Amazon rainforest</i> . Voyager Books. 0152026142. Cherry, Lynne. 2004. <i>The sea, the storm, and the mangrove tangle</i> . Farrar, Straus and Giroux. 0374364826. Cherry, Lynne. 2001. <i>The shaman's apprentice: A tale of the Amazon rainforest</i> . Voyager Books. 0152024867. Chinery, Michael. 2000. <i>People and places (Secrets of the rainforest)</i> . Crabtree Publishing Company. 0778702308. Forsyth, Adrian. 2006. <i>How monkeys make chocolate: Unlocking the mysteries of the rainforest</i> . 2nd edition. Maple Tree Press. 1897066783. Iverson, Diane. 1999. <i>My favorite tree: Terrific trees of North America</i> . Dawn Publications. 1883220939. Kessler, Cristina. 2000. <i>My great-grandmother's gourd</i> . Scholastic. 0531302849. Kroll, Virginia L. 1998. <i>With love, to Earth's endangered peoples</i> . Dawn Publications. 1883220831. Lyman, Francesca. 2001. <i>Inside the Dzanga Sangha Rain Forest: Exploring the heart of Central Africa</i> . Tandem Library. 0613257138.		Pratt, Kristen J. 1992. <i>A walk in the rainforest</i> . Dawn Publications. 1878265539. Silver, Donald. 1998. <i>Tropical rain forest</i> . 1st edition. McGraw-Hill. 0070580510.	



Trees and Planet Earth

World Tree Script 1 + 2

1. Coconut palm, Sulu, Philippines, Asia. I am a coconut palm tree and I

_____ in the Philippines. I love the beach! Do you hear the

Verb

_____ crashing? My roots find water that filters through the

Plural Noun

_____ sand. See my bent trunk? It is _____,

Adjective

Adjective

but it has to hold up a lot of weight. Since I don't have any branches, all of my

_____ grow on top at my _____.

Plural Noun

Noun

_____ are _____ feet long! Coconuts are

Plural Noun

Number

_____, too. Some drop to the ground to make _____

Adjective

Adjective

plants and some are eaten by _____ and _____.

Plural Noun

Plural Noun

Coconut palm, Sulu, Philippines, Asia. "I am a coconut palm tree and I grow in the Philippines. I love the beach! Do you hear the waves crashing? My roots find water that filters through the crunchy sand. See my bent trunk? It is strong, but it has to hold up a lot of weight. Since I don't have any branches, all of my leaves grow on top at my crown. Some of my leaves are 20-feet long! Coconuts are heavy, too. Some drop to the ground to make new plants and some are eaten by people and animals."

2. Giant redwood, California, U.S.A., North America. I am a giant redwood tree

and I _____ in the _____ wilderness of California's

Verb

Adjective

northern forests. I am _____ years old and I am _____ feet tall! That

Number

Number

means that I am almost as tall as a _____! You might be surprised

Noun

to know that because my _____ don't go deep into the _____,

Plural Noun

Noun

my neighbor trees help to hold me up—our _____ "stick together"

Plural Noun

and our trunks block the wind like a _____.

Noun

Animals

and pests don't bother me—my _____ is over a foot thick!

Noun

Giant redwood, California, U.S.A., North America. "I am a giant redwood tree and I grow in the misty wilderness of California's northern forests. I am 400-years old and I am 300-feet tall! That means that I am almost as tall as a football field! You might be surprised to know that because my roots don't go deep into the soil, my neighbor trees help to hold me up—our roots "stick together" and our trunks block the wind like a wall (make wind sounds). Insects and pests don't bother me—my bark is over a foot thick!"



Things Made from Trees

World Tree Script 3 + 4

3. Whistling thorn acacia tree, Serengeti Plain, Tanzania, Africa. I am a whistling thorn acacia tree. I live in Africa on the _____ plains along with _____ and _____. I am covered with _____-inch long thorns and some shorter thorns, too. Ants drill holes in my _____ thorns, so that when the wind blows, I sound like a _____! The ants like to _____ the _____ nectar-drink that I make at the base of my _____. I have lots of _____ and they are small, but their small size keeps them from losing _____ to the hot, dry air.

Whistling thorn acacia tree, Serengeti Plain, Tanzania, Africa. "I am a whistling thorn acacia tree. I live in Africa on the sun-parched plains along with giraffes and elephants. I am covered with three-inch long thorns and some shorter thorns, too. Ants drill holes in my short thorns, so that when the wind blows, I sound like a whistle! The ants like to drink the sweet nectar-drink that I make at the base of my leaves. I have lots of leaves and they are small, but their small size keeps them from losing moisture to the hot, dry air."

4. Cacao tree, Amazon River Basin, Brazil, South America. I am a cacao tree and I _____ in the tropical rainforests of Brazil. I thrive in the _____ understory level and grow to about _____ feet tall. I have _____ red flowers that are pollinated by _____ by _____; my fruit is a _____ yellow pod that looks like a _____ and sometimes grows right on my _____. You know me by my _____—people call my pounded seeds chocolate!

Cacao tree, Amazon River Basin, Brazil, South America. "I am a cacao tree and I live in the tropical rainforests of Brazil. I thrive in the shady understory level and grow to about 15-feet tall. I have small red flowers that are pollinated by flies; my fruit is a bright yellow pod that looks like a melon; and sometimes grows right on my trunk. You know me by my seeds—people call my pounded seeds chocolate!"



WEEK 1

ACTIVITY
4_A

Trees and Planet Earth

What products do we get from trees?

Location: Inside.

Materials: Marker, whiteboard, scavenger list (included)—one for each team of students, markers or pencils.

Summary:

Students learn about tree products made from wood, wood pulp, tree sap, and cork and search for tree products on a classroom scavenger hunt.

Objectives:

List at least five products that come from trees and

state the importance of trees as sources for products used on a daily basis; state the fact that different parts of trees, like hard inner wood, wood pulp, tree sap, and cork, are used to make products.

Hook:

Think out loud: “Wow! I’m making a list of all the things that I’ve used today that come from trees—tree products. I can think of 10 or 15 things right now. How about you guys? What tree products do you use?” List students’ answers on the board, then briefly discuss the answers, grouping them into categories: Things made from wood; things made from wood pulp (ground-up wood); things made from tree sap (the water and nutrients that move through a tree); and things made from cork (the fibers under tree bark) (see Vocabulary).

Tell students that they are going on a scavenger hunt around the classroom to find things made from trees. Have students get into four teams; each team should gather around a “home base”, e.g., a desk or table.

Round 1: Place a copy of the scavenger list facedown on each teams’ base. On “go,” teams turn over their list and have 30 seconds to find as many products as possible; the team that finds the most products wins the round. Rules: 1.) The list must remain on home base; 2.) the products must remain in their original locations; 3.) students may use a marker or pencil to check products off the list; 4.) after 30 seconds, each team should count the number of products found and

then must turn the list facedown. Class discussion: How did it go? Are your strategies for finding the products working? Are you surprised that the products are made from trees?

Round 2: Play as in Round 1, except when the round is over, the team that found the most products should read their list (by category) and tell where the products were found in the room. (Note: If any team finds all of the products before the time is called, they should shout “We did it!” and play will stop.)

Class discussion/check for understanding: Which strategy for finding products worked the best? Did you find any products that weren’t on the list? Are you surprised to learn that all of these products are made from trees? Which product are you most surprised about?

Thank students and give them a challenge: When you get home today, take 30 seconds and see how many tree products you can find in your house. Try to find 10 things.

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Trees and Planet Earth

What products do we get from trees? (continued)

Extensions:

- **Hear ye, hear ye!** Create advertisements for favorite or most-used tree products. Cut pictures from old magazines and newspapers and glue them to poster paper. Label the parts of the products that come from trees and if they were made from wood, pulp, sap, or cork. Trace the products' histories: Where were the products manufactured? Where did the raw materials come from? Conduct a class survey on the number of products that have international "roots." Display advertisements for others to see; at the end of the display, attach a "Did You Know" questionnaire or fact page.
- **Learn about recycled paper.** Invite your town's recycling manager into the classroom to talk to students or conduct online research (See Scholastic's "Recycling Starts with You," <http://teacher.scholastic.com/lessonplans/recycling/> and the Paper Industry Association Council's School Recycling page, http://www.paperrecycles.org/school_recycling/index.html). Work on ways to reduce your overall paper consumption. Let parents know about your recycling efforts; host a parent night that your students lead.

Vocabulary:

Wood. A tree's hard inner fibers (heartwood) that give it structure and support. Trees used for wood products are "hardwood" trees, such as oaks, maples, cherry and walnut trees. Things made from wood: Furniture, beds, wood flooring and laminate flooring, lumber for housing and construction, rafters and trusses for roofs, building materials such as fiberboard and plywood, particle board (used in furniture and clipboards), wooden pallets, musical instruments, chopsticks, toothpicks, kitchen utensils, bowls, clocks, frames, outdoor furniture, baseball bats, toys, boats, and pencils.

Wood pulp. Ground-up wood, commonly used to make paper. Trees used to make wood pulp have soft inner wood ("softwood trees"), such as pines, spruces, firs, and hemlocks. Things made from wood pulp: Paper products (e.g., money, tickets, notebooks, lined paper, printer paper, construction paper, books, magazines, newspapers, artwork, posters, envelopes, wrapping paper, wallpaper, boxes, paper bags, toilet paper, paper towels, facial tissues, wax paper, and sandpaper.)

Tree sap. The water and dissolved nutrients that move from a tree's roots to the rest of the tree, or the water and dissolved sugars that move from a tree's leaves. Things made from tree sap: Latex used in rubber production (erasers), paint, chewing gum, and candy wrappers; resins used to make perfumes, incense, varnishes, tape, glue, cement, and skateboard decks. Synthetic resins are used to make plastic.

Cork. A substance derived from fibers found under tree bark. Things made from cork: Bulletin boards, bottle stoppers, fishing rods, fishing floats, woodwind instruments, and floor tiles.

Suggested Reading List:

Silverstein, Shel. 2005. *The giving tree*. HarperCollins. 0060840986.

Teacher Resources:

Scholastic. 2008. "Recycling starts with you." <http://teacher.scholastic.com/lessonplans/recycling/>

Things Made from Trees

Scavenger Hunt

Wood:



Desks
Bookshelves
Floor tiles
Clipboard
Pencil

Wood pulp:



Notebook
Lined paper
Printer paper
Construction paper
Book
Newspaper
Poster
Envelope
Box
Paper bag
Paper towels
Facial tissues

Tree sap:



Eraser
Paint
Glue
Tape

Cork:

Bulletin board



A tree product that's not on this list: _____.

A tree product that's not on this list: _____.

WEEK
1

ACTIVITY
5_A

Trees and Planet Earth

What food do we get from trees?

Location: Inside or out.

Materials:

Whiteboard; marker;
“Mystery” box (a box with question marks drawn on the sides); tree-food items placed in the box, such as cinnamon, maple syrup, a bag of walnuts, etc.

Optional: timer; a tree-food treat, such as small chocolate candies or apple slices.

Summary:

Students brainstorm lists of foods that come from trees and play a fun rhythm game about tree foods.

Objective:

List at least five foods that come from trees and state the importance of trees as sources of food eaten on a daily basis.

Have students sit in a circle.

Hook:

“I’m going to pull some things out of this Mystery Box. Turn to a partner and

try to figure out what they have in common.” Ask students to raise their hands when they are ready to guess (food items from trees), and then slowly pull the items out of the box. Ask students to name other foods from trees; list these on the board (see Teacher Resources).

Go around the circle and have each student name a tree-food item without repeating; this will be each student’s tree food. (If it helps, place the tree food items in the center of the circle where students can see them). Start a rhythm by slapping your legs and then clapping—keep the tempo slow at first. Then go around the circle to the left, with each student naming his or her tree food with the rhythm; see if you can make it all the way around without breaking the rhythm. Then try going around the circle to the right. Next, try increasing the rhythm; add a timer (optional) and try to make it around the circle in a given time. Optional: Enjoy a tree-food treat for doing a great job.

Do a quick check for understanding: Were you surprised by the number of foods that come from trees? What’s your favorite tree food? Thank students and give them a challenge: Try to find at least three tree foods in your dinner tonight and breakfast tomorrow.

Variations:

1. Have students think of new rhythms and play again.
2. Go around the circle randomly, with students naming their tree foods in no specific order. Try not to break the rhythm!
3. Go around the circle in one direction, with each student naming his or her tree food plus the previous tree food(s). Add a rhythm and try again. Then try to go around the circle randomly.
4. Have students switch their tree food with a partner, add a rhythm and try again.

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WEEK
1

ACTIVITY
5_B

Trees and Planet Earth

What food do we get from trees? (continued)

Extensions:

- **What's for dinner?** Have student pairs create a menu: Cut pictures of foods from magazines and analyze them for tree-related ingredients. Encourage students to choose a variety of foods that could serve as a main dish, dessert, and beverage. Tape or glue pictures to a piece of folded poster board; have students name their restaurant and write descriptions of their menu items, highlighting the connections to trees. Allow time for students to present their menus.
- **Amazing tree foods.** Have students form teams and then sit in a circle. Pass around some unusual tree foods, such as stick cinnamon, a mango, a whole coconut, a star fruit, a pomegranate, etc. Have each team work together to identify the items, with one student acting as a recorder. Encourage students to use their senses to help them guess what the foods are. The team with the most correct guesses wins.
- **Enjoy!** Bring a blender, cups, and some tree fruits into class and make and enjoy smoothies. (Suggestion: Orange juice, frozen peaches, and bananas*.) Have each student bring in a fruit and make a tree-fruit salad. Ask a parent volunteer to make chocolate chip cookies or apple spice muffins; place a copy of the recipe on an overhead projector and see if students can identify the ingredients that come from trees. Host a tree foods party; invite parents and school administrators; display tree projects and artwork.

* Note: Bananas, plantains, and pineapples come from plants classified as grasses (instead of trees).

Vocabulary:

None.

Suggested Reading List:

Burleigh, Robert. 2002. *Chocolate: Riches from the rainforest*. Harry N. Abrams. 0810957345.

Forsyth, Adrian. 2006. *How monkeys make chocolate: Unlocking the mysteries of the rainforest*. 2nd edition. Maple Tree Press. 1897066783.

Teacher Resources:

Examples of tree foods:

Fruits: Apples, apricots, breadfruit, cherries, coconuts, dates, figs, grapefruits, guavas, kumquats, oranges, lemons, limes, loquats, lychees, mangos, mulberries, papayas, peaches, pears, persimmons, plums (and prunes), serviceberries, star fruit, tamarinds, and tangerines.

Nuts: Almonds, Brazil nuts, cashew nuts, hazel nuts, macadamia nuts, pecans, pine nuts, pistachios, and walnuts.

Other foods: Avocados, apple cider vinegar, chocolate (cocoa, cocoa butter), cinnamon, coffee, maple syrup, olives, and soft drinks ("cola" comes from the kola nut).

Spices: Bay leaves, cinnamon, juniper berries, nutmeg, and mace.

Oils: Palm oil, palm kernel oil, olive oil, and walnut oil.

Used in jams, juice, marmalades, preserves, and salsas; as ingredients in cakes, pies, cookies, muffins, yogurt, etc; in alcoholic beverages, sodas, ciders, sports drinks, herbal teas, lemonade, etc.

WEEK **2**
ACTIVITY **1_A**

Trees and New York City

What is a city tree?

Location: Inside or out.

Materials:
Whiteboard, marker.

Optional: access to nearby trees.

Summary:

Students think of a working definition of “city tree” and brainstorm lists of city tree benefits.

Objectives:

List three benefits of having trees in the city; define “city tree;” list

specific places that trees are found in New York City or describe the types of places that trees are found (in parks, zoos, on streets, etc.); describe trees as being important to NYC and give evidence why.

Hook:

Act like you are a tourist getting ready to visit. “Oh, I just can’t wait to get to New York City. I want to see the Statue of Liberty, Times Square, the Empire State Building, and... oh, I can barely contain myself... the trees—I have to see the trees of New York City.” Gauge students’ responses.

Ask students to close their eyes and think of all the places in the city that they see trees; list these on the board. Have students ever been to famous parks (like Central Park, Bryant Park, Battery Park, Gramercy Park, Prospect Park, etc.); botanical gardens (like The New York Botanical Garden, Brooklyn Botanic Garden, etc.); or other New York City places with lots of trees (like Bronx Zoo, Governor’s Island, Alley Pond Environmental Center, etc.)? Prompt students, if necessary, by suggesting that they look at the street in front of their home, in a nearby park or playground, near a favorite shopping center, in a vacant lot, in front of a library, etc. Discuss the fact that there are many different places in the city where trees are found or planted.

Ask students to picture particular places where there are trees growing in New York City (Optional: go outside and look at trees in or near your schoolyard). What do these trees add to the City and our lives? How are they beneficial? List students’ answers, and then introduce

the following categories of benefits: Environmental benefits (such as cleaning the air, providing habitats for animals, etc.), economic benefits (such as reducing air conditioning costs with shade in the summer, reducing heating costs by blocking wind in the winter, increasing property values, etc.); and health and lifestyle benefits (such as adding aesthetic beauty, giving us a place to play and relax, etc.). (Note: Some benefits can be placed in more than one category.) Discuss the fact that there are many different reasons why trees are found or are planted in the city.

Do a quick check for understanding: Ask students to think of a working definition of “city tree”: a tree that grows in the city and has many benefits. Thank students and give them a challenge: Think of three reasons how you personally benefit from city trees.

Extensions:

- **A “tree-mendous” place to visit!** Create a fun travel brochure or guide to the trees of New York City. Include a map and/or highlight specific places in all five boroughs. Cut pictures from magazines, newspapers, or other travel brochures. Find out some facts about trees in the City and list these in a “Did You Know” section. See MillionTreesNYC for a list of tree facts (click on “NYC’s Urban Forest and You”) (www.milliontreesnyc.org/html/home/home.shtml).
- **Get out there!** Plan a field trip to one of New York City’s many green spaces. Contact the NYC Department of Parks and Recreation (at <http://nycgovparks.org/index.php>) for information on parks and Urban Park Rangers programming. Connect with a park or garden in your community; contact New York Restoration Project, NYRP (at www.nyrp.org/), about programming, special events, and restoration/volunteer opportunities.

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WEEK 2	ACTIVITY 1 _B	Trees and New York City
		What is a city tree? (continued)
		<p>Vocabulary: None.</p> <p>Suggested Reading List: Matsen, Brad. 2005. <i>Go wild in New York City</i>. National Geographic Children's Books. 0792279824.</p> <p>Udry, Janice M. 1987. <i>A tree is nice</i>. HarperTrophy. 0064431479.</p> <p>Teacher Resources: MillionTreesNYC. 2008. www.milliontreesnyc.org/html/home/home.shtml</p> <p>New York Department of Parks and Recreation. 2008. http://nycgovparks.org/index.php</p> <p>New York Restoration Project. 2008. www.nyrp.org/</p>



WEEK
2

ACTIVITY
2_A

Trees and New York City

How do you do, tree?

Location: Outside.

Materials:

Whiteboard, marker,
access to a nearby
tree.

Summary:

Students think critically
about their oxygen
supplies and then count
the number of trees
around the schoolyard.

Objectives:

Discuss the fact that much of students' oxygen for breathing comes from trees; describe trees as being important to their health/well-being.

Hook:

Start by taking some deep breaths or do some exercises and breathe deeply. "Ah... air to breathe." Ask students to join you. "We get so many benefits from trees, but one of my personal favorites is oxygen."

Ask students what they know about photosynthesis (see Vocabulary); write their answers on the board. Briefly discuss photosynthesis and how trees give us oxygen to breathe.

Ask students to think about trees in the city, and how students feel when they are in a natural area with trees or when they are playing outside in a park. Does it seem like they can breathe easier outside or in nature? Does the air seem clean? What is it about "green spaces" that makes us feel good?

Discuss oxygen supplies: Each person in the world needs the oxygen produced from (approximately) one tree in order to survive every day. "I was just wondering: Where is your oxygen coming from today?" Gauge students' responses and then count the number of students in the classroom; ask if students think that there are enough trees (around the school) to provide them with oxygen for the day. Ask students how many family members they have at home; ask about the number of students and faculty in the school and their families. Where does our oxygen come from?

Discuss the fact that much of the world's oxygen is produced by trees in tropical rainforests, but trees in cities have a big impact on air quality.

Go outside and find a city tree; look for and then count nearby trees. Do students feel like there are enough trees around the school (to provide oxygen or quality air to breathe)? Stand near a tree: What if you really were dependent on this one tree to supply your oxygen for the day? What would you do? Would you feel like "claiming" it? How would you feel (differently) about this tree / how important would it become?

Do a quick check for understanding: Why are city trees so important? Thank students and give them a challenge: Think about your need for oxygen for every breath, every day, and where that oxygen comes from. Can you think of two ways that you can help ensure that there is enough oxygen/clean air to breathe?

Extensions:

- **Oxygen Freeze Tag.** Play a game outdoors about trees and oxygen. Phase 1: Have students place five Hula Hoops® (trees) on the ground in a wide area. On "go," students run through the playing area, trying to get one foot inside a Hoop; however, students cannot stand inside the Hoops—they must keep moving. On "stop," any student with one foot inside a Hoop is "safe" with enough oxygen to breathe; the rest of the students are "frozen." Play several rounds and then quickly discuss the results: Was everyone safe (with enough oxygen) with five trees?

Phase 2: Reduce the number of Hoops to two. Students will likely hover close to the Hoops. Discuss: How did reducing the number of Hoops (trees) affect the game?

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WEEK **2** ACTIVITY **2_B**

Trees and New York City

How do you do, tree? (continued)

Extensions (continued):

Phase 3: Have students run by the two Hoops as before, but this time the teacher will act as air pollution or “bad air” and will try to tag students; tagged students must hop on one foot until they can step into a Hoop. After students step into a Hoop, they can run again until “stop” is called; again, any student with one foot inside a Hoop is “safe” with enough oxygen to breathe; the rest of the students are “frozen.” Discuss: How did the “bad air” affect the game? How might air pollution affect you on a daily basis?

- **Air pollution.** (Adapted from the Franklin Institute, 2008) Trees help clean the air by trapping pollutants such as dust, windblown dirt and factory soot, tiny pieces of trash, and vehicle exhaust. How much and what types of pollution are in the air you breathe? Construct particle collectors: Cut two frames (of the same size) out of cardboard; tape plastic wrap to one frame, lay the other frame on top, and tape the frames together. Then spread a thin layer of petroleum jelly on the plastic wrap “window” (the petroleum jelly should be thin enough so that it cannot be easily seen). Hang the collectors in your schoolyard, near a busy street, or in your classroom; observe the amount and types of pollution found. Hang the collectors in all three places, predict where the most pollution will be collected and compare. Help students design related experiments. See the Franklin Institute’s “Stuff in the Air,” <http://sln.fi.edu/city/seed1.html>.

Suggested Reading List:

Notkin, Lenore. 1997. *The magic school bus gets planted: A book about photosynthesis*. Scholastic Paperbacks. 0590922467.

Vocabulary:

Photosynthesis. The process in which trees and plants convert energy from the sun (sunlight) into sugars and food energy. Chlorophyll and other green pigments in leaves capture sunlight, and then with water and carbon dioxide, produce sugars; oxygen is a by-product and is released into the atmosphere.

WEEK **2** ACTIVITY **3_A**

Trees and New York City

How do city trees help animals?

(Adapted from Kriesberg, 1999)

Location: Outside.

Materials:

Whiteboard, marker, access to a tree or trees.

Optional: Toy

animals, magnifying lenses, paper, coat hangers, or paper towel tubes, Hula Hoops®; animal identification guides (especially birds and insects).

Summary:

Students go outside and use their senses to search for animals that use trees as habitat resources.

Objectives:

List at least five animals that live in the city and use trees for part of their habitat requirements; describe habitat requirements, such as food, a home, and safety or shelter; describe a method for observing animals.

Hook:

Draw a picture of an

animal on the board (Optional: Show students a toy animal). Ask students what the animal needs to live. (Answers: Food, water, a home, and safety or shelter.) Draw a picture of a different animal (Optional: Show students a different toy animal). What does this animal need to live?

Have students sit in a circle. Brainstorm a list of animals that students have seen in the city, such as squirrels, birds, and raccoons; write these on the board. Tell students that for many animals, trees provide some of the necessary requirements for life, such as homes, food, and safety or shelter. The places that animals live and have their needs met are called “habitats” (see Vocabulary); city trees provide habitats for many animals.

Ask students to get into groups of four or five. Gather students near a tree or trees and ask them not to talk; have students use their senses: Do they see or hear any animals? If not, do they see any evidence of animals, such as a chewed pinecone, a feather, or a nest?

Assign groups to different areas on or around the tree or trees. Ask students to look for animals—where they go and if the tree(s) provides any homes, food, or safety (habitat requirements). Set a time limit for looking.

Optional: 1.) Use magnifying lenses. 2.) Record findings on a piece of paper (see Teacher Resources) or start a running list of animals seen. 3.) Have students look through coat hangers or paper towel tubes to focus their attention and change their perspective. 4.) If you only have access to one tree, have student groups place Hula Hoops on the grass, on the sidewalk, or on the side of the school building. 5.) Use animal identification guides.

Do a quick check for understanding: What animals did you find? How do city trees help animals? Thank students and give them a challenge: On your way home today and then back to school tomorrow, look at city trees: Try to find at least five animals; get a “bonus” for finding five different animals.

Extensions:

- **Speak-up for animals!** Choose a wild animal that lives in the city and conduct research: What does it do for food, water, a home, and safety or shelter? How does the animal interact with its habitat? If the animal could speak about life in the city, what would it say? Draw pictures of your animal or download images from the web; then add cartoon bubbles. Combine pictures of different animals and create a comic book. “Become” your animal during a class role-play session or write a play and perform it for other students.
- **New York City: For the birds!** Get some bird identification guides and start watching the birds near your school, or borrow songbird recordings from your local library and learn to recognize them by sound. Hang bird feeders near a classroom window. Watch the feeders at regular times each day and record the

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WEEK **2** ACTIVITY **3_B**

Trees and New York City

How do city trees help animals? (continued)

Extensions (continued):

number and types of birds seen; place a classroom bird watching journal in a central location or have students keep individual journals. Conduct experiments: Put different types of seeds in each feeder and record the birds' preferences for seed types; watch for birds that eat seeds off the ground. Want to collect data for scientists? Join *Project Feeder Watch* and send your bird-watching information via the Internet (<http://www.birds.cornell.edu/pfw/>).

- **Ready, set, draw!** Play our "City Animal Quick-Draw" game, similar to *Pictionary*. Just print and cut out the cards (samples included) and put them in a stack; give students scrap paper and pencils. Directions: Students draw pictures of city animals that rely on trees for one or more habitat requirement (food, a home, or safety/shelter) while their teammate(s) try to guess the identities; students who are drawing may only glance at the card for five seconds. The first teammate to guess the identity within 60 seconds gets one point for his/her team. If there are no correct guesses within 60 seconds, a new animal card is drawn from the stack. Single-starred cards are worth two points; double-starred cards are worth four points. Play for a given amount of time or until a team gets 10 points.

Vocabulary:

Habitat. A place where animals (and plants) live and have their needs met.

Suggested Reading List:

Bash, Barbara. 1992. *Urban roosts: Where birds nest in the city*. Little, Brown Young Readers. 0316083127.

Brenner, Barbara. 2004. *One small place in a tree*. HarperCollins. 0688171818.

Matsen, Brad. 2005. *Go wild in New York City*. National Geographic Children's Books. 0792279824.

Morrison, Gordon. 2008. *Nature in the neighborhood*. Houghton Mifflin/Walter Lorraine Books. 0547015488.

Silver, Donald. 1997. *One small square: Woods*. McGraw-Hill. 0070579334.

Teacher Resources:

Optional: Paper to record animals. For each student: Fold a piece of paper in half and turn the paper so that it looks like a book. On the front "cover" of the paper, write a title and your name (and later decorate it). On the inside "cover," list any animals that you could identify immediately, such as squirrels or chipmunks (or list any animal evidence). On the back "page," draw a picture of an animal that you saw. On the back "cover," draw pictures of the habitat elements supplied by the tree(s).

Project Feeder Watch. 2007. <http://www.birds.cornell.edu/pfw/>

Identification guides:

Boring, Mel. 1998. *Birds, nests, and eggs*. (Take-along guides.) NorthWord Books for Young Readers. 155971624X.

Boring, Mel. 1998. *Caterpillars, bugs, and butterflies*. (Take-along guides.) Gareth Stevens Publications. 0836820401.

Burns, Diane. 1995. *Trees, leaves, and bark*. (Take-along guides.) NorthWord Books for Young Readers. 1559716282.

Urban animal guides:

Bogue, Gary L. 2003. *The raccoon next door*. Heyday Books. 1890771716.

Hadidian, John (editor). 2007. *Wild neighbors: The humane approach to living with wildlife*. 2nd edition. Humane Society Press. 0974840084.

References:

Kriesberg, Daniel. 1999. *A sense of place: Teaching children about the environment with picture books*. Teacher Ideas Press. 1563085658.

Trees and New York City

Animal Identification Guide 1



Caterpillar



Owl



Pigeons



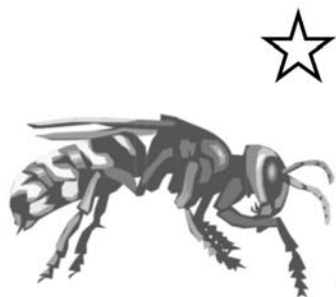
Hawk



Fly



Crow



Wasp



Tree Frog



Grasshopper

Trees and New York City

Animal Identification Guide 2



Bee



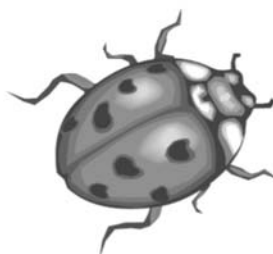
Chipmunk



Ant



Squirrel



Ladybug



Raccoon



Butterfly












Robin



Spider

Trees and New York City

Animal Identification Guide 3

 <p>Woodpecker</p>	 <p>Skunk</p>	 <p>Cat</p>
 <p>Bat</p>	 <p>Snail</p>	 <p>Fox</p>
 <p>Deer</p>	 <p>Coyote</p>	 <p>Mosquito</p>

WEEK **2** ACTIVITY **4_A**

Trees and New York City

What does a (city) tree need to live?

Location: Inside;
Optional outside.

Materials:

Whiteboard, marker, a bottle of water and an unnecessary item (see text) placed in a box, paper, pencils, overhead projector and overhead of city tree (included).

Optional: Access to a tree.

Summary:

Students “Think, Pair, Share” about the basic needs of trees and then focus on a particular city tree and whether its needs are being met or not.

Objective:

List the things that trees need to live, such as water, sunlight, and nutrients.

Hook:

“I’ve got some things in this box that I

really need in order to live.” Pull out a bottle of water and an item that is not necessary to live (make this humorous so that students will respond). Discuss: What are the differences between needs and wants?

Have students make two columns on a piece of paper; in the first column, list the things that they need to live (like food, water, a home...). Have students Think, Pair, Share with a partner and then ask a few students to share their lists with the class.

In the second column, ask students to list the things that trees need to live (water, sunlight, nutrients in the soil, and nutrients like carbon dioxide in the air). Have students Think, Pair, Share with a partner and then ask a few students to share their lists with the class. If necessary, discuss the process of photosynthesis (see Vocabulary). Explain that trees get plenty of carbon dioxide because carbon is released into the atmosphere (air) whenever fossil fuels (like gasoline and oil) are burned. Ask students to compare their needs with the needs of trees—are there any similarities?

Show students the overhead of the city or street tree. Are the trees’ basic needs being met? Think, Pair, Share: Why or why not? What might be a suitable caption or title for the picture? (For example, “City trees—hard at work,” etc.) Optional: Instead of using the overhead and projector, go outside and look at a city tree, then continue as above.

Do a quick check for understanding: What do trees need to live? Thank students and give them a challenge: Before school tomorrow, take notice of a city tree. Where is it? How big is it? How old do you think it is? Is it damaged or healthy? Are its basic needs being met? Why or why not?

Variations:

1. On the back of the piece of paper with the two columns, have students write a caption for the overhead of the city tree, then justify the caption with observations of the picture, feelings that the picture evokes, or their own experiences with city trees.

Extensions:

- **Too much carbon?** We all use fossil fuels like gasoline and oil; we ride in cars or buses, we heat and cool our houses, we fly thousands of miles in airplanes. Every time fossil fuels are burned, carbon is released into the atmosphere. Fortunately, trees help us by acting as carbon “sponges;” they absorb carbon dioxide through photosynthesis and then use it to grow and function. Trees have more than enough supply, however. Many scientists believe that there is too much carbon in the atmosphere, leading to “greenhouse” effects and global warming.

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WEEK
2

ACTIVITY
4_B

Trees and New York City

What does a (city) tree need to live? (continued)

Extensions (continued):

Take a few minutes to list all the ways that you use fossil fuels. Consider hidden fossil fuel use, such as the fuels used to manufacture and transport the things that you eat and the products you use. Try tracing a food item (like grapes grown off-season), a food ingredient (like the coconut in your favorite cookie), or a video game; how far did these items travel to get to you? Brainstorm a list of ways that you can reduce your carbon “footprint,” like turning off the lights when leaving a room, turning off computers and games when you’re done with them, recycling, and buying locally produced food and products. Learn more about it!

Vocabulary:

Photosynthesis. The process in which trees and plants convert energy from the sun (sunlight) into sugars and food energy. Chlorophyll and other green pigments in leaves capture sunlight, and then with water and carbon dioxide, produce sugars; oxygen is a by-product and is released into the atmosphere.

Suggested Reading List:

Matsen, Brad. 2005. *Go wild in New York City*. National Geographic Children’s Books. 0792279824.



Trees and New York City

What does a (city) tree need to live?



WEEK
2

ACTIVITY
5_A

Trees and New York City

What's it like to be a city tree?

(Adapted from Project Learning Tree, 1995)

Location: Inside;
Optional: outside.

Materials:
Whiteboard; marker;
3" x 3" squares of
blue, yellow, and
green construction
paper (two squares
of each color for
each student).

Optional: Use poker
chips to play.

Summary:

Students "become" city
trees and learn firsthand
about the challenges
of meeting basic needs
for life.

Objective:

Describe three challenges
of trees that grow in the
city for meeting basic
needs (having enough
water and nutrients, etc.).

Hook:

"Today, we're going to
play a game to see if you can make it as city trees."

Ask students what all trees need to live (water,
sunlight, nutrients in the soil, and nutrients like
carbon dioxide in the air); write students answers
on the board.

Have students stand about three feet apart and
imagine that they are trees in the city. Distribute the
colored paper squares on the floor around the
students so that the squares are one to two feet
apart. Tell students that the squares represent the
things that trees need to live, or requirements: The
blue squares represent water, the yellow squares
represent sunlight, and the green squares represent
nutrients from the soil and air.

Round 1: The object is for the "trees" to gather as
many requirements as possible, keeping one "root"
(foot) planted at all times. Students may step out with
one root and reach out with their "branches" (arms and
hands). On "go," have students collect the squares for
15-30 seconds, then discuss: Did every tree get some
water, sunlight, and nutrients? What could happen to
real trees that don't get enough requirements?
(Answer: They might not survive.) Ask any student

that didn't get at least one of each colored square to
hand in their colored squares and act as a teacher's
aide. Gather all the squares off the floor; these will be
used in the next round.

Redistribute the squares from the floor around the
remaining students. Ask students to think about the
fact that city trees are often bordered by sidewalks and
streets (concrete and asphalt) and the soil around
them is often compacted (or pressed down) from foot
traffic and walking paths; rain that hits compacted soils
runs off instead of soaking in. How do the roots of city
trees find enough water?

Round 2: The object is for the trees to gather as much
water as possible, keeping both roots planted at all
times because the roots have nowhere to grow;
students may only reach out with their branches. On
"go," have students collect the squares for 15-30
seconds then discuss: Did every tree get some water?
What was the effect of having your roots stuck in one
spot? What could happen to real trees that don't get
enough water? (Answer: They might not survive—trees
must have water. Additionally, when a tree's roots
cannot grow down and outward, they often grow near
the soil's surface; trees with shallow root systems can
fall over with strong winds.) Ask any student that didn't
get at least one blue square to hand in their squares
and act as a teacher's aide. Gather all the squares off
the floor; these will be used in the next round.

Remove about half of the green nutrient squares, and
then redistribute the squares around the remaining
students. Ask students to think about the fact that city
trees often grow in poor soils with few nutrients. How
and where do city trees get enough nutrients to grow
and survive?

Round 3: The object is for the trees to gather as many
nutrients as possible, keeping both roots planted at all
times because the roots have nowhere to grow;
students may only reach out with their branches.

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WEEK **2** ACTIVITY **5_B**

Trees and New York City

What's it like to be a city tree? (continued)

On “go,” have students collect the squares for 15-30 seconds then discuss: Did every tree get some nutrients? What was the effect of having your roots stuck in one spot? What could happen to real trees that don’t get enough nutrients? (Answer: They might not survive. Trees without proper nutrients get weak and are susceptible to disease and pest infestations. Weak trees also break easily from wind and from the weight of snow and ice.) Ask any student that didn’t get at least one green square to hand in their squares and step to the side.

Are there any trees left? Congratulate these trees!

Do a quick check for understanding: What’s it like being a city tree? Thank students and give them a challenge: On your way home today, take a good look at a particular city tree. Consider the challenges that many city trees face; does this tree face the same challenges? Is the tree able to meet its basic requirements?

Variations:

1. Trees can have too much water; flooded roots cannot breathe and too much water erodes (washes away) the top layers of soil, depleting the remaining soil of nutrients. Scenario: It’s spring and has been raining “cats and dogs!” The storm sewers are backed up and the streets are flooded! Ask any student that got four or more blue squares to hand in their squares and step to the side.

2. Scenario: There’s a drought in the city and it hasn’t rained for weeks! The top layer of soil is dry and dusty; tree roots are stuck with no place to grow. Reduce the blue squares by half and play another round.

3. Scenario: Someone backed their moving van down a long row of trees, breaking off limbs; other trees had broken limbs from vandalism and from winter’s snow and ice. Play another round where students can only use one branch to get their requirements.

Extensions:

- **Super trees.** City life can be tough—fortunately, there are some pretty resilient trees that not only meet their everyday requirements, but also thrive! According to MillionTreesNYC, the London plane tree is the number-one street tree in New York City; these trees are resistant to drought and air pollution; they have big leaves and grow tall and shady. Other common trees in New York City are Norway maples, honey locusts, ginkgos, and sweet gums. What types of trees grow around your school? What characteristics make them good city trees? Use a tree identification guide to find out and then create a display or guide.

- **Lucky for us.** City trees do live in cramped quarters, trap air pollution, and take the heat from buses and traffic, but thank goodness that they do! What would our sidewalks be like without trees? What would our air quality be like? What if we didn’t have a shady tree to stand under? Reflect on the importance of trees in the city; read these famous quotes, and then write your own stance or belief statement (Sources: en.thinkexist.com/, www.gardendigest.com/humor.htm.)

“For in the true nature of things, if we rightly consider, every green tree is far more glorious than if it were made of gold and silver.” — **Martin Luther**

“A city without trees is like a world without poetry and music.” — **Henry F. Arnold**

- **How’s this city tree doing?** Have students use the questionnaire (included) to rate how their neighborhood trees are faring.

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WEEK 2	ACTIVITY 5 _C	Trees and New York City
		What's it like to be a city tree? (continued)
		<p>Vocabulary: None.</p> <p>Suggested Reading List: George, Kristine O. 2007. <i>Old elm speaks: Tree poems</i>. Clarion Books. 0618752420.</p> <p>Matsen, Brad. 2005. <i>Go wild in New York City</i>. National Geographic Children's Books. 0792279824.</p> <p>Silverstein, Shel. 2005. <i>The giving tree</i>. HarperCollins. 0060840986.</p> <p>Teacher Resources: MillionTreesNYC. 2008. www.milliontreesnyc.org/html/home/home.shtml</p> <p>The Spirit of Gardening. 2007. www.gardendigest.com/</p> <p>ThinkExist.com Quotations. 2006. www.thinkexist.com/</p> <p>References: Project Learning Tree. 1995. <i>Environmental education activity guide: Pre K-8</i>. 3rd edition. American Forest Foundation.</p>



Trees and New York City

Extension: On a Scale of 1-10, How's This City Tree Doing?

Use the questions below to help you look closely at a city tree. Are the tree's basic requirements being met? Start by giving the tree a perfect score of "10."

		Score
		10
1.	Is there a street, sidewalk, or parking lot nearby? Hard surfaces cramp tree roots, repel water, and reflect heat up into the tree. Hard surfaces nearby, subtract 1; no hard surfaces, write a "0."	
2.	Are there weeds growing around the base of the tree or vines growing up the tree (don't touch--they might be poison ivy vines)? Weeds and vines grow fast and pull water and nutrients from the soil that the tree needs. Weeds or vines, subtract 1; no weeds or vines, write a "0."	
3.	Is there mulch or a grate around the tree? Mulch and grates hold moisture in the soil, keep the soil from being washed away, and keep the soil from being compacted. No mulch or grate, subtract 1; mulch or grate, write a "0."	
4.	Are there footpaths (packed trails where people walk) around the tree? Footpaths compact the soil and make it hard for tree roots to breathe and find water. Footpaths, subtract 1; no footpaths, write a "0."	
5.	Is the tree growing on or near a bus route? Vehicles like buses blow off a lot of heat and lower the air quality with carbon emissions. Trees absorb the heat and the carbon; over time, they can lower the health and immunity of trees. On or near a bus route, subtract 1; no bus route, write a "0."	
6.	Are the tree's roots exposed (maybe they are growing over a curb or sidewalk). Exposed roots means that the tree has to "look" for water on the surface rather than deep in the ground. Exposed roots can be damaged by foot traffic and mowers; if the tree's roots are on the surface, it can be blown over. Exposed roots, subtract 1; no exposed roots, write a "0."	
7.	Is the tree tall and upright or is it leaning? Trees that are leaning are easily knocked over or blown over. Young trees, especially, need to be staked so that they won't lean. Leaning, subtract 1; not leaning, write a "0."	
8.	Has the tree been damaged? Look for broken branches and scars on the tree trunk. Damage can come from mowing equipment, snow removal, insects and disease, vandalism (like carving names and breaking branches...), etc. Damage, subtract 1; no damage, write a "0."	
9.	Does the tree have a layer of pollution on its leaves? Take a tissue and lightly rub several leaves; then look: Is there dirt on your tissue? Tiny particles stress the tree by lowering photosynthesis and respiration (breathing). Pollution on the leaves, subtract 1; no pollution, write a "0."	
Final Score		

WEEK **3** ACTIVITY **1_A**

Trees and New York City Neighborhoods

What are the benefits of trees in my neighborhood?

Location: Inside.

Materials:
Whiteboard, marker.

Summary:

Students compare overheads of a landscape with trees and the same landscape without trees and list the benefits of trees in their neighborhood.

Objective:

List at least three benefits of having trees in students' neighborhoods and discuss plausible effects of adding more trees.

Hook:

Start writing a list of neighborhood locations. "Who can help me think of places in our neighborhood?" List as many specific neighborhood locations as possible, such as your school, libraries, fire stations, malls, stores, and parks or community gardens. Then consider each one: Are trees growing there? Where are trees found in our neighborhood?

Ask students to list the benefits of having trees in their neighborhood, such as giving them places to play, places to explore, and places to relax (see Teacher Resources); write these on the board. Then use pictures of a neighborhood landscape with trees and the same landscape without trees and ask students to respond: How did each picture make you feel? Is the place without trees a place that you would like to visit? Why or why not? Try to add to the list of benefits.

Return to the list of neighborhood locations and then focus on specific examples. School: What would be the effect of adding more trees or green space to your schoolyard? How would it affect learning, time spent during recess, or attitudes in general? Do students enjoy having class outside? Neighborhood streets: What would be the effect of adding more trees or green space to the streets in front of your homes? How would it affect your time spent indoors and out? How would it affect your attitudes and those of your families and neighbors? Stores: What would be the

effect of adding more trees or green space to the areas around stores? Would it change your attitude about shopping in those places? How? Discuss locations as time allows.

Do a quick check for understanding: What do trees add to your neighborhood? Thank students and give them a challenge: On your way home today, compare places with trees and green spaces to places without trees and green spaces. What differences do the trees and greenery make?

Extensions:

- **In the neighborhood.** Have students make leaf rubbings of trees near their homes or ask students to sign up to make rubbings at specific locations. (Students should write the location and date on each rubbing.) In class, identify the trees using identification guides from your library, then create a map display of the neighborhood and add the leaf rubbings to the map. Post the map in a school hallway along with a questionnaire about the importance of trees and access to green spaces. Make the map "come alive" by attaching interviews with neighborhood citizens (and students): Ask neighbors about their favorite trees, a favorite activity to do outside, a tree-story from their childhood, etc. Take photographs of your neighbors while they are outside and add them to the map, as well. Ask your community center if they would like to display the map after it has been at your school.
- **A walk around your block.** (Adapted from Kriesberg, 1999) Try to free write about this for 10 minutes: Take some visitors on a walk through your neighborhood. Where would you take them? What are you proud of? What would you avoid?

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WEEK
3

ACTIVITY
1_B

Trees and New York City Neighborhoods

What are the benefits of trees in my neighborhood? (continued)

Extensions (continued):

- **As you see it.** What is beautiful about your neighborhood? What brings you joy? Ask local businesses to donate black-and-white disposable cameras and film processing and then photograph beauty in your neighborhood. Beauty can be found anywhere—in the trees and green spaces, in the people, in the animals, in the buildings and infrastructure, and even in vacant lots. Have each student select his/her favorite photographs and then write captions or descriptions. Mount the photographs on mats and display them at your school, your community center, or a local restaurant or art gallery.

Vocabulary:

None.

Suggested Reading List:

Disalvo-Ryan, Dyanne. 1994. *City green*. HarperCollins. 068812786X.

Fife, Dale H. 1996. *The empty lot*. Sierra Club Books for Children. 0871568594.

Silver, Donald. 1997. *One small square: Backyard*. McGraw-Hill. 007057930X.

Teacher Resources:

Some benefits of neighborhood trees: Trees give us places to...

1. **Play:** increases imagination and creativity; **exercise:** activity is fun and reduces stress; **be with our families and friends:** increases feelings of belonging.

2. **Explore:** increases feelings of awe, wonder, freedom, and self-empowerment; fosters independence.

3. **Relax, enjoy the aesthetics, beauty:** increases feelings of “balance;” **connect with the world:** increases feelings of wisdom, guidance, and empathy; **connect with oneself:** increases feelings of inner peace and happiness; **contemplate.**

References:

Kriesberg, Daniel. 1999. *A sense of place: Teaching children about the environment with picture books*. Teacher Ideas Press. 1563085658.

WEEK **3** ACTIVITY **2_A**

Trees and New York City Neighborhoods

How do trees in my neighborhood help me play?

Location: Outside.

Materials:
Whiteboard, marker.

Summary:

Students move forward and backward during a schoolyard game of “Tree, May I?” and think critically about the benefits of trees in the neighborhood as places to play.

Objectives:

Describe trees or green spaces as being important parts of their neighborhood; describe trees or green spaces as being important for outdoor play.

Hook:

“Today, I thought we’d go outside and play a game. Who’s interested?” Take students outside and get ready to play “Tree, May I?”

Game:

Divide the class into two teams. Ask both teams to line up a distance away from you (the tree) and then face you (this is the starting line). Give the directions to one team and allow them to move, and then give the same directions to the other team. For teams to be able to move forward, each student must reply “Tree, may I?” before moving or the whole team must move back to the starting line. In order to win, each student in the team must reach you. Use directions like those that follow or modify to fit the personalities of your class. Encourage students to invent their own motions for the directions given; however, motions must be reasonable or the entire team will have to go back to the starting line.

Examples of directions:

1. Take 2 giant redwood jumps forward.
2. Take 1 “tree-mendous” tree step forward.
3. Take 2 shady-tree slides forward.
4. Take 1 lumberjack step backward.
5. Take 3 apple jumping jacks forward.
6. Take 3 leaf twirls forward.
7. Take 4 squirrel steps forward.
8. Take 5 acorn baby steps forward.
9. Take 2 bumpy-bark bends forward.
10. Take 1 rotten-root step backward.

When one of the teams reaches you, congratulate them and then gather students. Discuss (write students’ comments on the board): What was fun about the “Tree, May I?” game (Being outside, connecting with nature and trees, etc.) How do students feel? (Happy, more awake, refreshed, etc.) Start a conversation about the fact that neighborhood (and schoolyard) trees and green spaces can give us places to play: Do students have a favorite outdoor place in their neighborhood that they like to play? What do they do there? Do they like to be there alone or with friends? How do they feel when they’re in that place? (See Teacher Resources.)

Do a quick check for understanding: What are some ways that we benefit from being outside around trees and nature? Thank students and give them a challenge: Think of their favorite place to play outside; list three specific ways that this place helps you. How is it important to you?

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WEEK **3** ACTIVITY **2_B**

Trees and New York City Neighborhoods

How do trees in my neighborhood help me play? (continued)

Extensions:

- **Secret places:** (Adapted from Kriesberg, 1999)
Children often have a secret or special play place somewhere outside. A secret place can be almost anything, from an actual hideout or fort to a favorite tree, a clump of bushes, or the space under a porch. Secret places are important because they provide independence and foster creativity and imagination. Ask students to draw a map to their secret place without revealing the exact location. Use pictures from magazines, natural objects from the place, photographs of the place, drawings, or anything that represents their special place. If students do not have a special place, ask them to create one that they would like to have.
- **Tree house!** Read children's books like *Andrew Henry's Meadow* (by Doris Burn) or *Miss Twiggley's Tree* (by Dorothea Fox) (see Suggested Reading List) and then create your own model tree houses. Use clay, recycled materials, and natural artifacts; add labels or descriptions and allow time for students to present their works of art.
- **I'd like to know.** Ask students about their attitudes towards play and nature and then develop and conduct a similar survey at your school. Would students rather play indoors or out? When playing outside, what kinds of places do students like (e.g., parks, playground, back yards, etc.)? What are students' favorite things to do outdoors? How often do students play in natural areas? Do students have access to natural areas? Use the survey to generate ideas about trees and green spaces in your neighborhood.

Vocabulary:

None.

Suggested Reading List:

Burn, Doris. 2005. *Andrew Henry's meadow*. 2nd edition. San Juan Publishing. 0970739923.

Fox, Dorothea W. 2002. *Miss Twiggley's tree*. Purple House Press. 1930900171.

Teacher Resources:

Some benefits of neighborhood trees: Trees give us places to...

1. **Play:** increases imagination and creativity; **exercise:** activity is fun and reduces stress; **be with our families and friends:** increases feelings of belonging.
2. **Explore:** increases feelings of awe, wonder, freedom, and self-empowerment; fosters independence.
3. **Relax, enjoy the aesthetics, beauty:** increases feelings of "balance;" **connect with the world:** increases feelings of wisdom, guidance, and empathy; **connect with oneself:** increases feelings of inner peace and happiness; **contemplate.**

References:

Kriesberg, Daniel. 1999. *A sense of place: Teaching children about the environment with picture books*. Teacher Ideas Press. 1563085658.

WEEK **3** ACTIVITY **3_A**

Trees and New York City Neighborhoods

How do trees in my neighborhood help me explore?

(Adapted from Kriesberg, 1999)

Location: Outside.

Materials:

Whiteboard; marker; one copy of the scavenger hunt (included), a pencil, and a clipboard for each student pair.

Summary:

Students search for natural artifacts in their schoolyard and think critically about the benefits of trees in their neighborhood as places to explore.

Objectives:

Describe trees or green spaces as being important

parts of students' neighborhoods; describe trees or green spaces as being important for outdoor exploration.

Hook:

"Today I would like to go exploring. Who would like to go with me on a scavenger hunt in the schoolyard?"

Ask students to form partners and then give each pair a copy of the scavenger hunt list, a pencil, and a clipboard. (Use the included list or make your own, depending on the area around your school. If you don't have any trees, then consider natural objects: A feather, a white rock, a mushroom, an animal sighting, something green, natural objects to make music, etc. If you like, add point values for difficult-to-find items.) The object is to find all the items on the list, but to leave items in their locations, undisturbed and unharmed.

After a given amount of time or when a student pair has found all the items on the list, gather students and discuss (write students' comments on the board): What was fun about the scavenger hunt? (Being outside, the freedom to explore, connecting with nature and trees, etc.) How do students feel? (Happy, more awake, refreshed, etc.) Start a conversation about the fact that neighborhood (and schoolyard) trees and green spaces can give us places to explore: Do students have a favorite outdoor place in their neighborhood that they like to explore? What do they do there? Do they like to be there alone or with

friends? How do they feel when they're in that place? (See Teacher Resources.)

Do a quick check for understanding: What are some ways that we benefit from being outside around trees and nature? Thank students and give them a challenge: Think of their favorite place to explore outside; list three specific ways that this place helps you. How is it important to you?

Extensions:

- **Explore your schoolyard!** (Adapted from Kriesberg, 1999) Consider the following activities to help students explore and connect to their schoolyard:

Hula Hoop® Looking. Ask students to form groups of four or five and then give each group a Hula Hoop or a ball of string. Have groups place their Hoops near trees or other plants, on the grass, or along a sidewalk, or use their string to mark off an area (including the areas around trees). Allow students to take some time to look for animals, plants, fungi, rocks, or even colors. Start a running list of everything that was found. Repeat the activity at different times of the year and add to the running list.

Framing Pictures. Have students focus on natural areas using coat hangars or paper towel tubes as frames. Ask students to hold the frames against a tree, the ground, the sky, the school building, etc., and then to write, draw, or discuss what they see. Challenge students to write the longest possible list of objects seen.

Nature Art. Collect natural objects from around the schoolyard like leaves, sticks, acorns, maple "helicopters," feathers, flowers, rocks, etc., then use those objects to create works of art that symbolize the place. (Ask students not to collect living things or to pull plants from the roots.)

>>>

WEEK
3

ACTIVITY
3_B

Trees and New York City Neighborhoods

How do trees in my neighborhood help me explore? (continued)

Extensions (continued):

- **Vacant or not?** Vacant lots can be great places to explore; old building materials, cracked concrete, and even old tires provide habitats for many plants and animals. Arrange a field trip to a vacant lot near your school. First, stop and make sure that the lot is relatively safe, without dangerous materials (asbestos, etc.) or unknown substances. When students are there, set clear boundaries for looking and non-negotiable rules for behavior. Have students bring journals and then use activities like “Hula Hoop Looking,” “Framing Pictures,” or “Nature Art” (include found treasures). Discuss all the discoveries that students made and how they felt while exploring. Encourage students to explore similar spaces on their own and to keep a nature journal.

Vocabulary:

None.

Suggested Reading List:

Arnosky, Jim. 1992. *Crinkleroot's guide to knowing the trees*. Simon & Schuster Children's Publishing. 0027058557.

Arnosky, Jim. 1993. *Crinkleroot's guide to walking in wild places*. Aladdin. 0689717539.

Disalvo-Ryan, Dyanne. 1994. *City green*. HarperCollins. 068812786X.

Fife, Dale H. 1996. *The empty lot*. Sierra Club Books for Children. 0871568594.

Matsen, Brad. 2005. *Go wild in New York City*. National Geographic Children's Books. 0792279824.

Morrison, Gordon. 2008. *Nature in the neighborhood*. Houghton Mifflin/Walter Lorraine Books. 0547015488.

Silver, Donald. 1997. *One small square: Backyard*. McGraw-Hill. 007057930X.

Silver, Donald. 1997. *One small square: Woods*. McGraw-Hill. 0070579334.

Teacher Resources:

Some benefits of neighborhood trees: Trees give us places to...

1. **Play:** increases imagination and creativity; **exercise:** activity is fun and reduces stress; **be with our families and friends:** increases feelings of belonging.

2. **Explore:** increases feelings of awe, wonder, freedom, and self-empowerment; fosters independence.

3. **Relax, enjoy the aesthetics, beauty:** increases feelings of “balance;” **connect with the world:** increases feelings of wisdom, guidance, and empathy; **connect with oneself:** increases feelings of inner peace and happiness; **contemplate.**

References:

Kriesberg, Daniel. 1999. *A sense of place: Teaching children about the environment with picture books*. Teacher Ideas Press. 1563085658.

Trees and New York City Neighborhoods

Schoolyard Scavenger Hunt

- 🍏 Three different types of plants.
- 🍏 A stick that looks like the letter “L.”
- 🍏 A leaf that has been chewed by an animal.
- 🍏 A seed (acorn, nut...).
- 🍏 A bird’s nest or a squirrel’s nest (drey).
- 🍏 Shade.
- 🍏 Two different leaf shapes.
- 🍏 An animal in a tree.
- 🍏 The sound of leaves blowing in the breeze.
- 🍏 Moss, mushrooms, or lichens growing on the side of a tree.
- 🍏 Something red or orange.
- 🍏 Something that is interesting.
- 🍏 Something that you would like to remember.



WEEK
3

ACTIVITY
4_A

Trees and New York City Neighborhoods

How do trees in my neighborhood help me relax?

(Adapted from Kriesberg, 1999)

Location: Outside.

Materials:

Whiteboard; marker;
healthy snack, such
as apple slices.

Summary:

Students conduct a “Solo Silent Sit,” and then think critically about the benefits of trees in their neighborhood as places to relax.

Objectives:

Describe trees or green

spaces as being important parts of students’ neighborhoods; describe trees or green spaces as being important for relaxation outdoors.

Hook:

“Who would like to have a nice, relaxing class today?” Take students outside and ask them to find a place to sit, preferably on grass or near a tree or trees; offer a healthy snack to eat. Encourage students just to enjoy being outside.

After the snack, tell students that they are going to try a relaxation technique called “Solo Silent Sit.” Ask students to spread out and to find a place to be silent and listen for three to five minutes; assign spots if necessary. Encourage students to sit so quietly and be so still that the schoolyard goes on as if they weren’t there. Allow 30 seconds for everyone to get quiet and for everything to settle down; then maintain strict silence.

When the time is up, discuss (write students’ comments on the board): What do students think about the quiet time? (Some will probably like it; some will probably think it was too long.) What was enjoyable about it? (Being outside, connecting with nature and trees, etc.) How do students feel? (Happy, more awake, refreshed, etc.) Start a conversation about the fact that neighborhood (and schoolyard) trees and green spaces can give us places to relax, release stress, or “chill out”. Do students have a favorite outdoor place in their neighborhood where they like

to relax? (A park, playground, yard, etc.) What do they do there? Do they like to be there alone or with friends? How do they feel when they’re in that place? (See Teacher Resources.)

Do a quick check for understanding: What are some ways that we benefit from being outside around trees and nature? Thank students and give them a challenge: Think of their favorite place to relax outside; list three specific ways that this place helps you. How is it important to you?

Variations:

1. Try to do two consecutive “Solo Silent Sits.” Students may be more comfortable with the activity the second time.
2. After the “Solo Silent Sit,” ask students to free write about their experience.
3. Sit in two different locations, the first time near a tree and the next time on blacktop. How do the two experiences compare? Did students feel more or less connected, relaxed, at peace, etc., in one place or the other?
4. Sit in the same spot at different times of the year, e.g., in the spring and in the fall. How do the two experiences compare?

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WEEK **3** ACTIVITY **4_B**

Trees and New York City Neighborhoods

How do trees in my neighborhood help me relax? (continued)

Extensions:

- **Writing prompt.** Try to free write (for 10 minutes) about going outside—the moment that you switch from the indoors (built) to the outdoors (natural). What is this like? What thoughts do you have during the switch? How does the switch make you feel? What do you see?
- **Poetry and stance.** Reflect on the importance of trees and green spaces for relaxation; read these poems and then write your own stance or personal belief statement (Sources: en.thinkexist.com/, www.gardendigest.com/humor.htm).

*Tree, gather up my thoughts
like the clouds in your branches.
Draw up my soul
like the waters in your root.*

*In the arteries of your trunk
bring me together.
Through your leaves
breathe out the sky.*

—J. Daniel Beaudry, *Breath*

*Alone with myself
The trees bend
to caress me
The shade hugs
my heart.*

—Candy Polgar

Vocabulary:

None.

Suggested Reading List:

Fletcher, Ralph. 1997. *Ordinary things: Poems for a walk in early spring*. 1st edition. Atheneum. 0689810350.

George, Kristine O. 2007. *Old elm speaks: Tree poems*. Clarion Books. 0618752420.

Silverstein, Shel. 2005. *The giving tree*. HarperCollins. 0060840986.

Yolen, Jane. 2003. *Color me a rhyme. Nature poems for young people*. Boyd's Mill Press. 1590781724.

Yolen, Jane. 2003. *Least things: Poems about small natures*. Boyd's Mill Press. 1590780981.

Teacher Resources:

Some benefits of neighborhood trees: Trees give us places to...

1. **Play:** increases imagination and creativity; **exercise:** activity is fun and reduces stress; **be with our families and friends:** increases feelings of belonging.

2. **Explore:** increases feelings of awe, wonder, freedom, and self-empowerment; fosters independence.

3. **Relax, enjoy the aesthetics, beauty:** increases feelings of “balance;” **connect with the world:** increases feelings of wisdom, guidance, and empathy; **connect with oneself:** increases feelings of inner peace and happiness; **contemplate.**

The Spirit of Gardening. 2007. www.gardendigest.com/

ThinkExist.com Quotations. 2006. www.thinkexist.com/

References:

Kriesberg, Daniel. 1999. *A sense of place: Teaching children about the environment with picture books*. Teacher Ideas Press. 1563085658.

WEEK **3** ACTIVITY **5_A**

Trees and New York City Neighborhoods

How do trees help connect me to my neighborhood?

Location: Inside.

Materials:

Whiteboard; marker; four maps of NYC (students just need to be able to find the general proximity of their neighborhood—use road maps, tourist maps...); four pieces of chart paper; four markers.

Summary:

Students draw the connections between trees, their neighborhood, and themselves.

Objective:

State or draw one connection between trees or green spaces, students' neighborhoods, and themselves.

Hook:

"Today I thought that we would look at

some maps of New York City and try to find our neighborhood." Break students into four teams and give each team a map. Have teams look at their maps and try to find their neighborhood.

Discuss: Is our neighborhood just a name on a map? If not, what is it? Listen to student responses and then play a listing game. Give each team a piece of chart paper and a marker. For one minute, have teams list everything in their neighborhood: The trees, the grass, the sidewalks, the streets, the houses, the people, the animals, the pets, the vacant lots, the buildings, etc. When time is called, teams should count the number of items on their list, omitting any duplicate items. The team with the longest list "wins;" ask a few teams to read their lists.

Discuss: Did each team include trees (or nature) in their list? What are the benefits of trees in our neighborhood? How do trees help us? (Trees help us play, explore, relax, contemplate, connect with nature, etc.)

See if students can verbalize how trees connect them to their neighborhood, or ask them to "draw" the connections using the board. Assist students as necessary (See Teacher Resources).

Do a quick check for understanding: Are trees important for our neighborhood? Thank students and give them a challenge: On your way home from school today, imagine more trees in your neighborhood. How would it change things? How would it help?

Extensions:

- **Neighborhood design.** Have student teams choose places in the neighborhood, like the school, a park, a playground, a library, etc. Each team should draw their place (to an approximate scale) on a large sheet of paper and label nearby streets and landmarks; if possible include existing trees and green spaces. Then have students add trees and green spaces for play, exploration, and relaxation: Cut circles out of green paper to represent trees; cut pictures out of magazines to represent green spaces—flowers, grass, shrubs, water features, etc. Add pictures of city animals, bridges, walkways, and signs.

Allow time for teams to present their designs. What did they add and why? How would the new design change the place? How would the new design change people's attitudes towards the place? What effect could the new design have on the neighborhood as a whole?

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WEEK
3

ACTIVITY
5_B

Trees and New York City Neighborhoods

How do trees help connect me to my neighborhood? (continued)

Extensions (continued):

- **What do we have in common?** Tell students you are going to ask them some questions. If their answer is “yes,” they will stand up at their desks and then sit back down. Have the first questions be about general subjects, like favorite foods or music; relate the later questions to specific things in your particular neighborhood. Include questions about playing, exploring, and relaxing, etc., in nature.

Here are some possible starting questions:
Stand up if you...

Like to eat pizza.
Ask for extra helpings of broccoli.
Were born in New York City.
Have a younger sister at home.
Like solving word problems in Math.

4. We are important to our neighborhood, trees are important to our neighborhood; we’re all connected.

5. When we’re outside in our neighborhood playing, exploring, and relaxing, etc., we become a part of it and it becomes a part of us.

Vocabulary:

None.

Suggested Reading List:

George, Kristine O. 2007. *Old elm speaks: Tree poems*. Clarion Books. 0618752420.

Teacher Resources:

How do trees help connect students to their neighborhoods? Here are a few ways to phrase the connection:

1. We have positive experiences playing, exploring, and relaxing, etc., in our neighborhood because of trees. These experiences help us to know our neighborhood and connect us to it.
2. Because we play, explore, and relax, etc., in our neighborhoods, trees help give us a “sense of place.” Trees help us identify with our neighborhood.
3. Trees help to give us positive memories of our neighborhood; these positive memories connect us.



Trees and Me

How can I be a hero for trees?

(Adapted from Learning to Give, 2008)

Location: Inside or out.

Materials:

Whiteboard, marker.
(If outside, you may want to use chart paper and a marker; turn the chart paper the long way before writing.)

Summary:

Students list characteristics of heroes, learn about environmental stewards and stewardship, and consider their own talents that could be applied to stewardship behaviors.

Objectives:

List three specific heroes or types of heroes; list three characteristics of heroes; state the fact that

people can be heroes of the Earth; define “steward” or “stewardship” (see Vocabulary).

Hook:

Draw a big letter “T” on the board. “I was just wondering about heroes. Who can tell me a name (or type) of a hero?” Group responses into types of heroes: Actors and actresses, sports stars, political figures, religious figures, teachers, doctors, firefighters, policemen and policewomen, family members, service men and women, fictional characters, equal rights activists (like Martin Luther King or Rosa Parks), peace activists (like the Dalai Lama, Mahatma Gandhi, etc.). Write these categories on the board, down the left-hand side of the “T.” (You may need to make a distinction between heroes and idols.)

“What are some characteristics or qualities of heroes (or of these people)? What types of actions do they take?” (For example, they are kind, loyal, generous, brave, courageous, hard-working, smart, resilient, strong, have integrity, go above and beyond, take a stand, they rally other people, they are role models, they put others before themselves, etc.) Write students’ responses across the top of the right-hand side of the “T.”

Ask students to raise their hands if they have ever done anything heroic. Tell students that we all have heroic characteristics, and that being a hero involves “looking within” and “starting where you are.”

Discuss the fact that people can be heroes for the Earth and for trees, too. Ask students if they can name any famous or local environmental heroes (such as Rachel Carson, Al Gore, Aldo Leopold, John Muir, Jane Goodall, Henry David Thoreau, etc.). If not, ask them to look back at the list of hero characteristics and see if they can be applied to environmental heroes as well. Tell students that people who take care of the Earth and trees are sometimes called stewards. The act of caring for the Earth is called stewardship. Tell students that they can be stewards, too, and then brainstorm a list of stewardship behaviors (such as planting and taking care of trees, picking up trash, by recycling and getting others to recycle, etc.). Write these on the board.

Do a quick check for understanding: What are stewards? Thank students and give them a challenge: We all have unique talents that we can use to be heroes or stewards; we just have to “look within” and “start where we are.” What are your unique talents? What are you good at? What do you like to do? Think of two specific talents that you have that could be applied to stewardship behaviors. (For example, if you are good at writing letters, you could write to government officials to get funding for a cleanup.)

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WEEK **4** ACTIVITY **1_B**

Trees and Me

How can I be a hero for trees? (continued)

Extensions:

- **Play “Lemonade.”** (Adapted from Luvmour and Luvmour, 2007) Divide the class into two teams: Team A and B. Have teams face each other in the middle of the playing area. Set “safe” boundaries about 20 feet behind both teams. Round 1: Team A huddles and then decides on a type of hero (such as a firefighter, a doctor, a teacher, a parent, a grandparent, etc.) or a specific hero (such as Rosa Parks) that they will pantomime. Then Team B guesses. When someone from Team B guesses correctly, Team A races for their safety area; Team B chases. Anyone tagged from Team A switches teams. Round 2: Team B pantomimes and Team A guesses and chases.
- **Writing exercise.** Ask students to ponder this question and then free write for five-10 minutes: What is it about helping others (or animals, the Earth) and doing something positive that makes us feel good?

Vocabulary:

Stewards. People who take care of someone or something, especially the Earth.

Stewardship. The act of taking care of someone or something, especially the Earth.

Suggested Reading List:

Giono, Jean. 2005. *The man who planted trees. 20th anniversary edition.* Chelsea Green Publishing Company. 1931498728.

Hoose, Phillip M. 2002. *It's our world, too.* Tandem Library. 0613573080.

Lewis, Barbara A. 1995. *The kid's guide to service projects: Over 500 service ideas for young people who want to make a difference.* Free Spirit Publishing. 0915793822.

Lewis, Barbara A., Espeland, Pamela, and Pernu, Caryn. 1998. *The kid's guide to social action: How to solve the social problems you choose and turn creative thinking into positive action.* Revised edition. Free Spirit Publishing. 1575420384.

Locker, Thomas. 2002. *Walking with Henry: Based on the life and works of Henry David Thoreau.* Fulcrum Publishing. 1555913555.

Locker, Thomas. 2003. *John Muir: America's naturalist.* Fulcrum Publishing. 1555913938.

Locker, Thomas and Bruchac, Joseph. 2004. *Rachel Carson: Preserving a sense of wonder.* Fulcrum Publishing. 1555914829.

Muir, John and Cornell, Joseph. 2001. *John Muir: My life with nature.* (Sharing Nature with Children Book). Dawn Publications. 1584690097.

Sabin, Ellen. 2005. *The hero book: Learning lessons from the people you admire.* 1st edition. Watering Can. 0975986813.

References:

Learning to Give. 2008. “Power of one: Everyday heroes for the common good. Lesson 1: Heroes here and there.”
<http://www.learningtogive.org/lessons/unit112/lesson1.html>

Luvmur, Sambhava and Luvmour, Josette. 2007. *Everyone wins! Cooperative games and activities.* New edition. New Society Publishers. 0865715874.

WEEK **4** ACTIVITY **2_A**

Trees and Me

How can I help trees and Planet Earth?

Location: Inside.

Materials:

Whiteboard, marker, two overheads (included) and overhead projector, paper, pencils.

Summary:

Students listen to a story about the work of a young environmental steward, think critically about the stewards' talents and actions, and consider ways that they could apply their own talents to help trees and the Earth.

Objectives:

Describe one possible way to be a "hero" for the Earth; think critically about stewardship behaviors.

Hook:

Start by doing something related to one of your talents, such as singing, dancing, dribbling a basketball, drawing a picture, juggling, etc. (Remember, the object is to get students' attention; your talent doesn't have to be "refined.") "We all have special talents. Today we are going to think about ways that we can use those talents to be heroes or stewards of trees and the Earth." Give each student a piece of paper and a pencil and ask them to list three special talents that they have.

Read the story about Janine Licare to the class and then place the "Making a Difference" overhead (included) on the overhead projector; briefly discuss each question. Ask students to find a partner, and then ask if Janine's story appealed to them or inspired them in any way. Place the "You Can Make a Difference" overhead (included) on the projector. Ask students to write down the answers to the questions on their paper, then "Think, Pair, Share" with their partner. Allow some time for students to share their ideas with the class.

Do a quick check for understanding: Did you think of some ways that you can help trees and the Earth? Have a show of hands of students who are interested in going forward with an idea. Thank students and

give them a challenge: In addition to thinking of ways that you can use your unique talents, think about everyday actions that you can take; before school tomorrow, think of three specific ways that you can help trees and the Earth.

Making a Difference: Janine Licare and Kids Saving the Rainforest

Janine Licare was nine years old and wondered how she could make some spending money, so she and a friend, Aislin Livingstone, set up a roadside stand to sell their artwork—painted rocks. After a few days, they decided that their profits should go towards "something much more important." They asked a local hotel if they could start selling artwork in a corner of their restaurant, and so opened the *Kids Saving the Rainforest* store. Later, Janine and her friend started the official organization, *Kids Saving The Rainforest*, with the goals of saving the forest and animals in their home of Manuel Antonio, Costa Rica.

Since 1999, KSTR has purchased land and has built an animal rehabilitation center; has planted over 5,000 trees, runs a kid's camp every Saturday, operates an "environmental library" with over 1,800 environment-focused books, has published three children's books, has erected more than 120 "monkey bridges" so that monkeys and other animals can safely cross roads and power lines, and sells artwork by kids and local artisans with 100% of profits going to save the rainforest. KSTR also has a website with project ideas for kids, tropical rainforest facts, and information about adopting rainforest trees.

In Janine's own words, "With the help of volunteers, friends, classmates, and the community, we've gone a long way. I believe that kids can make a real difference. With your help, there's no limit as to how far we can go! Join us and do your part in saving the world!"

Source: Kids Saving the Rainforest. 2008.
<http://www.kidssavingtherainforest.org/>

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WEEK **4** ACTIVITY **2_B**

Trees and Me

How can I help trees and Planet Earth? (continued)

Extensions:

- **You can make a difference!** Help students plan for environmental work to help trees and the Earth. Have students choose ideas that make use of their own special talents and then help them write goals (e.g., “To sell artwork to buy an acre of tropical rainforest”). Next, turn the ideas and goals into proposals: Include lists of materials needed, approximate costs, and the time needed to plan and carry out the ideas; a timeline; lists of people and organizations that could help; and projects that could be used to jump start the ideas (e.g., writing letters to local businesses or posting notices at a community center). Decide to work together; turn individual ideas and goals into classroom efforts. Hold a competition and vote on the best proposals; involve school staff, other classrooms, parents and community members.
- **Plant a tree!** Trees act as carbon “sponges” by absorbing the carbon released from fossil fuels like gasoline and oil. We can help the Earth by reducing our carbon “footprint” and by planting trees so that more carbon is absorbed. Want to plant a tree in a tropical rainforest? See organizations like *Kids Saving the Rainforest* (<http://www.kidssavingtherainforest.org/>) and have a tree sapling planted in a reforestation area in your name. To act locally, join MillionTreesNYC (<http://www.milliontreesnyc.org/html/home/home.shtml>) and plant trees, volunteer at community events, learn how to take care of trees, and get involved in tree stewardship.
- **Famous words and stance.** Reflect on the importance of being stewards of the Earth and trees; read these famous quotes and then write your own stance or personal belief statement (Sources: en.thinkexist.com/, www.gardendigest.com/humor.htm).

“He that plants trees loves others beside himself.”

— Thomas Fuller

“We must protect the forests for our children, grandchildren and children yet to be born. We must protect the forests for those who can’t speak for themselves such as the birds, animals, fish and trees.”

— Chief Edward Moody, Nuxalk Nation

Vocabulary:

None.

Suggested Reading List:

Crandell, Rachel. 2008. *The forever forest: Kids save a tropical treasure*. Dawn Publications. 1584691026.

Geisel, Theodore Seuss. 1971. *The Lorax*. Random House Books for Young Readers. 0394823370.

Giono, Jean. 2005. *The man who planted trees*. 20th anniversary edition. Chelsea Green Publishing Company. 1931498728.

Hoose, Phillip M. 2002. *It’s our world, too*. Tandem Library. 0613573080.

Lewis, Barbara A. 1995. *The kid’s guide to service projects: Over 500 service ideas for young people who want to make a difference*. Free Spirit Publishing. 0915793822.

Lewis, Barbara A., Espeland, Pamela, and Pernu, Caryn. 1998. *The kid’s guide to social action: How to solve the social problems you choose and turn creative thinking into positive action*. Revised edition. Free Spirit Publishing. 1575420384.

Morgan, Jancy. 2007. *If this old tree could talk to me!* Leathers Publishing. 1585974390.

Nivola, Claire. 2008. *Planting the trees of Kenya: The story of Wangari Maathai*. Farrar, Straus and Giroux. 0374399182.

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WEEK 4	ACTIVITY 2 _C	Trees and Me	
		How can I help trees and Planet Earth? (continued)	
		<p>Ryder, Joanne. 1999. <i>Earthdance</i>. Henry Holt and Co. 0805062319.</p> <p>Schimmel, Schim. 1994. <i>Dear children of the Earth</i>. NorthWord Books for Young Readers. 1559712252.</p> <p>Teacher Resources:</p> <p>Kids Saving the Rainforest. 2008. http://www.kidssavingtherainforest.org/</p> <p>MillionTreesNYC. 2008. http://www.milliontreesnyc.org/html/home/home.shtml</p> <p>The Spirit of Gardening. 2007. www.gardendigest.com/</p> <p>ThinkExist.com Quotations. 2006. www.thinkexist.com/</p> <p>References:</p> <p>Kids Saving the Rainforest. 2008. http://www.kidssavingtherainforest.org/</p>	



Trees and Me

Making a difference

- 1. What were this hero's special talents?**
- 2. How did he/she use those talents to help the Earth?**
- 3. What might have been challenging about these particular actions?**
- 4. Who helped him/her?**



Trees and Me

You can make a difference

- 1. What are your special talents?**
- 2. How could you use these talents to help the Earth?**
- 3. Can you foresee any challenges with these particular actions?**
- 4. Who could help?**



WEEK **4** ACTIVITY **3_A**

Trees and Me

How can I help trees and New York City?

Location: Inside.

Materials:

Whiteboard, marker, two overheads (included) and overhead projector, paper, pencils.

Summary:

Students listen to a story about the work of a young environmental steward, think critically about the stewards' talents and actions, and consider ways that they could apply their own talents to help trees and New York City.

Objectives:

Describe one possible way to be a "hero" on a city level or for the Earth; think critically about stewardship behaviors.

Hook:

Start by doing something related to one of your talents, such as singing, dancing, dribbling a basketball, drawing a picture, juggling, etc. (Remember, the object is to get students' attention; your talent doesn't have to be "refined.") "We all have special talents. Today we are going to think about ways that we can use those talents to be heroes or stewards of trees and New York City." Give each student a piece of paper and a pencil and ask them to list three special talents that they have.

Read the story about Tara Church and the *Tree Musketeers* to the class. Then place the "Making a Difference" overhead (included) on the overhead projector; briefly discuss each question. Ask students to find a partner, and then ask if the story appealed to them in any way; if it inspired them. Place the "You Can Make a Difference" overhead (included) on the projector. Ask students to write down the answers to the questions on their paper, then "Think, Pair, Share" with their partner. Allow some time for students to share their ideas with the class.

Do a quick check for understanding: Did you think of some ways that you can help trees and New York City? Have a show of hands of students who are

interested in going forward with an idea. Thank students and give them a challenge: In addition to thinking of ways that you can use your unique talents, think about everyday actions that you can take; before school tomorrow, think of three specific ways that you can help trees and New York City.

Making a difference: Tara Church and the Tree Musketeers

Tara Church and a group of her friends had gotten into trouble—they had used disposable paper plates instead of reusable ones on a Brownie camping trip. As a penance, the eight-year-olds decided to plant a small tree near their home of El Segundo, California, in the "wasteland" between Los Angeles International Airport, an oil refinery, a sewage treatment plant, and a chemical plant. They named the tree "Marcie the Marvelous Tree."

This simple act was only the beginning. "We just wanted to plant a tree, that's all," says Tara. "It just sort of grew." The group, now the *Tree Musketeers*, has since planted thousands of trees, started a curbside recycling program, organized the first National Youth Environmental Summit, started the National Youth Speakers Bureau, operated an environmental hotline, and developed programs to train youth on civic leadership. They also have a website where kids can order leadership programs, find out about volunteer opportunities, download their newsletter, "TrunkLine," and of course, find information on planting or sponsoring a tree. The first of its kind, the *Tree Musketeers* is operated entirely "by and for kids" (with only a little help from adults).

And how is "Marcie the Marvelous Tree?" Marcie is now over 40-feet tall and grows in an "oasis of green." "Every single action of every single person is extremely valuable," Tara says. "We all have the capacity to change the world. And we have a duty to take care of everything we've been blessed with." >>>

WEEK
4

ACTIVITY
3_B

Trees and Me

How can I help trees and New York City? (continued)

Sources:

Bergman, B.J. and Baxter, Tracy. 11/12-97. "Class acts." *Sierra Magazine*.
<http://www.sierraclub.org/sierra/199711/classacts.asp>

Tree Musketeers. 2008.
<http://www.treemusketeers.org/tm06/index.asp>

Weillbacher, Mike. 12-94. "Eight for the Earth: E Magazine's kid heroes' hall of fame." Listed on HighBeam Encyclopedia. 2008. <http://www.encyclopedia.com/doc/1G1-16437592.html>

Department and maintain trails and build wildlife habitats (<http://nycgovparks.org/index.php>). Plant trees, restore green spaces, and get-growing with New York Restoration Project (www.nyrp.org/).

- **Superhero!** Imagine that you have been asked to create a New York City superhero that defends city trees, wildlife, and natural areas. Develop this new character. What are his/her/its special powers? Does he/she/it have an Achilles heel? How about a special motto, an alias, helpers or sidekicks, or arch-enemies? How is the new superhero like you?

Extensions:

- **You can make a difference!** Help students plan for environmental work to help trees and New York City. Have students choose ideas that make use of their own special talents and then help them write goals (e.g., "To sell artwork to buy an acre of tropical rainforest"). Next, turn the ideas and goals into proposals: Include lists of materials needed, approximate costs, and the time needed to plan and carry out the ideas; a timeline; lists of people and organizations that could help; and projects that could be used to jump start the ideas (e.g., writing letters to local businesses or posting notices at a community center). Decide to work together; turn individual ideas and goals into classroom efforts. Hold a competition and vote on the best proposals; involve school staff, other classrooms, parents, and community members.

- **The hero in me.** There are many ways to be heroes for trees and New York City, and there are many organizations that are ready to help. Contact MillionTreesNYC and create a "greener, greater New York:" Help plant and care for trees, reforest parkland, and learn more about urban forestry (<http://www.milliontreesnyc.org/html/home/home.shtml>). Join the Junior Park Ranger program through The NYC Parks and Recreation

Vocabulary:

None.

Suggested Reading List:

Giono, Jean. 2005. *The man who planted trees*. 20th anniversary edition. Chelsea Green Publishing Company. 1931498728.

Hoose, Phillip M. 2002. *It's our world, too*. Tandem Library. 0613573080.

Janeczko, Paul. 2000. *Stone bench in an empty park*. Scholastic. 0531302598.

Lewis, Barbara A. 1995. *The kid's guide to service projects: Over 500 service ideas for young people who want to make a difference*. Free Spirit Publishing. 0915793822.

Lewis, Barbara A., Espeland, Pamela, and Pernu, Caryn. 1998. *The kid's guide to social action: How to solve the social problems you choose and turn creative thinking into positive action*. Revised edition. Free Spirit Publishing. 1575420384.

Yolen, Jane (editor). 1996. *Sky scrape/city scape: Poems of city life*. 1st edition. Boyd's Mill Press. 1563971798.

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WEEK
4

ACTIVITY
3_C

Trees and Me

How can I help trees and New York City? (continued)

Teacher Resources:

MillionTreesNYC. 2008.

<http://www.milliontreesnyc.org/html/home/home.shtml>

New York Department of Parks and Recreation. 2008.

<http://nycgovparks.org/index.php>

New York Restoration Project. 2008. www.nyrp.org/

References:

Bergman, B.J. and Baxter, Tracy. 11/12-97. "Class acts." Sierra Magazine.

<http://www.sierraclub.org/sierra/199711/classacts.asp>

MillionTreesNYC. 2008.

<http://www.milliontreesnyc.org/html/home/home.shtml>

Tree Musketeers. 2008.

<http://www.treemusketeers.org/tm06/index.asp>

Weilbacher, Mike. 12-94. "Eight for the Earth: E Magazine's kid heroes' hall of fame." Listed on HighBeam Encyclopedia. 2008. <http://www.encyclopedia.com/doc/1G1-16437592.html>



Trees and Me

Making a difference

- 1. What were this hero's special talents?**
- 2. How did he/she use those talents to help his/her city?**
- 3. What might have been challenging about these particular actions?**
- 4. Who helped him/her?**



Trees and Me

You can make a difference

- 1. What are your special talents?**
- 2. How could you use these talents to help New York City?**
- 3. Can you foresee any challenges with these particular actions?**
- 4. Who could help?**



WEEK **4** ACTIVITY **4_A**

Trees and Me

How can I help trees and my NYC neighborhood?

Location: Inside.

Materials:

Whiteboard, marker, two overheads (included) and overhead projector, paper, pencils.

Summary:

Students listen to a story about the work of a youth-driven environmental organization, think critically about the talents and actions of the organization's members, and consider ways that they could apply their own talents to help trees and their neighborhood.

Objectives:

Describe one possible way to be a “hero” on a community level or for the Earth; think critically about stewardship behaviors.

Hook:

Start by doing something related to one of your talents, such as singing, dancing, dribbling a basketball, drawing a picture, juggling, etc. (Remember, the object is to get students’ attention; your talent doesn’t have to be “refined.”) “We all have special talents. Today we are going to think about ways that we can use those talents to be heroes or stewards of trees and our neighborhood.” Give each student a piece of paper and a pencil and ask them to list three special talents that they have.

Read the story about the *Natural Guard* to the class. Then place the “Making a Difference” overhead (included) on the overhead projector; briefly discuss each question. Ask students to find a partner, and then ask if the story appealed to them in any way; if it inspired them. Place the “You Can Make a Difference” overhead (included) on the projector. Ask students to write down the answers to the questions on their paper, then “Think, Pair, Share” with their partner. Allow some time for students to share their ideas with the class.

Do a quick check for understanding: Did you think of some ways that you can help trees and your neighborhood? Have a show of hands of students who are interested in going forward with an idea. Thank students and give them a challenge: In addition to thinking of ways that you can use your unique talents, think about everyday actions that you can take; before school tomorrow, think of three specific ways that you can help trees and your neighborhood.

Making a difference: Natural Guard

Tim Mack and Damian Anderson were just two kids in New Haven, Connecticut, who wanted to turn a vacant lot into a garden. They wrote to the mayor of their city to ask about the space, but time passed and they got no response. Instead of giving up, they joined other kids in the *Natural Guard*, an organization focused on community service-learning.

The *Natural Guard* was founded in 1990 by legendary singer and guitarist Richie Havens when he realized that most kids thought “environment” meant “rainforest,” but not their own towns. Havens decided to swing the focus back to the community and on empowering youth to affect positive change. Says Havens, “An eight-year-old kid might ask if we can grow a garden to feed the homeless. They actually did it. They grew three gardens and grew food in the middle of New Haven, Connecticut, which I never thought was possible. They supplied the soup kitchens that summer. They did that for six years.”

Because the *Guard* is “kid powered,” teaches real-life skills, and encourages mentoring, the youth find their potential and grow confident—they see the results of their own actions. The impacts are far reaching: “Out of 16 kids in the first group, 11 of them went to college. These are kids living with single parents in communities where kids shoot kids. One of them is in Harvard studying to become an environmental lawyer.”

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WEEK **4** ACTIVITY **4_B**

Trees and Me

How can I help trees and my NYC neighborhood? (continued)

Many of the *Guard's* projects focus on environmental justice issues. "These kids created such a furor of change that everybody had to sit up and take notice." In addition to growing organic vegetables for soup kitchens and shelters, the *Guard* organizes water quality monitoring, designed a coloring book and started a bilingual program to raise awareness of lead poisoning, and plants trees to beautify neighborhoods.

Natural Guard has chapters all over New Haven, and also in Brooklyn, Baltimore, and Cleveland. And unlike other youth outlets, it is especially attractive for young boys. "In my neighborhood," says Tim, "you can't even go outside at night without getting shot at... We're a lot of kids working together, not fighting and not arguing." Joseph Golden of the *Guard* adds, "It's all right to help. You don't have to be a punk just to plant a tree. You get a great joy to see something grow that you made."

Sources:

Idealist.org: Action without Borders. 2008. <http://www.idealists.org/en/org/16047-125>

Parker, T. Virgil. 03-08. "Richie Havens." College Crier Online. <http://www.collegecrier.com/interviews/int-0011.asp>

Stuart's Opera House. 03-08. "Richie Havens." <http://www.stuartsoperahouse.org/index.php?item=200>

Weilbacher, Mike. 12-94. "Eight for the Earth: E Magazine's kid heroes' hall of fame." Listed on HighBeam Encyclopedia. 2008. <http://www.encyclopedia.com/doc/1G1-16437592.html>

Wiser Earth. 2007. www.wiserearth.org/organization/view/5a294d368ae0c8e1e3fb9b7315d7d5f1

Extensions:

- **You can make a difference!** Help students plan for environmental work to help trees and the neighborhood. Have students choose ideas that make use of their own special talents and then help them write goals (e.g., "To sell artwork to buy an acre of tropical rainforest"). Next, turn the ideas and goals into proposals: Include lists of materials needed, approximate costs, and the time needed to plan and carry out the ideas; a timeline; lists of people and organizations that could help; and projects that could be used to jump-start the ideas (e.g., writing letters to local businesses or posting notices at a community center). Decide to work together; turn individual ideas and goals into classroom efforts. Hold a competition and vote on the best proposals; involve school staff, other classrooms, parents, and community members.
- **Responsibility.** Ask students to pick an area of their neighborhood that appeals to them aesthetically. Describe the area in detail. How did it get this way? Who is responsible? How does it affect the neighborhood? Then ask students to pick an area of their neighborhood that is unattractive. Describe the area in detail. How did it get this way? Who is responsible? How does it affect the neighborhood? Discuss: What neighborhood responsibilities do students have? As citizens, what are their duties?
- **Local connections.** Ask students to ponder these questions and then free write for five-10 minutes: What does the phrase "Think globally, act locally" mean to you? How does it apply to the environment and trees?

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WEEK
4

ACTIVITY
4c

Trees and Me

How can I help trees and my NYC neighborhood? (continued)

Vocabulary:

None.

Suggested Reading List:

Baker, Jeannie. 2004. *Home*. Green Willow Books. 0066239354.

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Lewis, Barbara A. 1995. *The kid's guide to service projects: Over 500 service ideas for young people who want to make a difference*. Free Spirit Publishing. 0915793822.

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References:

Idealist.org: Action without Borders. 2008. <http://www.idealists.org/en/org/16047-125>

Parker, T. Virgil. 03-08. "Richie Havens." College Crier Online. <http://www.collegecrier.com/interviews/int-0011.asp>

Stuart's Opera House. 03-08. "Richie Havens." <http://www.stuartsoperahouse.org/index.php?item=200>

Weilbacher, Mike. 12-94. "Eight for the Earth: E Magazine's kid heroes' hall of fame." Listed on HighBeam Encyclopedia. 2008. <http://www.encyclopedia.com/doc/1G1-16437592.html>

Wiser Earth. 2007. www.wiserearth.org/organization/view/5a294d368ae0c8e1e3fb9b7315d7d5f1



Trees and Me

Making a difference

- 1. What were this hero's special talents?**
- 2. How did he/she use those talents to help his/her neighborhood?**
- 3. What might have been challenging about these particular actions?**
- 4. Who helped him/her?**



Trees and Me

You can make a difference

- 1. What are your special talents?**
- 2. How could you use these talents to help your neighborhood?**
- 3. Can you foresee any challenges with these particular actions?**
- 4. Who could help?**



WEEK
4

ACTIVITY
5_A

Trees and Me

How can I reduce the impact of my day-to-day actions?

(Adapted from Rainforest Alliance, 2008)

Location: Inside or out.

Materials:
Whiteboard, marker, string or yarn.

Summary:

Students consider the impacts of everyday actions on the health of the Earth and think of ways to reduce those impacts by playing “Raising the Bar Limbo.”

Objectives:

List at least three actions taken on a daily basis and categorize those actions as being “helpful” or “harmful” to the Earth; state ways to reduce the impact of three harmful actions.

Hook:

Do some sort of action (in a showy way) where students can observe the impact of the action, such as making a loud noise or throwing a piece of paper in the trash. “Do all of our actions have some sort of impact?” Gauge student responses.

Tell students that they are going to play a game that will help them think about the impact of their day-to-day actions on the Earth. Ask students to form teams of four or five students each. As a class for 30 seconds, brainstorm actions that are taken every day, such as walking to school or taking a long shower; list these on the board. (As a teacher, join the brainstorming session and list particular actions that you have noticed your students taking, such as throwing trash on the floor or using too much water, etc.; include positive actions as well.) Make two columns next to the actions, and then quickly categorize each action as helpful or harmful to the Earth. Divide the harmful actions among the teams; give each team 30 seconds to think of ways to reduce the impacts of the actions to make them less harmful or even helpful.

Then play our game, “Raising the Bar Limbo.” Two students, the string holders, hold a long piece of string

and decide on the lowest height that would be difficult, but not impossible, to limbo under. The remaining students, the players, gather around the string holders. The teacher then calls out a harmful action from the board; the team that was “assigned” this particular action comes forward and must name a way to reduce the impact of the action. The remaining players then give advice to the string holders: Is the action less harmful or helpful? If the consensus is “yes,” the string holders raise the string up high so that the team can limbo underneath easily; if the consensus is “no,” then the string is lowered and the team must limbo under the low height. Play until time is called (approximately 10 minutes) or until each team has had a turn at the limbo string; make sure that the string holders limbo when their team gets in line.

Do a quick check for understanding: Did students enjoy the game? Was it easy or difficult to think of ways to reduce the impact of their actions? Thank students and give them a challenge: When you go home today, think of three more actions that you take and consider if the impact is helpful or harmful to the Earth. Can you think of ways to reduce the impact?

Variation:

Instead of forming teams, ask the whole class to think of ways to change the impact of the actions from harmful to helpful. Change the game to be similar in style to “The Wind is Blowing” (see Week 4, Activity 5, for grades K-3): Play the game by calling out an action that has a harmful impact; every student who takes this action then gets in line to limbo under the string. When each student gets to the string, he/she must name a way to reduce the impact of the action or must limbo under the low height. (Students can repeat a way formerly named.)

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WEEK **4** ACTIVITY **5_B**

Trees and Planet Earth

How can I reduce the impact of my day-to-day actions? (cont.)

Extensions:

- **Make the connections.** How can reducing the impact of day-to-day actions (like eating dinner or playing video games) help trees? Have students form teams of four or five each, and give each team a mini-whiteboard or a piece of chart paper and a marker. Then announce a day-to-day action to the class. Teams have one minute to draw out the connections between the action and trees. (If no team can draw the connections within the first minute, a new action is announced.)

When a team thinks that they have successfully drawn the connections, they shout “We did it!” and all drawing stops; that team must then present their drawing, describing each link. The remaining teams vote: Did they find the connections? If “yes,” the successful team gets two points and a new action is announced; if “no,” the drawing continues for up to 30 seconds, during which time any team (even the unsuccessful team) can make the connections and stop the play.

Variation: Bonus point. Tell students that, ultimately, everything we do to help trees also helps us. After a team has successfully made the connections from a day-to-day action to trees, ask if they can make the connections from trees back to themselves. If successful, that team gets an additional point. If not, any student from the remaining teams can try to make the connections. If successful, that student’s team gets one point. Each team is allowed one try to get the bonus point.

Vocabulary:

None.

Suggested Reading List:

Giono, Jean. 2005. *The man who planted trees*. 20th anniversary edition. Chelsea Green Publishing Company. 1931498728.

Jankeliowitch, Anne. 2008. *For Earth’s sake: 50 ideas to help save the planet*. Abrams Books for Young Readers. 0810972395.

Lewis, Barbara A. 1995. *The kid’s guide to service projects: Over 500 service ideas for young people who want to make a difference*. Free Spirit Publishing. 0915793822.

References:

Rainforest Alliance. 2008.
<http://www.rainforest-alliance.org/>