

Introduction

When Wangari Maathai was a child in Kenya, streams near her Kikuyu home were clean and food was plentiful. When she returned home from study abroad years later, streams were polluted, the soil was eroded and many people were hungry. She studied the problems, identified the root causes, and started the Greenbelt Movement. Thousands of Kenyan women joined the movement which focused on tree planting. Together the women grew million of trees. They restored the land and reduced hunger. As the Greenbelt Movement grew, the women addressed human rights abuses and helped bring democratic change to Kenya.

Sadly, Professor Wangari Maathai died September 25, 2011

Grade Level: 6 -7

Time Requirement: 2 days

Topic: Environmental Protection

Learning Objectives:

By the end of this unit, students will be able to:

1. Identify trees as natural resources that contribute to healthy ecosystems and food security.
2. Explain how an indigenous 'culture of conservation' in Kenya promoted healthy ecosystems and food security.
3. Explain how cash-cropping caused deforestation and food insecurity in Kenya.
4. Explain how Wangari Maathai and the Green Belt Movement empowered women, reversed deforestation, and increased food security.
5. Investigate environmental problems in their own communities.

Guiding Questions

1. What is the relationship between trees and food security?
2. How did the Green Belt Movement empower Kenyan women and improve food security?

3. How can individuals, communities, and countries reverse damaged ecosystems?

Maryland State Learning Standards and Goals

Social Studies Standard, Grade 7: Geography 3.0 B

- Identify and explain land use issues that illustrate the conflict between economic growth, deforestation, mining, and burning fossil fuels
- Explain how land use and environmental issues such as burning the rain forest and environmental preservation are addressed by government policy

Science Goal, Grade 6: Environmental Science, Goal 6

- The student will evaluate the interrelationship between humans and water quality and quantity.
- The student will evaluate the interrelationship between humans and land resources.

Materials Needed

Johnson, Jen Cullerton. *Seeds of Change, Planting a Path to Peace*. Illus. Sonia Lynn Sadler. New York: Lee & Low, 2010.

Merton, Lisa and Alan Dater. " [Taking Root: The Vision of Wangari Maathai \(Trailer\)](#)." *Taking Root Film Company*. Marlboro Productions , 2008. Web. 24 July 2011.

Student Handout 1: Tree of Interconnectedness

Student Handout 2: Group Questions

Teacher Handout: Group Questions & Answers

Suggested Materials

Napoli, Donna Jo. *Mama Miti: Wangari Maathai and the Trees of Kenya*. Illus. Kadir Nelson. New York: Paula Wiseman Simon & Schuster, 2010.

Nivola, Claire. *Planting the Trees of Kenya: The Story of Wangari Maathai*. New York: Farrar, 2008.

Winter, Jeanette. *Wangari's Trees of Peace: A True Story from Africa*. Orlando: Harcourt, 2008.

Merton, Lisa and Alan Dater. *Planting Hope: Wangari Maathai and the Green Belt Movement*. 2008. Marlboro Productions. DVD.

Taking Root: The Vision of Wangari Maathai. 2008. Marlboro Productions. DVD

"Activity 1: [From Roots to Branches: The Interconnectedness of Environment, Culture and Social Justice](#)." *Taking Root : The Vision of Wangari Maathai*. Community Classrooms, Independent Television Service , n.d. Web. 25 July 2011
(See also) <http://www.pbs.org/independentlens/takingroot/classroom.html>
http://www.pbs.org/independentlens/takingroot/resources/takingroot_handouts.pdf

Wardani, Jane. [Planting Ideas Action Guide](#). Katahdin Foundation, n.d.

[Wangari Maathai: The Environment \(Lesson\)](#). . *Speaking the Truth to Power*. NYSUT and the RFK Center for Justice and Human Rights, 2010.

["Diagram of a Tree."](#) *Woodcroft Wildspace*. 2007. Web. 26 August, 2011.

["Why We Need to Clean up the Chesapeake Bay."](#) *Chesapeake Bay Foundation*. 14 June 2011. Web. 25 July 2011.

["Water Quality Issues: Nitrogen and Phosphorus Pollution."](#) *Chesapeake Bay Foundation*. 2011. Web. 25 July 2011.

["Anacostia Watershed Restoration Partnership."](#) Metropolitan Washington Council of Government. 2011. Web. 25 July 2011.

Day 1:

Activator

Ask students: "What do trees provide?" Let the students write their ideas on paper, discuss them with other students and share their ideas with the class.

Procedure

- 1. Tell students that trees can also help you think and analyze problems. Project on the board Student Handout 1: The Tree of interconnectedness.'
- 2. Distribute copies of Student Handout 1: 'Tree of Interconnectedness.'
- 3. Divide the students into four groups. Group 1 should write the word **Mugumo** on the trunk of their tree. Group 2 should write '**Deforestation**' on their trunk. Group 3 should write **Education** . Group 4 should write '**Greenbelt Movement**'. You may keep the groups together or create mixed groups with each trunk topic represented in a group.
- 4. Introduce and read the picture book, ***Seeds of Change: Planting a Path to Peace***. Ask the students to share their thoughts about the book and how it relates to the words they wrote on the trunks of their tree.
- 5. Project or pass out questions from 'Student Handout 2: Group Questions'. Review the directions.

- 6. Read ***Seeds of Change*** again, giving students time to write the answers to their group's questions on the trunk, roots, branches and leaves of their 'Tree of Interconnectedness.'
- 7. Ask members of each group to share the information they wrote on their trees. You can ask additional questions to elicit information they may have overlooked (See Teacher's Handout).

Assessment: Use Student Handout 1: "Tree of Interconnected' to assess students' listening and thinking skills.

Day 2.

1. Show the Trailer from [Taking Roots: The Vision of Wangari Maathai](#)
2. Ask students to Think, Pare, Share to brainstorm answers to the questions: "Why did men join the Greenbelt Movement? What kind of political change did the Greenbelt movement help to bring about?"
3. Students should reflect, write, and share their answers with the class.

Assessment: Use students' reflections on the trailer to assess their understanding of the issues presented in the film.

Culminating Activity Suggestions

- Students create a play or PSA (Public Service Announcement) about Wangari Maathai and the Greenbelt Movement.
- Students write a poem or essay about how deforestation is connected to the hunger.
- Students create a mural about Wangari Maathai and the Greenbelt Movement. See as an example the [Art Miles Mural Project and the My Hero Project](#) / [See also Art Miles website](#)
- Students use a 'Tree of Interconnectedness' diagram to research a local environmental issue (e.g. the relationship between deforestation and the pollution of the Chesapeake Bay or Anacostia River).
- Students write a letter to a government official about deforestation issues and concerns.
- Students join a local tree planting project. See for example the [Billion Tree Campaign](#)

Lesson created by Brenda Randolph © 2011

Adapted from *From Roots to Branches: The Interconnectedness of Environment, Culture and Social Justice*.

. Visual by Mark C. Robinson. All Rights Reserved

Teacher Handout: Group Questions and Answers

Group 1: The Mugumo Tree

What and who were connected to/affected by the mugumo tree? (Write your answers on the **branches/leaves** of the tree.)

(Plants, birds, frogs, monkeys, elephants, geckos, humans, streams with tadpoles and fish, farm land with food crops including sweet potatoes, millet, and beans).

What resources did the mugumo tree need to survive? (Write the resources on the **roots of the tree**.)

(clean water, fertile soil, clean air, culture of conservation).

Group 2: Deforestation

What were the effects of deforestation? (Write your answers on the **branches or leaves** of the tree.)

(Cedar and acacia trees vanished. Birds had no place to nest. Monkeys lost their swings. Tired mothers walked miles for firewood. Soil streamed into rivers, Water turned to mud. No water to grow maize, bananas, sweet potatoes. Families went hungry.)

What were the root causes of deforestation? (Write your answers on the **roots** of the tree.)

(Government sold more and more land to big foreign companies. Companies cut down forest for timber. Companies cleared land for coffee plantations)

Group 3: Education

Who helped Wangari get an education? (Write your answers on the **branches or leaves** of the tree.)

(Her brother Nderity encouraged their parents to send her to school. Her parents paid for her school fees and supplies. Her mother encouraged her to continue her education in Nairobi.

What did Wangari do to become educated? (Write your answers on the **roots** of the tree.)

(She told her brother “I must go to school.” She told her parents, “I will make you proud.” She learned to read, do math and about animals. She was an excellent student and won a scholarship to study abroad.

Group 4: Greenbelt Movement

What were the benefits of the Greenbelt Movement? (Write your answers on the **branches or leaves** of the tree.)

(30 million trees planted in Kenya, clean rivers, homes in trees for animals, food for animals, land to grow food crops, increase in women’s rights, Greenbelt movement spreads around the world).

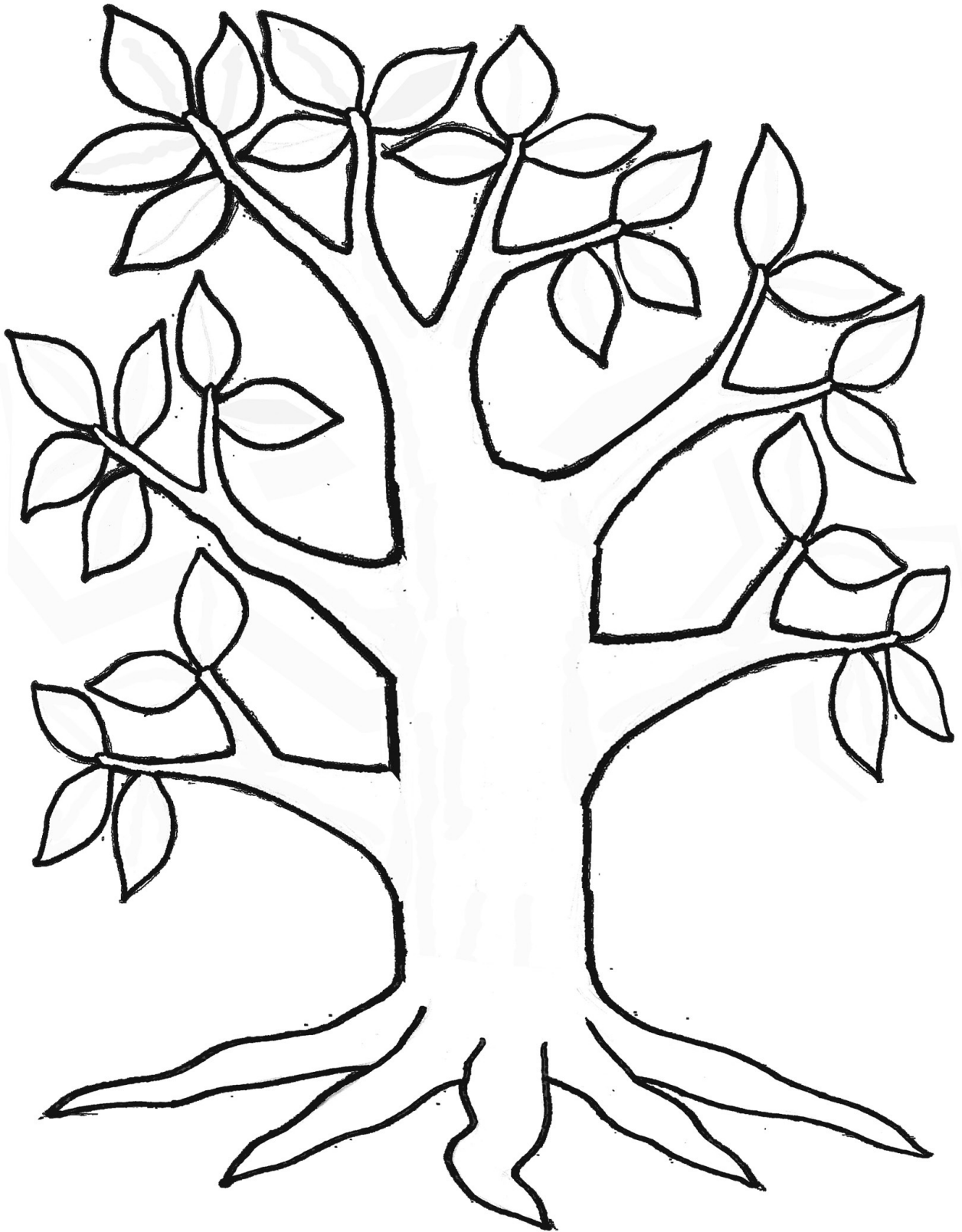
What made the Greenbelt movement strong? (Write your answers on the **roots** of the tree.)

(Wangari ‘s education as a scientist, women working together, Wangari elected to Kenyan parliament, international support including, the Nobel Peace Prize, awarded to Wangari, perseverance, courage.)

What did opponents of the Green Belt Movement say and do to stop Wangari and the members of the movement? (Write your answers on the **sides** of the tree.) *(Foreign businessmen did not want to give up land*

and profits for trees, some men said planting trees was women's work. Some said Wangari was too outspoken or that she had too many opinions, that she had too much education for a woman, the government was frightened of too many advances made by women. Wealthy businessmen paid corrupt police officers to arrest Wangari and put her in jail.

Student Handout: Tree of Interconnectedness



Student Handout 2: Group Questions

Group 1: The Mugumo Tree

What and who were connected to/affected by the mugumo tree? (Write your answers on the **branches/leaves** of the tree.)

What resources did the mugumo tree need to survive? (Write the resources on the roots of the tree.)

Group 2: Deforestation

What were the effects of deforestation? (Write your answers on the **branches or leaves** of the tree.)

What were the root causes of deforestation? (Write your answers on the **roots** of the tree.)

Group 3: Wangari Maathai, Scholar and Scientist

Who helped Wangari get an education? (Write your answers on the **branches or leaves** of the tree.)

What did Wangari do to become educated? (Write your answers on the **roots** of the tree.)

Group 4: Greenbelt Movement

What were the benefits of the Greenbelt Movement? (Write your answers on the **branches or leaves** of the tree.)

What made the Greenbelt movement strong? (Write your answers on the **roots** of the tree.)

What did opponents of the Green Belt Movement say and do to stop Wangari and the members of the movement? (Write your answers on the **sides** of the tree.)