Serengeti Day Primary School Curriculum

Overview: The Serengeti World Heritage Site, in northern Tanzania, East Africa is under immediate and direct threat from a proposed commercial highway, planned to be built in 2012. The Serengeti is the archetypal symbol of wild Africa for children around the world. From the Jane Goodall Institute’s Roots and Shoots Program to Animal Planet, and regular science studies for children around the world, the wild animals of Africa are not only a consistent draw for children’s attention during learning, they are also an excellent example teachers continuously use to educate students on biodiversity, ecosystems, flora/fauna relationships, and ecosystem geography.

Purpose: The purpose for providing this curriculum now is to encourage teachers to take 60-90 minutes per day, for five days to conduct a mini-unit on the Serengeti Ecosystem. We are encouraging teachers to implement this curriculum during the week of March 14-18, 2011, culminating with the First Annual Serengeti Day on Saturday March 19. By implementing this curriculum, teachers will not only provide high quality learning experiences for students, they will also raise awareness among children and families about the current plight and ongoing risk facing one of the last wild migration ecosystems on the planet.

Curriculum Standards: Students will

- Understand and be able to identify the geographical location of the Serengeti
- Draw on prior knowledge to make connections to new learning
- Be able to identify the major mammals who call the Serengeti home
- Understand and be able to discuss the inter-relationships between species in the Serengeti (predator/prey relationships)
- Understand and be able to discuss (in age-appropriate ways) the threats facing the Serengeti and the need to protect the ecosystem for future generations
- Culminate their learning in an arts- or literacy-based production (variety of forms) demonstrating what they have learned during the mini-unit

Scope: Five 60-90 minute lesson plans

Sequence:

Lesson #1: What and Where of Serengeti – Drawing on Prior Knowledge
Lesson #2: Animals of Serengeti – Relationships and Needs
Lesson #3: What’s Up in the Serengeti – Risks and Protection
Lessons #4 – 5: Speak Up for Serengeti – Culminating Project
Lesson #1: What and Where of Serengeti – Drawing on Prior Knowledge

Standards:
- Understand and be able to identify the geographical location of the Serengeti
- Draw on prior knowledge to make connections to new learning

Materials:
- Map of the World (link to free maps: http://geography.about.com/library/blank/blxindex.htm)
- Map of Africa
- Map of Tanzania (provided)
- KWL Chart
- Student Journal (optional)

Implementation Plan:

1. Using the map of the world, as students to share what they know about where the continent of Africa is located. Have students come to the map and identify their suggested locations. Spend time talking about the relative location of the continent, and point it out, if students are unable to locate it on the map.

2. Ask students what they think they know about Africa. Use a KWL chart to start tracking student ideas. Continue to revisit the KWL chart throughout the mini-unit as a tracking tool for new learning questions and eventual student learning. Note: older students may keep their own chart, while younger students should be assisted with making a class chart.

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<tr>
<th>What We Know</th>
<th>What We Want to Know</th>
<th>What We have Learned</th>
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3. Provide students with the map of Africa. Ask them to work in pairs to find the country of Tanzania. As they search, provide clues, using geographical terms – east, near Indian Ocean, near equator, etc. Ask pairs to respond when they think they have found it. Ask them how they know. Use a larger map of Africa to point out Tanzania to all students. Allow them to use color to shade in Tanzania on their Africa map.

4. Use the provided map of Tanzania, with national parks outlined and identified. At this point, engage in direct instruction, pointing out the Serengeti National Park. Explain to students that it is a World Heritage Site – a special place that is protected by the United Nations, so that it will always be there in its natural state – a place where many unusual animals - that are at risk of not surviving on the planet - can live out their lives as they are intended.

5. Closing: Ask students to begin thinking about and sharing their ideas about what kind of animals may live in the Serengeti. Option: have students keep a picture or text journal where they record their ideas and what they are learning.
Lesson #2: Animals of Serengeti – Relationships and Needs

Standards:
- Draw on prior knowledge to make connections to new learning
- Be able to identify the major mammals who call the Serengeti home
- Understand and be able to discuss the inter-relationships between species in the Serengeti (predator/prey relationships)

Materials:
- Map of Tanzania (provided)
- KWL chart
- Student Journals (optional)
- Map of Serengeti World Heritage Site (Provided – And this link is to a live interactive map, where migration routes are shown by month of the year – the best graphic representation of the migration possible http://www.eyesonafrica.net/migration.htm)
- Images of Serengeti mammals (provided)
- Wildebeest fact sheet (provided)

Implementation Plan:

1. Return to the KWL chart to review prior lesson. Ask students to state again what they have learned about the location of Africa and of Tanzania. Ask students to revisit their brainstorm about what animals they think might live there.

2. Vocabulary: mammals – work with students to clarify the characteristics of mammals

3. Begin new lesson content by showing images of easily identified Serengeti mammals – Elephants, lions, etc. Ask students what they know about these mammals. Make sure that students understand that these animals live in the Serengeti. Ask students to offer ideas about other animals that they think may live in Serengeti – with probing questions to pinpoint why they are making these suggestions. As students successfully identify animals that live in the Serengeti ecosystem, hold up the images of these animals.

4. If students do not identify the Wildebeest, introduce the image of the Wildebeest. Tell students this mammal lives in the Serengeti. Ask them what they think they know about the Wildebeest by looking at its picture. Provide a brief mini-lesson about the Wildebeest, using the Wildebeest fact sheet as a resource.

5. Show images of a lion and a Wildebeest. Vocabulary: predator and prey – work with students to clarify the concept of predator and prey, using the images to discuss the critical predator/prey relationship, and discuss other predators and prey in the Serengeti, and their relationships.

6. Provide small images of Serengeti mammals. Ask students to work in pairs to sort animal images into predator and prey categories. Students use art supplies to create their own visual t-chart of predators and prey that live in the Serengeti

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<tr>
<th>Serengeti Predators</th>
<th>Serengeti Prey</th>
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7. Closing: Ask students to reflect on what they think would happen if the prey animals no longer lived in the Serengeti – how would the predators survive? (Option for using student journal)
Lesson #3: What’s Up in the Serengeti – Risks and Protection

Standard:
- Understand and be able to discuss (in age-appropriate ways) the threats facing the Serengeti and the need to protect the ecosystem for future generations

Materials:
- KWL chart
- Map of Serengeti World Heritage Site (provided)
- Student Journals (option)
- Serengeti Threat fact sheet (provided in information packet)

Implementation Plan:

1. Revisit the KWL chart, reviewing and adding to what students have learned, and asking them to pose new questions for learning.

2. Vocabulary: migration – work with students to clarify the concept of animal migration. Ask them to offer ideas about why animals migrate, and provide clarifying instruction.

3. Use the map of Serengeti to point out the Wildebeest migration route. Discuss in detail what the migration is and why they migrate. Point out that when prey migrate, predators also migrate – and why.

4. Mini-lesson – Threats to the Serengeti. Use the Serengeti Threat fact sheet to provide age-appropriate instruction on the ongoing and current threats to the animals living in the Serengeti. Focus on the specific current threat of the commercial highway that crosses the path of the great migration. Ask students to discuss and share their ideas: What do you think will happen to the migration if a highway is built? Link discussions back to the need to migrate and the balanced relationship between predators and prey in the Serengeti.

5. Write and Share: Ask students (using age-appropriate methods) to write or talk about their thoughts and feelings on the possible outcome of a commercial highway across the Serengeti. Ask students to read and share in pairs, and then select some students to share with the whole group. Provide careful guidance during this discussion, as students may need clarification of their ideas, and may also become upset about what they are hearing and sharing. Provide an age-appropriate level of information.

6. Closing: Revisit the KWL chart one more time. Ask students to share and discuss what they have learned during the three days of lessons, adding new learning to the chart.
Lessons #4 – 5: Speak Up for Serengeti – Culminating Project

Standards:
- Culminate their learning in an arts- or literacy-based production (variety of forms) demonstrating what they have learned during the mini-unit

Materials:
- KWL chart
- Student Journals
- Maps
- T-charts
- Animal images (provided)
- Supplies determined by project approach

Instructional Plan: Teachers may choose from the list below or design their own culminating project plan. We recommend that teachers include visual arts or performance in the final project. Note: culminating projects should be selected for age-appropriate process and content.

Serengeti Mural, with slogan expressing student views on saving the Serengeti

Individual drawings or paintings for a student gallery of Serengeti images

Picture books (wordless or with words) telling the story of an animal in the Serengeti and what it does in daily life, or a fictional story of a Serengeti animal, how it learns about the highway, and what it does about it

A cause and effect story (informational or fiction) demonstrating student understanding about predator/prey relationships, or understanding about threats to the ecosystem

A short play that demonstrates what students have learned

Letter writing activity, writing to the Tanzanian government about student opinions and ideas (include drawings as well)

A class letter to US government representatives, asking them to learn more, sharing student opinions, and asking them to act on student opinions
Virtual Materials Set

- Lesson Plans
- Map of Tanzania
- Map of Serengeti
- Wildebeest Fact Sheet
- Serengeti Mammal Image Cards
- Serengeti Highway Information Kit (four articles for resource)
- Optional Reading Materials and Lesson Plans (see below)

Optional Reading Materials for Extended Study or Daily Read-Aloud

“Time For Kids” Serengeti Highway Articles – recently published in Time For Kids, articles on the highway threat to the Serengeti, written for the upper primary/elementary level

Placing the Trees of Kenya, by Clair Nivola - This picture book follows the real-life work of Wangari Maathai, a Kenyan woman who started a country-wide tree planting project. The story, while not about Serengeti, does make the connection between the actions of people and the resulting problems created for nature. It is a good opportunity to discuss cause and effect in an environmental context.

Bringing the Rain to Kapiti Plain, by Verna Aardema – This picture book follows the story of Kipat, a Maasai herder who makes the connections between rain and the animal and plant life on the African savanna. The story provides images that are very similar to the environment of the Serengeti, provides opportunity to discuss cause and effect in natural ecosystems, and can be used to spotlight the Maasai and their historical relationship with nature and the Serengeti in particular.

Please note that additional lesson plans for use of the two picture books are provided as an attachment to this curriculum.

Additional Physical Materials Recommended:

1. Old National Geographics or other nature magazines, on general topic, for clipping and construction projects
2. General writing materials
3. African music CDs
Bringing the Rain to Kapiti Plain

Additional Lesson Plan

Lesson Author: Monica L. Hanks
Grade Level: Early Elementary

Objectives:
- The children will be able to find Kenya, Africa on a world map.
- The children will draw a picture of the African plains and a herdsman.

Materials Needed:
- Bringing the Rain to Kapiti Plain by Verna Aardema: Dial Books for Young Readers, New York, 1981.
- A world map or globe.
- Write the words of the book on chart paper or an overhead transparency (extension activity).

Procedures:
- Ask the children if they think that people in other parts of the world act like, dress like, eat like, or talk like they do. When they say "No," ask the children if they know where Africa is. Have them point to a world map or globe and show you where Africa is. If they don't know where it is, show them, and tell them that they are going to learn about a man who lives in Kenya, Africa (point to Kenya on the map), and they're going to learn about the way he lives, and how it might be different or the same from the way they live.
- Read and discuss the book Bringing the Rain to Kapiti Plain. Discuss the book with the children, asking them questions about Kenya and the Nandi people so they'll have a better understanding of Ki-pat and his way of life.

Information and Suggested Questions

Cover:
- Why do you think the book is called Bringing the Rain to Kapiti Plain?
- What do you think the man is doing? Tending his animals.
- Do you think these animals (giraffes, antelope) are afraid of the man?
- What kind of place do you think they are in? Is it somewhere dry or somewhere with a lot of rain? Why do you think so? There could be different answers, but it is hot for part of the year and wet the other part.

Pages 1-2: Kenya is located on the East Coast of Africa and the equator runs through the middle of it. Kenya is considered a tropical area because it is hot and humid. There are sandy beaches, lagoons, rain forests, and swamps. The average temperature is 80 degrees all year long. Most (3/4) of Kenya consists of plains. It's very dry and the soil isn't very good for farming. The plains receive about ten to thirty inches of rainfall each year. There aren't any major cities here, but nomads roam the land tending their flocks. There is a highland area in the southwest that receives enough rainfall (forty to fifty inches a year) and has enough good soil to support farming. The majority of the people live here. There are forests and grasslands, and Nairobi, the capital city, is located in the highland area.

Pages 3-4: The wildlife in Kenya is diverse. There are elephants, giraffes, lions, rhinoceroses, zebras, antelope, buffalo, cheetahs, leopards, crocodiles, eagles, ostriches, storks, and more. What are these animals?

Pages 7-8: In this picture it is very dry, what is it called when an area doesn't have water and it is very dry? Drought.
Pages 9-10: Most of the people in Kenya live in rural areas, but many people go to the cities every year. The people in rural areas farm and raise livestock. Some people live as nomads and they travel the land with their herds to find food and water. The Nandi people are an example of a nomad group; they live in Western Kenya, in the plains, and they keep cattle, sheep, and goats as their way of life. Did you think that cows lived in Kenya?

Pages 11-12: Most of the men in Kenya wear cotton shirts and pants or shorts, but some wear business suits. Most females wear cotton dresses or skirts and blouses. Some people that live in rural areas wear a cloth that they wrap around their bodies. The nomads are especially known for this. This man dresses differently than we do, why do you think he wraps a piece of cloth around him? It's most likely cooler and less expensive than shirts and pants. Why do you think he stands on only one leg? There could be many answers to this question.

Pages 15-16: What do you think Ki-pat will do with the arrow he made? The children could give any answer, but he is going to shoot the cloud to make it rain.

Pages 17-18: Now he made a bow, let's predict what he is going to do with the bow and arrow.

Pages 19-20: Is it really possible to shoot an arrow at a cloud to make it rain? No. Is it okay to pretend in this story? Yes!

Pages 21-22: What is it called when it rains and rains and rains, in Africa? The monsoon season

Pages 23-24: Most rural people live in small houses made of mud or bundles of branches. The cities have modern houses of stone and cement. Look at the houses they live in and notice that they are different than ours. What do you think they're made of?

At the End: Do you think this is a real story, why or why not? No, because you can't shoot a cloud to make it rain. Why do people tell these stories, what is their purpose? To explain things that occur around them. Do we do this? Yes, we do sometimes. Even though Ki-pat lived far away from where we live now, and we are very different, we also have some things that are the same.

Have one or two children show where Kenya is on the map, and have the other children tell them if they are correct.

Tell the children that they have learned about the plains in Kenya and the people who raise animals, and now they are going to draw what they think the plains look like and what the people look like watching their animals. Have them draw these pictures.

Ask the children if they think it is important to learn about other people. Yes! so that we can know that we are very different but also have things in common.

Evaluation:
- Ask one or two children to point to the map and show where Kenya is. Have the other children correct or agree with the helpers.
- Assess the accuracy of the children's drawings.
### NCSS Notable Trade Book Lesson Plan

**Lesson Plan Author:** Carolyn O’Mahony – Oakland University  
**Downloaded from:** [https://childrensli-socialstudies.wikispaces.com/Planting+the+Trees+of+Kenya+Reinforcing+Activity](https://childrensli-socialstudies.wikispaces.com/Planting+the+Trees+of+Kenya+Reinforcing+Activity)  

#### Title of NCSS Notable Trade Book:


#### Book Summary:

This book tells the story of Wangari Maathai who left a verdant Kenya to attend college in the USA. Upon her return home she found the Kenyan landscape changed. Large scale tea plantations had replaced small subsistence farms. There had been rapid desertification. People were malnourished, underemployed and hungry. Initially Maathai taught village women how to plant and tend for seedlings, then she worked throughout the country “inspiring people to take charge of their environment, the system that governed them, their lives and their future” (author’s note). In 1977 she founded the Green Belt Movement in Kenya. She became a member of Parliament in 2002 and was awarded the Nobel Peace Prize for connecting the health of the environment to the health of her country’s people. She was teaching people to demand for policies that protect the environment because conflict happens when resources are few. “Environmental protection has become another pathway to peace” (Mjoes, 2004).

#### NCSS Standards:

| II. Time, Continuity & Change  
| a. demonstrate an understanding that different people may describe the same event or situation in diverse ways, citing reasons for the differences in views.  
| VI. Power; Authority and Governance  
| h. recognize and give examples of the tensions between the wants and needs of individuals and groups, and concepts such as fairness, equity, and justice. |

#### Materials:

- *Planting the Trees*  
- Tea leaves  
- World map  
- Poster paper and pens  
- Optional:  
  - Computer with internet access.  
  - Historical and current images of your local community.  
  - Address of your local government planning department

#### Objectives:

To build children’s awareness of choices people make about land-use and that: (1) those choices affect the quality of life for others; and (2) individuals, including children, can choose to act directly (plant trees etc and increase biodiversity) or indirectly (contact policy-makers) to change their environment.

#### Procedures:

**Exploration/Introduction:**

- Before teaching this lesson the teacher should watch the 2009 interview with Wangari Maathai ([www.nobelprize.org](http://www.nobelprize.org))  
- **Introduction:**  
  - Ask: *What do you like to do at the weekends?*  
  - Hopefully someone will talk about playing outside. Bring the conversation around to trees. Did they climb in them or not? Encourage them to think about how trees are a part of their lives.  
  - How exactly to introduce this lesson would depend upon the context for teaching. Some
children might not play outside. Others might spend their days out there. In which case you might want to ask how they came to school. What did they notice on their way there? Bring the conversation around to trees and how all people need plants, and not just for playing on.

Introduce *Planting the Trees* as a story about making life better for people in a place called Kenya, and, as inhabitants of the same planet, us. Locate Kenya on a map. Show how it lies on the equator. Talk about how climate at the equator tends to be wet and hot: ideal for growing plants yet how people’s choices can lead to desertification. Pass around the tea leaves for children to touch, smell. Explain how they are part of the story (large scale agriculture). Read the book with interactive questioning.

After reading the book together explain how Maathai used what she had learned in her studies to help others. Emphasize that it was not just what she knew but her commitment to helping people that made good things happen. She encouraged her people to plant native trees and plants that they knew would thrive, to bring back the diversity of plant-life into the area. She has sometimes been in trouble, not because she taught poor people to plant trees, because she tells them that they should expect their government to look after the environment. She is now a major figure in Kenyan political life.

**Development:**

As a class, create two three-part charts. The first chart documents how Maathai described her village’s environment: (1) when she was a child; (2) when she returned from the US; and (3) now. The second chart would review the villagers’ quality of life in the three time periods. Discuss what caused the changes over time. Based on the story, can we infer what different people (villagers, large plantation owners, government officials, Maathai) might have been thinking at each point in the story?

**Expansion:**

Have children write individual responses to the questions “What caused the changes to the environment in Kenya?” “What did Wangari Maathai do to help the environment?”

**Expansion:**

Talk about the difference between (1) taking action through influencing environmental policy and (2) taking direct action on the environment.

(1) Influencing Policies

Show land use maps and long-term land use plans. These are available from many local authorities but links to some are provided below in case they are not available easily in your municipality. Find out if your community has a green-belt policy or if the school (or school district) has a long-term plan for growth or a green-space policy.

Have the students identify what they like about their community then offer suggestions how their environment might be improved. Connect their brainstorming to local decision-makers’ policies.

**Assessment:**

Involvement in creating the charts as a large group.

Individual responses to the questions “What caused the changes to the environment in Kenya?” “What did Wangari Maathai do to help the environment?”

Individuals’ identification of characteristics of their own environment and suggestions for changes.
**Suggested Extension Activities:**

(1) Send students’ letters to their local officials. Invite a city planner or School Board member to come to your classroom to respond to the students’ questions and suggestions and to explain the processes for making policy changes. Create a flow chart together illustrating how decisions are made. Display it in the classroom, along with photocopies of the students’ letters and policy-makers’ responses.

If your school district does not have such a policy, have the students work together with knowledgeable adults from the community to write one.

(2) Discuss the idea of direct action in the environment, especially in terms of increasing plant diversity (and discouraging the planting of monocultures or invasive species). Study the feasibility of your class following up on one of your student’s suggestions such as creating a garden outside your classroom windows or in a nearby public space.

Study the origins of and activities on: Arbor Day (April 22), Make A Difference Day (October 24), Guerilla Gardening Day (May 1). Coordinate your efforts with local and national groups involved in these events such as 4H, your local council (Cooperative Tree Planting Program), Arbor Day Foundation, or your state’s native plant producers’ association. Enlist their help in obtaining appropriate plants to plant in your garden.

Raise funds by increasing the biodiversity in your area. Buy native plant seeds in bulk (e.g. one pound) then make your own student-designed seed packets. Place a teaspoon of seeds in each envelope then sell them. If the plants are native to the area, they are bound to sprout.

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**Additional References & Web Links**


Watch out!
Zebra cross the
road in Serengeti
National Park,
in Tanzania.

Scientists say a
highway through the
Serengeti, in Tanzania,
will put animals
at risk. Is it too late
to stop the road?
Road to Ruin?

The government of Tanzania plans to build a highway through Serengeti National Park. Scientists warn that it could destroy the annual migration of huge herds of wildebeests and zebras.

Imagine a sea of yellow grass. As far as you can see, the landscape is dotted with wildlife. The sound of thousands of animals fills your ears. “You can hear the rumble of animals’ hooves,” says David Blanton, cofounder of the group Serengeti Watch. “The wildebeests make this deep maw! maw! sound. At night, you hear lions roar and hyenas howl. It’s an awe-inspiring event.”

Blanton has witnessed the Great Migration, the movement of nearly 2 million wildebeests, zebras, gazelles and impalas across the African plains in search of fresh grass (see map). He and Serengeti Watch want to make sure this spectacle doesn’t disappear. They say that is what will happen if the Tanzanian government builds a highway through the animals’ migration route.

The Price of Progress

Tanzania’s President Jakaya Kikwete hopes the road will bring economic benefits to his country. Some Masai, herders who live near the proposed highway in northern Tanzania, say they need a good road so that they can transport their cattle to markets. They also want better access to hospitals.

Scientists, however, worry about the road’s impact on wildlife. They predict migrating animals will become roadkill and easy targets for poachers. The road would also hinder animals’ access to the Mara River, an important water source. A decline in animal migration could

Power Words

icon (eye-con) noun: a symbol
poacher noun: an illegal hunter
spectacle noun: a dramatic show

January 28, 2011
Each year, more than 100,000 visitors to Tanzania see the Great Migration.

Threaten Tanzania's billion-dollar tourism industry. The Serengeti is a United Nations World Heritage site. That status could be at risk.

Katherine Homewood studies the effects of the environment on communities. She argues that too little is known about the road to judge its impact. "The discussion has been dominated by concerns around wildlife," she told TFK. "It is time local people were allowed their own voice."

Andrew Dobson is a professor of ecology at Princeton University, in New Jersey. He wants more emphasis placed on the harmful effects the highway would have on the Serengeti. "A large number of Masai see the Serengeti as essential to the way they live," Dobson told TFK. "They want it to be preserved."

**Which Road to Take?**

Dobson and other scientists have proposed constructing a highway that runs south of the Serengeti. This route is 30 miles longer than the northern route, and would serve five times as many people.

The Tanzanian government says it is reviewing the environmental impact of the northern route. "I assure you I'm not going to allow something to be built that will ruin the ecosystem," says President Kikwete. His decision is expected in March.

"Tanzania has a great heritage of conservation," says Blanton of Serengeti Watch. "We have hope the government will choose the southern route and save this icon of nature." —By Brenda Iosevich

To learn more about Tanzania, go to timeforkids.com/tanzania.
THE GREAT WILDEBEEST MIGRATION

KENYA

OCTOBER / NOVEMBER
Northern Mara
Bushed Grasslands

AUGUST / SEPTEMBER
Masai Mara
National Reserve

AUGUST / SEPTEMBER

KENYA

DECEMBER / LATE MAY

Serengeti National Park

Serengeti National Park

Southern Serengeti
Shortgrass Plains

Western Wooded Grasslands

JULY / AUGUST

Eastern Woodlands

TANZANIA

www.savetheserengeti.org