

Appendices to Original Paper

Teacher Resources

- Lesson planning template
- Key Components of the 5Es Model
- Photo cards and script for The Great Kapok Tree
- Rainforest Discussion Questions
- Rainforest student worksheets
- Temperate vs Tropical Sorting Activity Cards

- **Appendix A:**

This framework is typically used as a means to evaluate teacher practice in teaching English in a content area classroom. It also provides a useful format for creating a lesson plan for Ells and was used in conjunction with a standard lesson plan.

Topic:		Class:	Date:
Content Objectives:		Language Objectives:	
Key Vocabulary:	Materials (including supplementary and adapted):		
Higher Order Questions:			
Time:	Activities Building Background <i>Links to Experience:</i> <i>Links to Learning:</i> <i>Key Vocabulary:</i>		

Appendix B**Key Components of the 5 E Model***

Stage of the Instructional Model	What the Teacher does that is:	
	Consistent with the Model	Inconsistent with the Model
Engage	<ul style="list-style-type: none"> • Creates interest • Generates curiosity • Raises questions • Elicits responses that uncover what students know or think about the concept/subject 	<ul style="list-style-type: none"> • Explains concepts • Provides definitions and answers • States conclusions • Provides premature answers to students' questions • Provides closure • Lectures
Explore	<ul style="list-style-type: none"> • Encourages students to work together without direct instruction from the teacher • Observes and listens to students as they interact • Asks probing questions to redirect students' investigations when necessary • Provides time for students to puzzle through problems • Acts as a consultant for students • Creates a “need to know” setting 	<ul style="list-style-type: none"> • Provides answers • Tells or explains how to work through the problem • Tells students they are wrong • Gives information or facts that solve the problem • Leads students step-by-step to a solution
Explain	<ul style="list-style-type: none"> • Encourages students to explain concepts and definitions in their own words • Asks for justification (evidence) and clarification from students • Formally provides definitions, explanations, and new labels • Uses students' previous experiences as the basis for explaining concepts • Assesses students' growing understanding 	<ul style="list-style-type: none"> • Accepts explanations that have no justification • Neglects to solicit students' explanations • Introduces unrelated concepts or skills
Elaborate	<ul style="list-style-type: none"> • Expects students to use formal labels, definitions and explanations provided previously • Encourages students to apply or extend concepts and skills in new situations • Reminds students of alternate explanations 	<ul style="list-style-type: none"> • Provides definitive answers • Tells students they are wrong • Lectures • Leads students step-by-step to a solution • Explains how to work through the problem

	<ul style="list-style-type: none"> • Refers students to existing data and evidence and asks "What do you already know?" "Why do you think.....?" • (Strategies from Explore also apply here.) 	
Evaluate	<ul style="list-style-type: none"> • Observes students as they apply new concepts and skills • Assesses students' knowledge and/or skills • Looks for evidence that students have challenged their thinking or behaviors • Allows students to assess their own learning and group process skills • Asks open-ended questions, such as "Why do you think...?" "What evidence do you have?" "What do you know about x?" "How would you explain x?" 	<ul style="list-style-type: none"> • Tests vocabulary words, terms and isolated facts • Introduces new ideas or concepts • Creates ambiguity • Promotes open-ended discussion unrelated to concept or skill

*Adapted from: The BSCS 5E Instructional Model: Origins, Effectiveness, and Applications, July 2006, Bybee, et.al, pp. 33-34, and <http://www.unc.edu/destiny/5Es.htm>

Appendix C: Teacher Resources

Photo Cards for The Great Kapok Tree and Rainforest Connections. Photo credits:
<http://www.rainforest-alliance.org/kids/species-profiles>

- Kapok tree
- Tree Frogs
- Boa Constrictor (Green Anaconda)
- Bee (Drawing)
- Cock of the Rock
- Monkeys
- Toucan, Macaw
- Tree Porcupines (drawing)
- Jaguar
- Anteaters
- Sloths

Extra cards (for future discussion): leaf cutter ants, cacao, coffee, bromeliad, capuchin monkey

Cock of the Rock



Photo Cards for The Great Kapok Tree and Rainforest Connections

Scarlet Macaw



Leaf Cutter Ant



Photo Cards for The Great Kapok Tree and Rainforest Connections

Kapok Tree (Ceiba)



Keel billed Toucan



Photo Cards for The Great Kapok Tree and Rainforest Connections

Black Howler Monkeys



Three Toed Sloth



Photo Cards for The Great Kapok Tree and Rainforest Connections

Blue Morpho Butterfly



Cacao



Photo Cards for The Great Kapok Tree and Rainforest Connections

Coffee



Green Anaconda

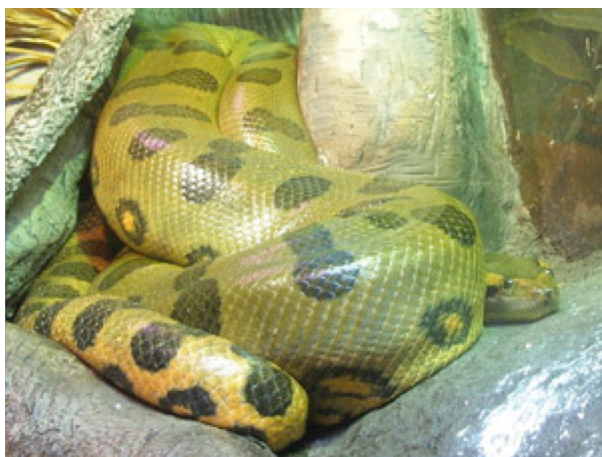


Photo Cards for The Great Kapok Tree and Rainforest Connections

Anteater

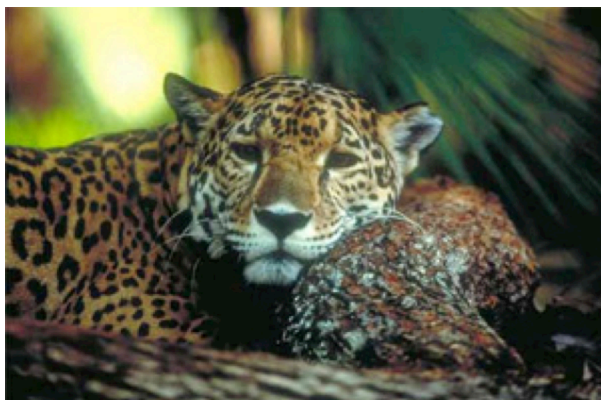


Bee



Photo Cards for The Great Kapok Tree and Rainforest Connections

Jaguar



Capuchin Monkey



Tree Porcupine



Photo Cards for The Great Kapok Tree and Rainforest Connections

Bromeliad



Red Eyed Tree Frog



The Great Kapok Tree

By Lynne Cherry

Narrator 1: One man was walking into the rain forest. Moments before, the forest had been alive with the sounds of squawking birds and howling monkeys. Now, all was quiet as the creatures watched the man and wondered why he had come. The man stopped and pointed to a Great Kapok Tree. Then he took the ax he carried and struck the trunk of the tree.

The Man: Whack! Whack! Whack!

Narrator 2: The sounds of the blows rang through the forest. The wood of the tree was very hard.

The Man: Chop! Chop! Chop!

Narrator 3: The man wiped off the sweat that ran down his face and neck.

The Man: Whack! Chop! Whack! Chop!

Narrator 5: Soon the man grew tired. He sat down to rest at the foot of the Great Kapok Tree. Before he knew it, the heat and hum of the forest had lulled him to sleep. A boa constrictor lived in the Kapok tree. He slithered down its trunk to where the man was sleeping. He looked at the gash the ax had made in the tree. Then the huge snake slid very close to the man and hissed in his ear.

Boa: Senhor, this tree is a tree of miracles. It is my home, where generations of my ancestors have lived. Do not chop it down.

Narrator 6: A butterfly flew near the sleeping man's ear

Butterflies: Senhor, our home is in this Kapok tree, and we fly from tree to tree and flower to flower collecting pollen. In this way we pollinate the trees and flowers throughout the rain forest. You see, all living things depend on one another.

Narrator 7: A troupe of monkeys scampered down from the canopy of the Kapok tree. They chattered to the sleeping man.

Monkey: Senhor, we have seen the ways of man. You chop down one tree, then come back for another and another. The roots of these great trees will wither and die, and there will be nothing left to hold the earth in place. When the heavy rains come, the soil will be washed away and the forest will become a desert.

Narrator 8: A toucan flew down from the canopy.

Toucan: Senhor! You must not cut down this tree. We have flown over the rain forest and seen what happens once you begin to chop down the trees. Many people settle on the land. They set fire to clear the underbrush, and soon the forest disappears. Where once there was life and beauty, only black and smoldering ruins remain.

Narrator 9: Some bright and small tree frogs crawled along the edge of a leaf. In squeaky voices they piped in the man's ear.

Frog: Senhor, a ruined rain forest means ruined lives...many ruined lives. You will leave many of us homeless if you chop down this great Kapok tree.

Narrator 10: A jaguar had been sleeping along a branch in the middle of the tree. Because his spotted coat blended into the dappled light and shadows of the understory, no one had noticed him. Now he leapt

down and padded silently over to the sleeping man. He growled in his ear.

Jaguar: Senhor, the Kapok tree is home to many birds and animals. If you cut it down, where will I find my dinner?

Narrator 11: Two tree porcupines swung down from branch to branch and whispered to the man.

Porcupines: Senhor, do you know what we animals and humans need in order to live? Oxygen. And, Senhor, do you know what trees produce? Oxygen! If you cut down the forests you will destroy that which gives us all life.

Narrator 12: An anteater climbed down the Kapok tree with her baby clinging to her back. The unstriped anteater said to the sleeping man.

Anteater: Senhor, you are chopping down this tree with no thought for the future. And surely you know that what happens tomorrow depends upon what you do today. The big man tells you to chop down a beautiful tree. He does not think of his own children, who tomorrow must live in a world without trees.

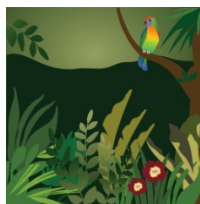
Narrator 13: A three-toed sloth had begun climbing down from the canopy when the men first appeared. Only now did she reach the ground. Plodding ever so slowly over to the sleeping man, she spoke in her deep and lazy voice.

Sloth: Senhor, how much is beauty worth? Can you live without it? If you destroy the beauty of the rain forest, on what would you feast your eyes?

Narrator 14: A child from the Yanomamo tribe who lived in the rain forest knelt over the sleeping man. He murmured in his ear.

Boy: Senhor, when you awake, please look upon us all with new eyes.

Narrator 1: The man awoke with a start. Before him stood the rain forest child, and all around him, staring, were the creatures who depended upon the great Kapok tree. What wondrous and rare animals they were! The man looked about and saw the sun streaming through the canopy. Spots of bright light glowed like jewels amidst the dark green forest. Strange and beautiful plants seemed to dangle in the air, suspended from the Great Kapok Tree. The man smelled the fragrant perfume of their flowers. He felt the steamy mist rising from the forest floor. But he heard no sound, for the creatures were strangely silent. The man stood and picked up his ax. He swung back his arm as though to strike the tree. Suddenly he stopped. He turned and looked at the animals and the child. He hesitated. Then he dropped the ax and walked out of the Rain Forest

Tropical Rain Forests:**Word Bank:**

canopy	ecosystem	emergent	equator
layers	ground	rainfall	rainy
tropical		understory	vine

What are they?

Where are they?

Rain forest layers: What are the 4 layers of the tropical rain forest?

What animals live in the tropical rain forest?

What plants live in the tropical rain forest?

What is the climate like in the tropical rain forest?

Temperate Rain Forests:**Word Bank:**

bushes canopy climate ecosystem forest floor
herb
layers lichen ground moss rainfall
rainy seasons shade summers temperate
understory

What are they?

Where are they?

Temperate rain forest layers: What are the 5 layers of the rain forest?

What animals live in the temperate rain forest?

What plants live in the temperate rain forest?

What is the climate like in the temperate rain forest?

Comparing Tropical and Temperate Rainforest

Discussion Questions to Activate Prior Knowledge

Discuss: Do you live in a tropical area?

Discuss: Do people live in the Amazon?

Discuss: Are there seasons where you live?

Discuss: What kind of precipitation (rain, snow, etc.) falls where you live?

Discuss: What animals hibernate?

Discuss: What is the rainforest canopy like? Which animals live there?

Discuss: Which layer of the rainforest has the most flowers and fruit?

Discuss: Which plants live in tropical rainforests?

Discuss: what do you call trees that lose their leaves?

Discuss: What kinds of trees grow in temperate forests?

Discuss: Which area gets more rain, the tropical rainforest or the temperate forest?

Discuss: Where could you find snow in the winter?

Discuss: What animals live in the temperate forest?

Temperate Forest vs. Tropical Rain Forest Sorting Activity

Rain Forest and Temperate Forest Fact Cards: adapted from
What about rainforests?

Tropics**Equator**

These forests are found in wet parts of the world called the tropics. The tropics are near the equator, which is an imaginary line around the middle of the Earth, where the climate is warm.

Climate**Plants**

In this type of forest it is always hot and damp. Tall trees and many other plants grow close together here. Plants grow all year long because there is always plenty of rain. These forests are home to the greatest variety of plants and animals in the world.

Temperate Forest vs. Tropical Rain Forest Sorting Activity

Location

This type of forest is found in areas far from the equator. There are four seasons in this forest: winter, spring, summer and fall.

Hibernation

Some animals that live in this forest will hibernate through the long, cold, winter.

Hibernation is like falling asleep for a long time. The animal's body processes slow way down and it does not eat.

Temperate Forest vs. Tropical Rain Forest Sorting Activity

Precipitation

In this forest precipitation can fall at any time during the year. Sometimes it is rain, and sometimes it is snow.

Types of plants

Plants in these forests have large leaves and keep their leaves all year long.

Many of the trees in this forest have giant roots above the ground. These roots are called buttress roots; they are needed to support these really tall trees.

Appendix E: Elements of a Science and English Language Learner Classroom

Forest Layers

This type of forest has 4 layers: emergent, canopy, understory, and the forest floor. The kapok tree is in the emergent layer that rises high above the canopy.

Trees

Most of the trees in this forest lose their leaves in the fall and grow new leaves in the spring. The weather changes from cold to warm to hot.