



**Fourth Grade  
Ecuadorian Rainforest**

**National Standards for Grade Four Lessons**

**Language Arts Writing**

Standard 4 Level 2 Grade 3-5

2. 3. 4. Gathers and uses information for research purposes (encyclopedias, dictionaries, electronic media).  
Uses multiple representations of information (maps, charts, diagrams, tables) to find information for research topics.  
7. Uses strategies to compile information into written reports or summaries.

**Reading**

Standard 7 Level 2 Grade 3-5

- Uses reading skills and strategies to understand a variety of informational texts.  
5. Summarizes and paraphrases information in texts.  
6. Uses prior knowledge and experience to understand and respond to new information.

**Listening and Speaking**

Standard 8 Level 2 Grade 3-5

- Contributes to group discussions.  
Asks questions in class  
Responds to questions and comments.  
Listens to classmates and adults.  
7. Makes basic oral presentations to class.  
10. Organizes ideas for oral presentations.

**Reading**

Standard 6 Level 2 Grade 3-5

- Uses reading skills and strategies to understand and interpret a variety of literacy texts.  
9. Makes connections between characters or simple events in a literary work and people or events in his or her own life.

**Thinking and Reasoning**

Standard 3 Level 2 Grade 3-5

4. Makes comparisons between countries in terms of relatively concrete characteristics (size, population, products).

Standard 1 Level 2 Grade 3-5

- Uses facts from books, articles and databases to support an argument.

7. Recognizes when a comparison is not fair because important characteristics are not the same.

Standard 5 Level 2 Grade 3-5

Identifies issues and problems in the school or community that one might help solve.

**Mathematics**

Standard 1 Level 2 Grade 3-5

Uses a variety of strategies to understand problem situations.  
Represents problems situations in a variety of forms.

Standard 3 Level 2 Grade 3-5

7. Solves real world problems involving number operations.

Standard 4 Level 2 Grade 3-5

Understands the basic measures perimeter, area, volume circumference.  
Selects and uses appropriate tools for given measurement situations.  
4. Understands relationships between measures.  
Uses specific strategies to estimate quantities and measurements.

Standard 9 Level 2 Grade 3-5

2. Understands that mathematical ideas and concepts can be represented concretely, graphically, and symbolically.

**Life Science**

Standard 6 Level 2 Grade 3-5

Knows the organization of simple food chains and food webs.  
Knows the transfer of energy.  
Knows that changes in the environment can have different effects on different organisms.  
Knows that all organisms (including humans) cause changes in their environments and these changes can be beneficial or detrimental.

Standard 1 Level 2 Grade 3-5

Understands atmospheric processes and the water cycle.

Standard 4 Level 2 Grade 3-5

5. Knows that the characteristics of an organism can be described in terms of a combination of traits; some traits are inherited and others result from interactions with the environment.

Standard 5 Level 2 Grade 3-5

Knows that living organisms have distinct structures and body systems that serve specific functions in growth, survival, and reproduction. (Body structures for walking, flying, or swimming).

Standard 7 Level 2 Grade 3-5

3. Understand the concept of extinction and its importance in biological evolution.  
Knows ways in which living things can be classified.

Standard 9 Level 2 Grade 3-5

Understands the sources and properties of energy.

Standard 11 Level 2 Grade 3-5

Knows that good scientific explanations are based on evidence (observations) and scientific knowledge.

Knows that scientists make the results of their investigations public.

Standard 13 Level 2 Grade 3-5

Knows that people of all ages, backgrounds, and groups have made contributions to science and technology throughout history.

Standard 12 Level 2 Grade 3-5

Plans and conducts simple investigations.

4. Uses appropriate tools and simple equipment.



## Fourth Grade Ecuadorian Rainforest

### Lesson 1: What would Halloween be like without the Ecuadorian rainforest?

#### Concept

Rainforests are home to an extraordinary number of plant types, including some of our favorite foods. Students will understand that food comes from far away places and, as a result, has hidden costs associated with its production. Students will understand the relationship between farming practices and the environment that surrounds farms. Students will research sustainable practices of cocoa farming that help protect the quality of environments while producing essential ingredients for food products. Students will understand the work of conservation research teams who work to assure quality of life for humans and other species.

#### Essential Question:

What would Halloween be like without the Ecuadorian rainforest?

#### Additional Resources

- **Resource Index** - Check out this page at <http://www.rainforest-alliance.org/programs/education/teachers/curriculum/resources/index.html> for additional supplemental materials that complement these dynamic units and to access many of the resources listed below.
- **Slideshow** – The Learning Site provides a slideshow and script about Ecuador that includes background information about the animals, people and landscape of this region. The slideshow can be downloaded for viewing in the classroom, printed out and read as a story, or viewed online with the students.
- **Unit-Specific Story:** The Rainforest Alliance has developed an original story for use with these units, available in English, Spanish and Portuguese. The story is available to download and print or can be viewed onscreen.

#### Romel's Rainforest Home

- **From the Bean to the Bar: Chocolate Slideshow** - Where does chocolate come from? Take a journey that follows the production of a chocolate bar from the bean to your supermarket. The slideshow can be downloaded for viewing in the classroom, printed out and read as a story, or viewed online with the students.

- **Species Profiles** – The species profiles, available to view on screen or download from the beginning of the unit or the Resource Index, include photos, habitat, foraging behavior, group relationships, threats and many more facts.

- Bromeliad
- Ocelot
- Great Curassow
- Capuchin Monkey
- Three-Toed Sloth

- **Rainforest Poster:** Download and print out this colorful two-page poster, which is available for you to use in explaining the layers of the rainforest, its products and the environmental threats facing many rainforests around the world.

**Inside the Canopy** – Structure and species of the rainforest

**Status Report** – What is happening to the rainforest

- **Terrarium Instructions** – Download directions for making a terrarium in your classroom.
- **Rainforest Products** – Visit <http://www.rainforest-alliance.org/resources/forest-facts/lives.html> for a summary of products found in our homes and supermarkets that either originated in tropical forests or are currently produced there.
- **Teacher summary/Chachi Community Profile** – The Rainforest Alliance Learning Site provides a downloadable overview of Chachi cocoa farmers in Ecuador with useful information to introduce you to the lesson topic.
- **Conservación y Desarrollo (Conservation and Development)** – Check out this online resource for more information about how the Rainforest Alliance’s partner group in Ecuador, *Conservación y Desarrollo*, is helping the Chachi protect their precious ecosystems:  
<http://www.rainforestalliance.org/programs/aar/ecuador.html>
- **Profiles in Sustainability** – Visit <http://www.rainforestalliance.org/programs/profiles/index.html> for case studies on companies who work closely with the Rainforest Alliance to ensure that their practices protect wildlife, workers and communities.
- **Certificate of Accomplishment** – Print out colorful rainforest certificates for your students to commemorate their completion of these units.

## **Informational Introduction for the Teacher**

This lesson guides students in an exploration of sustainable agricultural practices directly related to the lives of people living in the rainforest. The connection is made through chocolate and cocoa farming. By engaging students in a study of the origins of chocolate, we will introduce the impact of increased need/want for chocolate on the environment where it is grown and species that surround those farms. The unit focuses specifically on the Chachi people, who protect their forest from destruction by sustainably harvesting cocoa. The Chachi participate with the Rainforest Alliance in developing sustainable farming techniques that conserve the rainforest while providing the local people with a means for earning an income.

## **Informational Introduction for the Students**

Go into almost any backpack in your school and you will find empty chocolate wrappers or chocolate treats waiting to be eaten. Chocolate is a favorite candy of American children and children all over the world. Halloween is a holiday that increases the sale of chocolate. Where does all this chocolate come from? Who produces the ingredients for this treat? As the desire for more chocolate increases, farming of chocolate increases. What effect does chocolate farming have on the landscape, the people and the different animals that live around those farms? What happens when trees are cut down in an area that is rich in biodiversity and replaced with farms that grow only cacao plants? How might these changes affect our lives so far away?

## **Step 1 - CONNECT (The Concept to Prior Knowledge)**

### **Challenge**

Students are given a number of typical Halloween treats and work in groups to determine which foods came from the rainforest (chocolate) and which foods came from temperate regions (apples, popcorn). Students examine ingredient lists on candy wrappers and brainstorm the origin of these food items. After creating two groups, students imagine what Halloween would be like without chocolate.

### **Materials**

- Chocolate candies
- Temperate regional sweets (honey, popcorn, fruit)
- Paper, pencils

### **Procedure**

1. Teachers will need to gather enough chocolate candies and temperate regional sweet food (honey, popcorn, fruit) to divide among students.
2. Divide the class into small groups (3 – 4) and have them make columns on large sheets of paper headed by each candy item.
3. Reading the ingredients, have students list the ingredients under each candy type.
4. Have students make guesses about where these items originate.

## **Step 2 – LITERATURE/DISCUSS (Give Expert Information Book; Ask Questions)**

### **Challenge**

Students will discover the wide range of places that supply ingredients for simple candies.

### **Materials**

- Internet access
- Charts from Step 1
- Ecuador slideshow (<http://www.rainforest-alliance.org/programs/education/teachers/curriculum/ecuador/slideshow/ecuador-slideshow.pdf>)
- From the Bean to the Bar: Chocolate Slideshow ([http://www.rainforest-alliance.org/programs/education/teachers/curriculum/ecuador/slideshow/cocoa\\_slide\\_show.pdf](http://www.rainforest-alliance.org/programs/education/teachers/curriculum/ecuador/slideshow/cocoa_slide_show.pdf)), to take a delicious journey that follows the production of a chocolate bar from the rainforest to your supermarket.
- Sweets from Step 1

### **Procedure**

1. To learn more about food origins, have students do an Internet search on the ingredients of one chocolate and one non-chocolate candy.
2. Using the large charts with their 'guesses', students list the origin of the food ingredients next to the guesses made on their charts.
3. To learn more about chocolate food origins, students view a slideshow about Ecuador and how chocolate is grown and follow the production line from the bean to the chocolate bar.
4. Students note which foods come from tropical rainforest areas and revisit their original treats, reconsider their group choices, and identify which ones would not exist if rainforests disappeared.

## **Step 3A - PRACTICE (Math and Learning Centers)**

### **Challenge**

Students will compare and contrast the origins of the ingredients in their candy choices and calculate the expense of its travel to their desks. They will choose a candy that traveled the least number of miles and one that traveled the most number of miles.

### **Materials**

- Paper, pencils
- Art supplies

### **Procedure**

1. Students create maps on large sheets of paper illustrating the origins of their treats marking whether they are local or exotic in origin and highlighting the distance between their home and the farms.

2. Students calculate the total miles it took for their Halloween treats to get from the farms where they were grown to their bags.
3. Students multiply the number of miles by .38 to calculate a rough cost for this travel in dollars. Mark this expense on the maps.
4. Students compare and contrast the miles and the expense of each item.

### **Step 3B - CREATE (Performance Tasks Related to Standard Indicators)**

#### **Challenge**

Students create a bag of treats from local areas and compare it to the typical Halloween treats they receive.

#### **Materials**

- Paper, pencils
- Treats from local and tropical areas

#### **Procedure**

1. Students create a bag of treats that are designated as 'local' in origin.
2. Students write a paragraph that describes the impact of the different treats on the environment. Students should refer to the distance and resulting expense to transport local treats and compare these distance/cost amounts to the chocolate candies.
3. Students write a short story that relates the "life" of a chocolate candy tracing its origins and production. Because chocolate usually doesn't grow in temperate zones, ask the children to comment on chocolate that is grown sustainably and chocolate that may damage the long-term health of a tropical place of origin.
4. Students create a new "origins" label for candy that states/relates the real cost of a candy that comes from a tropical location. Reference to sustainable production versus non-sustainable production should appear on the labels.

### **Step 4 - PRESENT (Edit Work/Students Orally Present Projects)**

#### **Challenge**

Students invite other students and teachers to "trick or treat" in their classroom. Students explain the difference between the treats highlighting the different plants growing in tropical rainforests and temperate areas.

#### **Materials**

- Labels from Step 3B

#### **Procedure**

1. Students attach new labels to candy that comes from distant places so that visiting students can read the story of its production.

**LESSON 1 ASSESSMENT RESULTS:**

Teacher observations of tasks with rubrics as listed below, as well as collected work samples.

<b>Assessment Guidelines</b>	<b>3 = P (Proficient)</b>	<b>2 = S (Satisfactory)</b>	<b>1 = NW (Needs Work)</b>
1. Student shows understanding of the multiple ingredients and multiple origins of ingredients that are contained in candy.			
2. Student researches and identifies the origins of ingredients by temperate or tropical classifications.			
3. Student measures on maps the distance ingredients must travel to be processed into candy.			
4. Student creates a map that indicates the distances ingredients travel from their source through production and dissemination in markets.			
5. Student creates labels that delineate the production costs of candy, indicating the hidden costs and making them explicit.			
6. Student gives a two-minute oral presentation on the differences in cost between locally grown foods and foods that travel long distances.			