



**El Salvador
Sixth Grade**

National Standards for Grade Six Lessons

Visual Arts

Standard 2

Knows how to use structures (e.g., sensory qualities, organizational principles, expressive features) and functions of art.

Level III (Grade 5-8)

Knows how the qualities of structures and functions of art are used to improve communication of one's ideas.

Geography

Standard 2

Knows the location of places, geographic features and patterns of the environment.

Level III (Grade 5-8)

Knows the relative location of, size of and distances between places (e.g., major urban centers in the United States).

Life Sciences

Standard 6

Understands relationships among organisms and their physical environment.

Level III (Grade 5-8)

Knows factors that affect the number and types of organisms an ecosystem can support (e.g., available resources; abiotic factors such as quantity of light and water, range of temperatures and soil composition; disease; competition from other organisms within the ecosystem; predation).

Mathematics

Standard 6

Understands and applies basic and advanced concepts of statistics and data analysis.

Level III (Grade 5-8)

Reads and interprets data in charts, tables, plots (e.g., stem-and-leaf, box-and-whiskers, scatter) and graphs (e.g., bar, circle, line).

Organizes and displays data using tables, graphs (e.g., line, circle, bar), frequency distributions and plots (e.g., stem-and-leaf, box-and-whiskers, scatter).

Sciences

Standard 6

Understands relationships among organisms and their physical environment.

Level III (Grade 5-8)

Knows factors that affect the number and types of organisms an ecosystem can support (e.g., available resources; abiotic factors such as quantity of light and water, range of temperatures, and soil composition; disease; competition from other organisms within the ecosystem; predation).

Geography

Standard 3

Understands the characteristics and uses of spatial organization of Earth's surface.

Level III (Grade 5-8)

Understands how places are connected and how these connections demonstrate interdependence and accessibility (e.g., the role of changing transportation and communication technology, regions and countries Americans depend on for imported resources and manufactured goods).

Thinking and Reasoning

Standard 6

Applies decision making techniques.

Level III (Grade 5-8)

Makes decisions based on the data obtained and the criteria identified.

Secures factual information needed to evaluate alternatives.

Environment and Society

Standard 14

Understands how human actions modify the physical environment.

Level III (Grade 5-8)

Understands the environmental consequences of people changing the physical environment (e.g., the effects of ozone depletion, climate change, deforestation, land degradation, soil salinization and acidification, ocean pollution, groundwater-quality decline, using natural wetlands for recreational and housing development).



Sixth Grade
El Imposible National Park, El Salvador

Lesson 2: Whose Breakfast Isn't for the Birds?

Concept

Coffee plants are grown in the same habitats required by many birds. Rainforests, temperate forests and the landscapes that link them must be carefully managed in order to ensure the survival of migratory birds.

Essential Question

Whose breakfast isn't for the birds?

Objectives

1. Students will create, administer and analyze a survey designed to ascertain respondents' understanding of where coffee comes from and their preferred types of coffee.
2. Students will research natural histories of different coffee types.
3. Students will compare migratory bird habitat with locations of coffee farming.
4. Students will write and send a letter to a coffee drinker illustrating the connection between their coffee, tropical forests and bird habitat.

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 El Salvador 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 Stories**- The Rainforest Alliance has developed two original stories for use with these units, available in English, Spanish and Portuguese. The stories are available to download and print or can be viewed on-screen.

**Alex Goes Exploring in El Imposible
Life In San Miguelito**

- **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.
 - Ocelot
 - Great Curassow
 - King Vulture
 - Blue-Crowned Motmot

- **Rainforests: Supermarkets to the World:** A great two-page introduction to the many fruits, vegetables, medicines and other products that we use everyday, which are harvested from tropical rainforests.
- **Park Profile:** Visit <http://www.rainforest-alliance.org/programs/aar/el-salvador.html> for a basic introduction to El Imposible National Park.
- **Rainforest Poster:** Check out this colorful two-page poster depicting the layers of the rainforest, rainforest products, and the threats faced today by many of the world's rainforests is available for your use.

Inside the Canopy – Structure and species of the rainforest
Status Report – What is happening to the rainforest

- **Rainforest Products:** Click here <http://www.rainforest-alliance.org/resources/daily-use.html> for a summary of products found in our homes and supermarkets that either originated in tropical forests or are currently produced there.
- **Profiles in Sustainability:** View our Profiles in Sustainability <http://www.rainforest-alliance.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.
- **Conservation Coffee Summary:** Click here to access an eight-page introduction to the issue, including a glossary of terms. These are appropriate for students to read independently.
- **Venn Diagram Template:** Download a photocopy-ready Venn diagram designed to complement this unit.
- **Certificate of Accomplishment:** Print out colorful rainforest certificates for your students to commemorate their completion of these units.

Informational Introduction for the Teacher

In this lesson, students generate first-hand knowledge about the types of coffee preferred by members of their school community. They use survey data as a springboard for examining coffee production and its relation to birds. Students consider the amount of coffee consumed in the US, where it is grown, range of rainforests in the tropics and locations of bird migration routes. Finally, students write letters to coffee correspondents illustrating the connection of their favorite coffee type with birds and rainforests.

Informational Introduction for the Students

The United States is the world's largest consumer of coffee. More than half of the US population drinks coffee daily. Where does this coffee come from? Where is the nearest coffee farm? What does it have to do with birds? By surveying some coffee drinkers, we will find out what people know about where their morning cup comes from and research how coffee is connected to rainforests and migratory bird populations. Finally, we will offer them expert information on their drink of choice so that they might become more aware of some of the impacts of drinking coffee, and know what they can do to preserve bird habitat.

Step 1 - CONNECT (The Concept to Prior Knowledge)

Challenge

Students develop, disseminate and analyze a survey on the particular types of coffee preferred by their teachers, school staff, and parents.

Materials

- Paper
- Writing utensils

Procedure

1. Tell students they will be creating a survey for coffee drinkers to determine their knowledge about the drink and which types of coffee teachers, school staff and parents prefer.
2. Lead students in a discussion of the possible questions to investigate through the survey. Brainstorm possibilities. Some questions to pursue may include:
 - What are the most popular types of coffee?
 - Do coffee drinkers know where their coffee comes from?
 - Are coffee drinkers aware of the different types of coffee (sun coffee and shade-grown)?
 - Do coffee drinkers know the benefits of shade-grown coffee?
3. Offer students a variety of survey techniques. Some examples are listed below.

Open Ended: What country does your coffee come from?
 How does growing coffee affect the environment?
 Where does most coffee come from?

Likert Scale

1 = Well informed, 2= Somewhat informed, 3= Little knowledge, 4= Don't know at all

- How knowledgeable are you about where your coffee comes from?
- How knowledgeable are you about the different varieties of coffee?
- How knowledgeable are you about shade grown coffee?

Description

Check the space next to all of the words that describe the coffee you drink.

- | | |
|--------------------------------------|--|
| <input type="checkbox"/> Costa Rican | <input type="checkbox"/> Shade Grown |
| <input type="checkbox"/> Colombian | <input type="checkbox"/> Sun Coffee |
| <input type="checkbox"/> Brazilian | <input type="checkbox"/> Flavored |
| <input type="checkbox"/> Kenyan | <input type="checkbox"/> Organic |
| <input type="checkbox"/> Kona | <input type="checkbox"/> Other (please specify)_____ |
| <input type="checkbox"/> Indonesian | |
| <input type="checkbox"/> Indian | |

True/False

Coffee grows best in areas near the equator.
Shade-grown coffee techniques can help migratory birds.

4. Ask students which survey they think will be most effective in finding the information they desire.
5. Have students develop a list of questions to include in the survey.

6. Assist students in designing the survey.
7. After students survey teachers, staff and parents, compile the data.
8. Ask students to generate a list of most popular coffee types.
9. Engage students in a follow up discussion about their survey. Ask questions:
 - How knowledgeable were the respondents about where their coffee comes from?
 - How might informing people about the origins of coffee and the effects on the environment change things?
 - Do you think it's important that people know where their coffee comes from?
 - Why or why not?

Step 2 - LITERATURE/DISCUSS (Give Expert Information Book; Ask Questions)

Challenge

Students research the natural history of coffee grown in one of the Latin American coffees preferred by one of their survey respondents. They will use this information during Step 4 to write and send a letter to this person regarding the implications of their coffee preference on the lives of migratory birds.

Materials

- Survey results from Step 1
- World atlas
- Rainforest Alliance supporting materials
- Computers with Internet access

Procedure

1. Challenge students to use one of their survey respondent's answers and research the natural history of this type of coffee. Have students focus on the Latin American coffee types. For example, if the respondent checked "Costa Rican" and "Sun Coffee," challenge the student to research the Costa Rican rainforest areas, the specifics of coffee beans from Costa Rica (flavor, aroma, etc.), coffee farming in Costa Rica, and the possible environmental impacts of sun coffee farming.

Helpful Internet Resources:

- <http://www.rainforest-alliance.org/programs/agriculture/shop/index.html>
- <http://www.seattleaudubon.org/shadecoffee>
Audubon Society Web site - section about shade grown coffee.
- <http://www.britishcoffeeassociation.org/index.htm>

2. Have students compile their data. Tell students they will be using their research later in the lesson when they will write a letter to survey respondents about their favorite coffee.

Step 3A - PRACTICE (Math and Learning Centers)

Challenge

Through a series of guided calculations, students develop a sense of survey respondent knowledge of coffee, how much coffee is grown in rainforests, and the impact of coffee farming techniques on migratory birds.

Materials

- Paper
- Writing utensils

Procedure

Challenge students to complete the calculations and answer the related questions.

1. One acre of rainforest land can produce about 1,000 pounds of shade-grown coffee in a year. If the United States imports 2.5 million pounds of coffee in a year, how many acres of rainforest land is needed?
2. The average American drinks 3.4 cups of coffee per day. If half of the US population drinks this amount, how many cups does that equal? If half of the world's population drank the same amount, how many cups would that equal? (US and World population available at <http://www.census.gov/main/www/popclock.html>).
3. How many acres of rainforest would be needed to satisfy the world's coffee consumption if half of the people on earth drank 3.4 cups per day?
4. Create a graph illustrating some aspect of the class survey data. Use one of the following formats: Pie chart of the most popular coffee types chosen, bar graph of the amount of knowledge people said they had about their coffee, chart depicting which countries are most preferred for their coffee beans.

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

Challenge

Students draw a map of North, Central and South America and illustrate the relationship between coffee production, coffee consumption and bird migration.

Materials

- World maps for each student, with countries outlined
- Colored pencils
- World atlas for reference
- Field guides of North American birds
- Rainforest poster (available on the Resource Index)

Procedure

1. Hand out several world atlas references.
2. Challenge students to draw a large map of North, Central and South America, including outlines of countries.
3. On their respective maps, challenge students to identify: 1) Countries containing rainforest; 2) Countries exporting coffee; 3) Major bird migration routes of a common North American migratory bird. Have students use color to illustrate rainforest range and countries.

4. Challenge students to discuss the meaning of their maps. Ask the following questions:
 - How does your map illustrate a connection between coffee production and migratory birds?
 - Who might find this information valuable?
 - Why?

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

Challenge

Each student selects one teacher, school staff member or parent to write and send a letter to highlighting the complex connection between coffee production, consumption, migratory birds and the health of temperate and tropical rainforests.

Materials

- Map from Step 3B
- Calculations from step 3A

Procedure

1. Tell students that they will be writing a letter to their survey respondent in order to inform them about their choice of coffee and how it is related to migratory bird winter range, rainforests and temperate forests.
2. Challenge students to include the research discovered in Step 2, the calculations determined in Step 3A and the map created in Step 3B to explain the key connections for the coffee drinker receiving the letter.

LESSON 2 ASSESSMENT RESULTS:

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

Assessment Guidelines	3 = P (Proficient)	2 = S (Satisfactory)	1 = NW (Needs Work)
1. Student is actively engaged in the process of brainstorming, designing and writing survey. Student offers insights and respects others' opinions.			
2. Student uses resources effectively in compiling information about coffee types. Student asks relevant questions and follows through in the process of seeking answers.			
3. Student creates map in Step 3B that is accurate, to scale and effectively depicts the categories described. Student uses resources effectively to find necessary information.			
4. Student describes accurately and clearly the connection between coffee consumption, bird migration, and coffee farming in rainforest areas in letter to survey respondent. Letter is neat, professional and engaging.			