



## Seventh Grade – Honduras

### Lesson 1: Going Bananas

#### **Overview**

Bananas, the world's most popular fruit, can only be grown commercially in the tropical regions of the world where rainforests also thrive. Students will conduct a survey to understand the reasons for bananas' popularity, learn about a banana's journey from farm to school lunch, and then create a children's book about bananas that includes where and how they are grown.

#### **Subjects**

Math, Science, Health, Social Studies

#### **Concepts**

(From PLT Conceptual Framework)

The Earth's atmosphere, water, soil, climate, and geology vary from region to region, thus creating a wide diversity of biological communities. (1.3)

Human societies and cultures throughout the world interact with each other and affect natural systems upon which they depend. (6.1)

The extracting, processing, transporting, and marketing of natural resources provide employment opportunities for many people. (6.5)

#### **Skills**

Evaluating, Composing, Organizing information, Identifying Main Ideas, Word Processing, Graphing

#### **Objectives**

Students will: (1) create and conduct a survey about bananas, (2) identify reasons for bananas being popular, (3) map bananas' journey from "bulb" to lunch box, and (4) write a book for younger children that depicts important concepts about bananas and where they come from.

#### **Additional Resources and Student Pages**

- **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 that will introduce students to the country of Honduras, the wildlife and people of the country and the conservation issues they face. The slideshow can be downloaded for viewing in the classroom, printed out and read aloud or viewed online with the students.

- **Species Profiles** – The species profiles, available to view on screen or downloaded from the beginning of the unit or the Resource Index, include photos, along with information on habitat, foraging behavior, group relationships, threats, and many more facts.
  - Banana
  - Honduran White Bat
  - Orchid
  - Yucatan White-tailed Deer
- **Student Resources Pages**
  - Banana Nutrition
  - Banana Survey
  - Growing Bananas
  - Banana Import/Export Diagram
- **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

- **Rainforest Products** – Visit <http://www.rainforest-alliance.org/resources/forest-facts/lives.html> for a summary of products that we use in our everyday lives that originate in the rainforests. Both teachers and students will find information on the products found in their homes and supermarkets that either originated in tropical forests or are currently produced there.
- **Profiles in Sustainability** – Visit <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.
- **Certificate of Accomplishment** - Print out colorful rainforest certificates for your students to commemorate their completion of these units.

### **Materials**

Part A – Copies of “Banana Nutrition”, copies of “Banana Survey” student page (optional)

Part B – Overhead of banana import and export data (see Background), copies of “Growing Bananas in Honduras” student page, wall-size world map, sample children’s books, drawing paper, colored pencils or pens

### **Time Considerations**

Preparation: Part A – 30 minutes, Part B – 30 minutes

Part A – Two to three 50-minute class periods, plus time to conduct the survey

Part B – One to three 50-minute class periods

## **Background**

Bananas are, by far, the world's most popular fruit. Worldwide, people eat over 55 million tons of bananas each year!

Bananas grow in humid, tropical regions of the world. They thrive in Honduras, as well as in other Central and South American rainforests and in Africa and Southeast Asia. They require very warm climates and need lots of water.

Most people around the world eat starchy bananas that are very different than the sweet, dessert bananas. Eighty-five percent of bananas grown worldwide are the starchy, cooking bananas and plantains. These bananas are high in carbohydrates and must be cooked or baked to be edible. In many parts of Africa and Central and South America, these bananas and plantains are a staple food and an essential part of the daily diet.

Sweet bananas, which make up only about 15 percent of the bananas grown, are the familiar bananas we eat as a snack or dessert. The Cavendish banana is the most common variety of sweet banana imported to North America and Europe.

Both types of bananas – sweet and starchy – are very nutritious. They are low in saturated fat, cholesterol, and sodium, and are a good source of dietary fiber, Vitamin C, vitamin B6, potassium, and manganese.

Bananas are common in the United States and Europe today. But, that hasn't always been the case. Bananas were virtually unknown in the United States until the late 19<sup>th</sup> century and even then were considered an oddity. So rare were these fruits, that a *Scientific American* article from that period included instructions on how to peel one!<sup>1</sup> With the arrival of mass refrigeration in the early 20<sup>th</sup> century, bananas became more common in the United States, and eventually Europe, because they could be shipped more economically.

Wild bananas have large seeds, which make them unsavory to eat. The sweet Cavendish bananas grown commercially are sterile – their tiny seeds are not capable of producing new plants. Since new plants can only be obtained through cuttings, most bananas traded worldwide are clones of genetically identical plants.

For more information on bananas, see the student page, "Growing Bananas in Honduras."

## **Getting Ready**

For Part A, decide whether students will develop their own survey or use the sample one provided. Also determine how many, to whom, and by when you want students to give the surveys.

For Part B, find a teacher of a younger class willing to have your students read their books to the class. Make a slide or overhead of the banana import and export data (see Background).

## **Doing the Activity**

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<sup>1</sup> Jenkins, Virginia Scott. *Bananas: An American History*. Washington, DC: Smithsonian Institute, 2000.

### **Part A – Banana Survey**

1. Introduce the activity by asking students, “What is a common food you eat that originated in a tropical rainforest?” If they don’t think of it, give them hints to help them come up with “banana.”
2. Tell students that each year people around the world eat over 55 million tons of bananas. Ask them for their ideas of why people might like bananas so much.
3. Point out that one thing some people like about bananas is that they are very nutritious. Ask students to share what they already know about banana nutrition. Then, give them a copy of the “Banana Nutrition” student page to read silently or aloud. Ask, “What nutrients do bananas contain? How do bananas compare to other foods?”
4. Describe the differences between starchy and sweet bananas (see Background).
5. Explain that students will develop a survey to find out from family and friends whether they think bananas are popular, and if so, why. (If you are using the sample survey instead of students developing one, skip to step 11.)
6. Ask students what specifically they would like to learn from their survey (for example, whether kids like bananas more than adults, whether bananas are the favorite fruit in your community, and so on). List their ideas on the board. Where possible, help them fine-tune their ideas so that each represents a discrete piece of information.
7. Ask students the differences between open-ended and closed-ended questions (see “Tips for Writing Surveys” in Background). Go through the list of student ideas from step 5 and have them name the type(s) of questions that would be suitable for each.
8. Divide the class into small groups for developing the actual questions. Give each group one of the ideas from step 6. Allow time for groups to draft a question on that idea. Pair up groups, and have each group try out their question on the other group to make sure that it is clear and provides the intended information. Give groups a few minutes to revise their questions as necessary. When they are done, groups should write their questions on the board or overhead.
9. Have the class look over the list of questions and decide on a logical ordering. Evaluate whether, as a whole, the survey will elicit the types of information the students were seeking. Then, look at individual questions to make sure they make sense. Have students revise their questions as necessary.
10. Ask a small group of volunteers to type or neatly write the final questions for the survey.
11. Make copies of the survey to distribute. Explain to students how many, to whom, and by when they should give the surveys.
12. When the surveys are all in, have each group compile the results for the question they drafted in step 8. They should graph the results or determine another way to present the information to the class.

13. Have groups present the results of the survey to the class.

- Did the survey give the information we intended?
- Why do you think bananas are important?
- How might people in another country answer the survey questions?

### **Part B – Banana Books**

1. Ask students, “Can bananas grow where we live? Where do the bananas we eat come from?”
2. Display the graphs showing the top banana exporting and importing countries. Have them find each of the exporting countries on the world map and determine which country is the closest to your town. Have them calculate how many miles or kilometers bananas must travel before reaching the grocery store nearest your school.
3. Give students copies of the student page, “Growing Bananas in Honduras” to read. Ask, “What are the different steps bananas go through before they end up in your lunch? What surprised you about bananas?”
4. Explain to students that they will work in groups to create a children’s book for younger students about bananas, and describe something about the class of students you’ve arranged to be the audience (see Getting Ready). Each book must contain information about where and how bananas grow, but may be in the form of either a fictional story or a non-fiction book. Books should have a cover, a title page with title and authors’ names, and at least 8 pages of content. Discuss:
  - How much can children this age read?
  - What information would they find interesting?
  - How could you present the information so that they would be engaged?
  - What pictures would be helpful?
5. Display sample children’s books appropriate for the age of the audience, and give students time to plan and produce their book pages. When the books are complete, you may want to have them bound at a copy store.
6. Meet with the younger class as arranged, and have your students read their books to the younger students. Afterwards, ask your students how well they thought the experience went, what the younger students seemed to enjoy about the books, and what they might do differently next time.
7. PLT would love to see your students’ work. Send PLT copies of the books, and they may be published on-line.

### **Enrichment**

As a fun addition to the meeting with younger students, make a healthy snack with bananas – fruit smoothies! One simple recipe is to fill the blender jar half full with any type of fruit juice (orange, pineapple, or even apple are good), add 1 sliced banana and a handful of soft fruit (such as strawberries, raspberries, blueberries, or slices of peach, pear, melon, or kiwi). Whir, pour into small paper cups, and enjoy! This recipe will make four to five cups.

New Cavendish banana plants are obtained through cuttings, not through seeds. In fact, the seeds are sterile. Help students research to find out the differences between vegetative and seed reproduction in plants.

### **Assessment Opportunity**

Use the students' compilations of the survey responses in Part A to assess their understanding of important characteristics of bananas. For Part B, use their children's books to determine what they have learned about the process of growing bananas.

### **Additional Resources**

Virginia Scott Jenkins, *Bananas: An American History* (Smithsonian Institute Press, 2000). This book explores the role that bananas have played in the United States since they first became popular in the 1880s. It describes the ways that banana production has been intermixed with the politics of the United States and Central America for more than a century, and shows how bananas have influenced American culture.

**Student Resource Page : Banana Nutrition**

Can something that tastes so good also be good for you? The good news about bananas is that they are very nutritious. They are low in saturated fat, cholesterol and sodium and are a good source of dietary fiber, Vitamin C, Vitamin B6, potassium and manganese. The banana is sometimes called “brain food” because each banana has 602 milligrams of potassium, which is important for the brain to function well. In Australia the banana is called the “good mood food,” because its high Vitamin B6 content can help to relieve anxiety and stress. Compare the nutrition labels for these four different snacks.

One Medium Banana, 7"-8" long

<b>Nutrition Facts</b>	
Serving Size 118g	
Amount Per Serving	
<b>Calories</b> 105	Calories from Fat 3
% Daily Value*	
<b>Total Fat</b> 0g	1%
Saturated Fat 0g	1%
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 1mg	0%
<b>Total Carbohydrate</b> 27g	9%
Dietary Fiber 3g	12%
Sugars 14g	
<b>Protein</b> 1g	
Vitamin A 2%	Vitamin C 17%
Calcium 1%	Iron 2%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

NutritionData.com

\* Potassium 12%

One Chocolate-Coated Ice Cream Bar

<b>Nutrition Facts</b>	
Serving Size 1 bar (50g)	
Amount Per Serving	
<b>Calories</b> 166	Calories from Fat 108
% Daily Value*	
<b>Total Fat</b> 12g	19%
Saturated Fat 7g	36%
<b>Cholesterol</b> 14mg	5%
<b>Sodium</b> 34mg	1%
<b>Total Carbohydrate</b> 12g	4%
Dietary Fiber	0%
Sugars 9g	
<b>Protein</b> 2g	
Vitamin A 0%	Vitamin C 0%
Calcium 6%	Iron 0%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

NutritionData.com

\* Potassium 0%

One Raw Apple, with Skin

<b>Nutrition Facts</b>	
Serving Size 125g	
Amount Per Serving	
<b>Calories</b> 65	Calories from Fat 2
% Daily Value*	
<b>Total Fat</b> 0g	0%
Saturated Fat 0g	0%
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 1mg	0%
<b>Total Carbohydrate</b> 17g	6%
Dietary Fiber 3g	12%
Sugars 13g	
<b>Protein</b> 0g	
Vitamin A 1%	Vitamin C 10%
Calcium 1%	Iron 1%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

NutritionData.com

\*Potassium 4%

One Fruit-Filled Non-Fat Granola Bar

<b>Nutrition Facts</b>	
Serving Size 100 grams	
Amount Per Serving	
<b>Calories</b> 342	Calories from Fat 8
% Daily Value*	
<b>Total Fat</b> 1g	1%
Saturated Fat 0g	1%
<b>Cholesterol</b> 0mg	0%
<b>Sodium</b> 16mg	1%
<b>Total Carbohydrate</b> 78g	26%
Dietary Fiber 7g	30%
Sugars 55g	
<b>Protein</b> 6g	
Vitamin A 10%	Vitamin C 3%
Calcium 0%	Iron 22%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

NutritionData.com

\*Potassium 2%

Source: Nutrition Facts web site [www.nutritiondata.com/facts-001-02s01fa.html](http://www.nutritiondata.com/facts-001-02s01fa.html), accessed 1/25/07.

**Student Resource Page : Banana Survey**

**1. Which fruit is your favorite? (Check one.)**

- Apple  
 Banana  
 Grapes  
 Orange  
 Strawberries  
 Watermelon  
 Other (write the name): \_\_\_\_\_

**2. How many bananas do you eat in a typical week? (Check one.)**

- None.  
 1-3 bananas a week  
 4-6 bananas a week  
 6 or more bananas a week

**3. What do you like about bananas? (Check all that apply.)**

- They are sweet.  
 They are soft.  
 They are easy to peel and eat.  
 They are good for you.  
 They are easy to pack in a lunch.  
 Nothing. I don't like them.  
 Other (describe): \_\_\_\_\_

**4. How do you like to eat bananas?**

(Check the box that best describes how much you like each way.)

	Yuck!	So-So	Pretty Good	Yummy	Delicious!
	1	2	3	4	5
Just peel it and eat it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In smoothies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In banana bread	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
On pancakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In banana splits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**5. Where do you think bananas grow?**

\_\_\_\_\_

## Student Resource Page : Growing Bananas in Honduras e

You probably knew that bananas are popular lunch items at your school, but did you know that they are the number one fruit all over the world? Over 55 million tons of bananas are eaten worldwide each year!

Bananas grow in humid, tropical regions of the world. They thrive in Honduras, as well as in other Central and South American rainforests and in Africa and Southeast Asia. They require very warm climates and need lots of water. They grow best where it rains a lot. In the US, bananas are grown in Hawaii, but only a very small amount.

The word “banana” comes from the Arabic word for “finger.” Bananas got this name because they resemble fingers that grow together in long rows, which are called “hands.” We call them “bunches.”

Although there are about 400 different types of bananas, most of the bananas we eat in the United States are just one type – the Cavendish banana. This banana is a sweet dessert banana and is generally eaten raw or mixed into a recipe. Other types of bananas must be cooked to be edible, and people over the world bake, roast, barbecue, or fry them.

In addition to food, banana plants also provide materials for many other uses. The plant fiber makes a very strong paper that is used in tea bags and paper money. People also use banana leaves for making umbrellas, for roofing material, for wrapping food during cooking, and for making trays, plates, baskets and carpets.

### How Bananas Grow

Although banana plants grow as tall as trees, they are not actually trees. They are giant herbs, related to the lily and orchid families.

Bananas need a lot of water, but they don’t like having their “feet” wet. That’s why they are grown in fields that look like corrugated cardboard, with the plants growing on the tops of the ridges. The farmers can fill the trenches with water, but then drain them after the plants have had a good long drink.

A banana plant grows from a root clump (or rhizome) sort of like a tulip bulb. The plant grows rapidly and can reach its full height of 20 to 40 feet in about 9 months.

The “trunk” of the plant is actually made up of closely packed leaves wrapped around each other. After growing for about 6 to 8 months, the plant will have a nice crown of leaves. At this point, a flowering stem emerges from the top and a large bud begins to develop.

As the bud unfolds, it reveals double rows of tiny flowers. Each of these flowers will become an individual banana, or a “finger.” Each row of bananas is called a “hand” and is made up of 14 to 20 fingers. Because the stem will grow about 9 to 12 hands that means up to 240 bananas per plant!

About 14 days after the stem has emerged, the weight of the bananas causes the stem to hang upside. At this stage, the fruit is covered with a bag to protect it from insects and sun damage. The plant is also supported with twine tying it at different angles to neighboring plants. This will help keep the plant from toppling over with the weight of the bananas.

Because the stalk is approximately 93% water, and not woody, even modest winds can potentially knock down a banana plant and ruin the crop. Plantations use a system of guy wires to tie the plants together and support them in case of wind. However, a powerful storm can devastate a banana crop. When Hurricane Mitch swept through Honduras in 1998, nearly all of the country’s banana plantations were destroyed.

## Harvesting the Bananas

About 12 weeks after bagging, the green-colored fruit is ready to harvest. To harvest the bananas, one worker cuts the stem from the plant, while another stands underneath to catch the falling stem on his shoulder. The cutter then cuts down the plant, allowing another stalk to grow from the root clump.

Once the stem is cut, the starch in the banana begins to change into sugar, which will make the banana sweet by the time it reaches your home.

## Packing the Bananas

After being harvested, the bananas are taken to packing stations, where they are prepared for shipping. The hands are cut off of the stems and then cut into clusters of 4 to 10 bananas. The workers must be careful to cut neatly and accurately to prevent rotting, and wash off the sap or latex from the cut stems in a giant wash tub. After being washed in a final shower, the bananas get stickers and are packed into boxes.

## Shipping

Within 24-48 hours after harvesting, the boxes of bananas are trucked and loaded on a refrigerated ship. The cool temperature of the ship keeps the bananas from ripening any further until they get to their final destination. At their destination, the bananas go from the ship into a dockside warehouse. From there they are trucked or trained to neighborhood stores.

Approximately 3,700 people work for Chiquita in Honduras, where the company exports more than 9 million 40-pound boxes of bananas annually.

As soon as the bananas are removed from the cool air of the refrigerated ship, they start ripening again. As they ripen, their peels lighten from shades of green to the bright yellow color you see in the store to a darker yellow with flecks of brown.

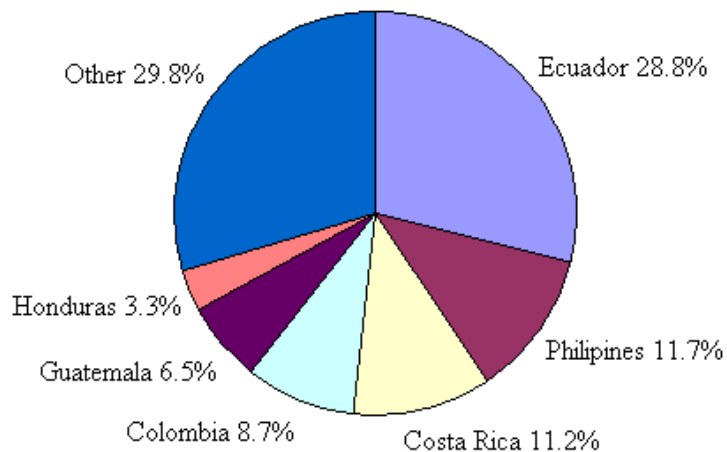
Sources: International Network for the Improvement of Banana and Plantain. Accessed December 12, 2004 at [www.inibap.org](http://www.inibap.org).

## Banana Exports and Imports Diagram

Most of the world's bananas are eaten where they are grown. Only about 20 percent are exported to other countries.

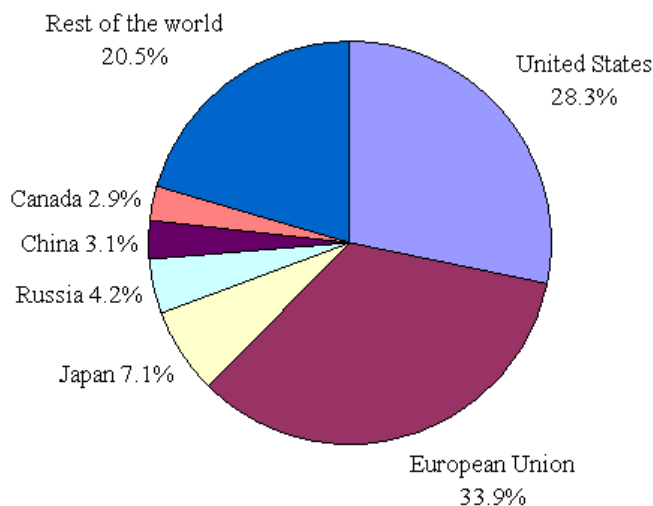
### Banana Exports

Top Exporting Countries  
(Average for the 2000-2004 period)



### Banana Imports

Top Importing Countries  
(Average for the 2000-2004 period)



Source: "Banana Market." United Nations Conference on Trade and Development (UNCTAD). Accessed September 10, 2008 at <http://r0.unctad.org/infocomm/anglais/banana/market.htm#exports>



## Seventh Grade – Honduras

### Lesson 2: Finding the Top Bananas

#### **Overview**

The certification of banana production is one way to help conserve the tropical rainforest ecosystem and protect the livelihood of people who live there. In this activity, conduct a banana “scavenger hunt” at a local grocery store to learn more about what countries export bananas to the U.S., how bananas are used, and what costs are associated with bananas. The students then develop their own certification criteria and compare them to the Rainforest Alliance Certification standards.

#### **Subjects**

Social studies, Science, Math

#### **Concepts**

(From PLT Conceptual Framework)

International cooperation directed toward conserving resources and protecting environmental quality is beneficial to human health and the well being of other life forms. (5.3)

Human societies and cultures throughout the world interact with each other and affect natural systems upon which they depend. (6.1)

All humans consume products and thereby affect the availability of renewable and nonrenewable natural resources. (6.4)

Consumers “drive” the marketplace with their demands for goods and services. Such demands shift with time and may have positive or negative effects on the resource base and environmental quality. (15.2)

#### **Skills**

Establishing Criteria, Analyzing, Observing, Word Processing

#### **Objectives**

Students will: (1) look for different types of bananas and banana products at home or at a grocery store, (2) explore the concept of certification and identify possible criteria for certifying bananas, (3) compare the Rainforest Alliance certification process to the criteria they developed, and (4) develop a brochure that explains what banana certification is and how it helps to sustain the rainforest and the people who live in those regions.

## Additional Resources and Student Pages

- **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.
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- **Species Profiles** – The species profiles, available to view on screen or downloaded from the beginning of the unit or the Resource Index, include photos, along with information on habitat, foraging behavior, group relationships, threats, and many more facts.
  - Banana
  - Honduran White Bat
  - Orchid
  - Yucatan White-tailed Deer
- **Student Resources Pages**
  - Banana Scavenger Hunt
  - Standards for Certification
  - Growing Bananas
  - Banana Import/Export Diagram
- **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
- **Rainforest Products** – Visit <http://www.rainforest-alliance.org/resources/forest-facts/lives.html> for a summary of products that we use in our everyday lives that originate in the rainforests. Both teachers and students will find information on the products found in their homes and supermarkets that either originated in tropical forests or are currently produced there.
- **Profiles in Sustainability** – Visit <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.
- **Certificate of Accomplishment** - Print out colorful rainforest certificates for your students to commemorate their completion of these units.

**Materials**

Part A – copies of “Growing Bananas in Honduras” student page from the 7<sup>th</sup> Grade Activity (optional); copies of “Banana Scavenger Hunt” student page

Part B – copies of “Banana Standards for Rainforest Alliance Certification” and “Case Study: Growing Bananas in Honduras” student pages; sample brochures (optional); drawing paper and colored pencils, access to computers and layout software

**Time Considerations**

Part A – Two 30-minute periods, plus time to conduct scavenger hunt

Part B – One to two 50-minute periods

**Background**

With a market of nearly five billion dollars a year, the banana is the world’s most popular fruit, and the most important food crop after rice, wheat, and maize. Banana businesses are economic pillars in many tropical countries, providing millions of jobs for rural residents.

But, for much of its history, the banana industry was notorious for destructive farming practices. As companies tried to keep production high and costs low, they tended to grow only one crop in a plantation, which made the plants more susceptible to disease. To combat this, they would apply large amounts of pesticides, which would leak into the water table, pollute irrigation canals and drinking water supplies, and put workers in danger.

In 1991 the Rainforest Alliance, along with partner groups and other stakeholders, established the first standards for responsible banana production. Today, more than 15% of all the bananas in international trade come from Rainforest Alliance Certified farms.

These farms must demonstrate adherence to a rigorous set of standards that conserve ecosystems, increase water quality, promote sound waste management, reduce agrochemical use, and improve quality of life for farm workers and their families. The environment and the communities surrounding certified banana plantations benefit from both on-farm improvements and off-farm recognition, setting the pace for the rest of the banana sector.

In Honduras, for example, the Rainforest Alliance is working both with large and small businesses to achieve banana certification, ensuring that the rainforests are conserved and that the land and people are treated well. Honduras has a very diverse ecology, but it also facing an expanding urban population and an economy based primarily on agriculture – with bananas as one of the main crops. Practicing sustainable agriculture is vital here.

## **Part A – Banana Scavenger Hunt**

### **Getting Ready**

1. Plan your schedule so that students have time to complete the scavenger hunt at home or as part of the family's normal shopping trip.
2. (Optional) For Part B, gather a variety of brochures as examples of what an informational brochure might look like.

### **Doing the Activity**

1. Ask students whether they have ever eaten a banana. Have them name things that they know about bananas, such as where in the world bananas grow or how bananas grow.
2. If students do not know much about bananas and their cultivation, have them read the student page from the 7<sup>th</sup> Grade activity (<http://www.rainforest-alliance.org/programs/education/teachers/curriculum/honduras/seventh/studentpage/growingbananas.htm>).
3. Give students a copy of the Banana Scavenger Hunt student page. Explain to students that they should look at home or go with an adult to the grocery store to find as many banana products as possible. You might offer a reward to the student that finds the most.
4. Allow time for students to complete the scavenger hunt.
5. After the scavenger hunt, have students tally the number of products they found to see who found the most. Discuss:
  - Were there more or fewer banana products than you expected?
  - Which category had the most products?
  - What was the most unusual banana product we found?
  - Where do the bananas we eat come from?

### **Variation – Grocery Store Field Trip**

1. Contact the manager of a nearby grocery store to arrange a class field trip for doing the scavenger hunt in groups of two or three students. If possible, also arrange a “behind the scenes” tour of the areas where produce is received, prepped, and displayed, with a special focus on bananas. You might plan to split the class into two, with half the class taking the tour while the others do the scavenger hunt with chaperones.
2. Tell students that they will be going on a field trip to a grocery store, where they will have a “behind the scenes” tour of how the store handles bananas. They will also have a “scavenger” hunt to look for as many different kinds of banana products as possible. Make sure that students understand the purpose of the field trip: to see how bananas are handled at the store, to learn where the bananas come from, and to find other products that contain bananas.
3. Explain that students must work in groups of two or three and follow strict behavior expectations, including (1) staying with their group and (2) being respectful of store employees, store patrons, and merchandise at all times. Make clear what the consequences will be for not meeting these expectations.

4. During the field trip, circulate among the various scavenger hunt groups to check on how many products they are finding and to refocus their search, if necessary.

### **Part B – Banana Certification**

1. Ask students whether they've ever gotten a certificate for taking a class, completing a program, or doing a good job, and ask them to describe what it means to "certify" something. List some of their ideas on the board.

2. Explore the concept of certification deeper by asking students what qualities and qualifications they would want a lifeguard to have. Explain that in this case, certification ensures that a lifeguard meets the necessary qualifications. Discuss:

- Why do you think certification is important to all the parties involved (in this case, the lifeguard, the swimmers, parents, and the people who manage the pool or beach)?
- Why might it be significant that a "third party" does the certification (in this case, rather than lifeguards certifying themselves)?

3. Bring the discussion to bananas by asking: Does it matter to you where your bananas come from? If any of the bananas at the grocery store (from Part A) were labeled as "certified," what might that mean? Why might it be important to certify bananas?

4. Have partners or small groups create a list of criteria they would include if they were charged with the task of certifying bananas. Ask them to not only consider the healthiness of the bananas for consumers, but also the health of the land on which the bananas are grown, the health of the plants and animals in the nearby rainforest, and the well-being of the farm workers. Ask them to share elements from their list with the class.

5. Give students a copy of the "Rainforest Alliance Certification" student page and read aloud the nine standards for banana certification. Ask students to compare the Rainforest Alliance certification criteria to the ones they developed. Are there any criteria students didn't include in their lists? Are there any they would add?

6. Have students read the "Case Study: Growing Bananas in Honduras" student page. As they read, students should look for answers to the questions:

- How does banana certification help the tropical rainforests?
- How does it help the people who live in those areas?
- How does it help consumers?

7. Explain to students that they will use what they have learned to create a brochure that educates consumers about banana certification. The brochure should explain (1) what banana certification is, (2) the criteria included in Rainforest Alliance certification, and (3) the benefits of banana certification for the consumer, the rainforest, and other people.

8. If you have them, distribute sample brochures for students to peruse. Discuss:

- What information do you think people would want to know about banana certification?
  - In what different ways is information presented in brochures?
  - What ways would work for the banana certification information?
  - What different sections should our brochures contain (a title page, content pages, contact page, etc.)?
9. Give students time to create their brochures either individually or in small groups, using paper and colored pencils or computer software. Have them share their products with the class.

### **Enrichment**

Conduct a study of area grocery stores to find out whether certified bananas are more expensive than non-certified ones. Discuss: Should certified bananas be more expensive? How much more would people be willing to pay for certified bananas?

### **Assessment Opportunity**

For Part B, assess student brochures in terms of how well they explain what banana certification, the criteria for certification, and the benefits of certification.

### **Additional Resources**

Virginia Scott Jenkins, *Bananas: An American History* (Smithsonian Institute Press, 2000). This book explores the role that bananas have played in the United States since they first became popular in the 1880s. It describes the ways that banana production has been intermixed with the politics of the United States and Central America for more than a century, and shows how bananas have influenced American culture.

**Student Resource Page : Banana Scavenger Hunt**

Find as many different banana products as you can in the following categories. Write down the name of the product, how much it costs, and where it is from.

Category	Product with Bananas	Cost	Where from	Labeled as certified? (If so, who certified?)
Produce				
Baby Foods				
Frozen Desserts				
Baking Mixes				
Snack Foods				
Ethnic Foods				
Dairy Foods				
Beverages				

**Student Resource Page :**

**Banana Standards for Rainforest Alliance Certification**

<b>Standard</b>	<b>To satisfy standard, farms must:</b>
<p><b>Ecosystem Conservation</b></p> <p>Agriculture should promote conservation and improvement of ecosystems.</p>	<ul style="list-style-type: none"> <li>▪ Have a plan to conserve and improve ecosystems within the farm.</li> <li>▪ Never remove existing forest.</li> <li>▪ Plant forest or let it regrow in areas where bananas can't be grown.</li> </ul>
<p><b>Wildlife Conservation</b></p> <p>Special steps should be taken to protect and enhance wildlife, especially species that are in danger of extinction.</p>	<ul style="list-style-type: none"> <li>▪ Not grow bananas in national parks or refuges.</li> <li>▪ Prohibit hunting or collecting plants or animals from farmland.</li> </ul>
<p><b><u>Fair Treatment and Good Conditions for Workers</u></b></p> <p>Agriculture should improve the standard of living for workers and their families.</p>	<ul style="list-style-type: none"> <li>▪ Not discriminate against workers.</li> <li>▪ Pay workers at least the minimum wage.</li> <li>▪ Not hire minors.</li> <li>▪ Not block workers from unions.</li> <li>▪ Have safety policies and procedures to reduce the number of accidents.</li> <li>▪ Provide resident workers with safe and healthy living conditions.</li> </ul>
<p><b>Community Relations</b></p> <p>Companies must demonstrate a commitment to the economic and social well-being of the communities in which they work.</p>	<ul style="list-style-type: none"> <li>▪ Help protect community forests and watersheds.</li> <li>▪ Communicate openly with relevant community groups.</li> <li>▪ Locate new plantations at least 100 feet from villages or towns.</li> </ul>
<p><b><u>Limited Use of Pesticides and Chemical Fertilizers (agrochemicals)</u></b></p> <p>Agriculture should limit the use of agrochemicals, which will benefit workers, local communities, soil quality, water resources and natural ecosystems.</p>	<ul style="list-style-type: none"> <li>▪ Use other methods besides chemicals to control pests, such as weeding and using ground covers.</li> <li>▪ Only use the least toxic chemical possible.</li> <li>▪ Never use certain pesticides, which are highly toxic.</li> <li>▪ Use safe practices when transporting, storing, and using chemicals.</li> </ul>

<p style="text-align: center;"><b>Waste Management</b></p> <p>All farms must have an integrated plan for managing all waste products that promotes environmentally sound reduction, reuse, recycling, and disposal.</p>	<ul style="list-style-type: none"> <li>▪ Make composting a priority.</li> <li>▪ Recycle plastic, paper, wood, metals and glass.</li> <li>▪ Not burn trash.</li> <li>▪ Properly dispose of hazardous materials.</li> </ul>
<p style="text-align: center;"><b>Conservation of Water Resources</b></p> <p>Agriculture should promote conservation and rehabilitation of water resources.</p>	<ul style="list-style-type: none"> <li>▪ Have strips along rivers, streams, or lakes that are not farmed.</li> <li>▪ Recycle and reuse water.</li> <li>▪ Treat waste water before returning it to nature.</li> <li>▪ Monitor water quality.</li> </ul>
<p style="text-align: center;"><b>Soil Conservation</b></p> <p>Agriculture should promote the conservation and enrichment of soils so as to assure productivity for the long and short term.</p>	<ul style="list-style-type: none"> <li>▪ Conserve soil by using organic fertilizers, mulch, and compost.</li> <li>▪ Protect soil by not contaminating it with hazardous materials.</li> <li>▪ Let plants grow between the banana plants to improve and protect the soil.</li> </ul>
<p style="text-align: center;"><b>Environmental Planning and Monitoring</b></p> <p>Agriculture should be planned, monitored, and evaluated on its technical, social, environmental, and economic impacts.</p>	<ul style="list-style-type: none"> <li>▪ Have a plan for improving the social and environmental conditions of the farm in the short and long term.</li> <li>▪ Review the plan periodically and make adjustments.</li> </ul>

Source: Adapted from “Conservation Agriculture Network Complete Standards for Banana Certification,” version 9/1999.