



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 19th 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!¹ With the arrival of mass refrigeration in the early 20th 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).

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

Doing the Activity

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.