



**Kindergarten
Cachalú Biological Reserve, Colombia**

Lesson 4: The Long Road to Coffee

Concept

Coffee goes through many processes during its transformation from a plant in Colombia to being sipped in a kitchen in New York.

Essential Question

How can kids help adults understand how their coffee really got in their cup?

Total Time: 90+ minutes

Standards

Topic: Life cycles

Standard 5. Understands the structure and function of cells and organisms

Level Pre-K, Benchmark 2: Knows that living things go through a process of growth and change.

Knowledge/skill statements

1. Knows that living things go through a process of growth
2. Knows that living things go through a process of change

-Understands how human actions modify the physical environment.

-Effectively uses mental processes that are based on identifying similarities and differences.

Objectives

1. Students organize picture cards in the sequence of how food gets from a local farm to their home.
2. Students organize picture cards into a sequence to illustrate how coffee grown in Colombia gets to their home.
3. Students compare the differences between the steps locally and foreign grown produce takes to get to their home.
4. Students create an exhibit to illustrate to their parents how Colombian coffee beans make their way from the coffee fields to their home.

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 the Cachalú reserve in Colombia 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 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.

**Chayo's Andean Home
Clara and the Armadillo**

- **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.
 - Andean Condor
 - Cock-of-the-Rock
 - Leaf-Cutter Ant
 - Nine-Banded Armadillo
 - Red-Eyed Tree Frog
 - Spectacled Bear
 - Praying Mantis
- **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 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.
- **Conservation Coffee Summary** – Download this summary, which includes the environmental, social and cultural impact that coffee has had on the Americas, the connection between coffee farms and wildlife and a glossary of relevant terms.
- **Ranger Rick Article** - Download "*Rick and the Gang Find Out Why Some Coffee is Bad for Birds,*" a colorful article from the National Wildlife Federation's *Ranger Rick* magazine which describes the impact some coffee harvesting techniques have on bird habitat.
- **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.
- **Fundación Natura (Nature Foundation)** - Check out these online resources for more information about the Rainforest Alliance's partner group in Colombia:
www.rainforest-alliance.org/programs/aar/colombia.html
www.natura.org.co
- **Certificate of Accomplishment** – Print out colorful rainforest certificates for your students to commemorate their completion of these units.

Informational Introduction for the Teacher

This series of lessons challenges students to compare and contrast how locally grown apples and coffee grown in Colombia get to their kitchen. Coffee grown some 3000 miles away goes through several of processes as it travels from being a plant in Colombia to students' homes. Understanding how this process works will help students realize the interconnectedness of their community and Colombia and begin to create an understanding of the differences between locally and non-locally grown produce.

Informational Introduction for the Students

How does food grown in a farm near where we live get from the farm to our dinner table? How does coffee that is grown 3000 miles away in Colombia (where Chayo lives) get to your home? Food goes through many processes and travels in all sorts of vehicles like tractors, boats, planes, trains, trucks and cars just to get to your kitchen table. Your challenge is to compare how food grown nearby and coffee grown in Colombia compare in terms of how they get to your homes.

Step 1 - CONNECT (The Concept to Prior Knowledge)

15 minutes

Challenge

Challenge students to reveal their ideas for how locally grown apples get to their kitchen.

Materials (per class)

- Large map of your region marked with a blue house for your students' home area
- One set of 4" x 6" cards representing the path that a locally grown apple travels to get to the students' home. (Cards: apple tree, apple picker, tractor pulling large supply of apples, apple mill at same farm (washing & packaging for distribution), truck, grocery stores, automobile going to store, family buying food at a grocery store, automobile bringing food to home)
- Bag of locally grown apples (1 apple per student)
- 1 paper cut-out of a red apple (to mark location of locally grown apples on regional map)

Procedure

1. Show your students the locally grown apples. Using the map of your region, ask students where they think these apples came from. After a few guesses, tell them that they come from a local apple orchard about x minutes away from school. Ask if anyone can find the orchard on the map. Place a paper cut-out of a red apple on the map indicating the orchards location.
2. Reveal the 4" x 6" cards that are placed randomly on a board for all to see. Ask students to figure out with a partner how the cards should be ordered to illustrate how the apples from their local orchard get to their home.
3. Invite partners to come up to the board and arrange the cards. After a pair arranges the cards, ask if another group has a different order.
4. Invite other students to reveal and explain their sequence.
5. Tell students to watch you reorder the cards (if necessary) according to the actual pathway the apples take. Ask students if they noticed any differences between how you and they arranged the cards. Ask them what surprises them about the path and processes these apples go through to get to their home.

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

15 minutes

Challenge

Review the story, **Chayo's Andean Home**, a Rainforest Alliance story, and decipher true and false statements in order to consider the origins of where coffee comes from that ends up in your home.

Materials

-Story: [Chayo's Andean Home](#), available on the Learning Site

Procedure

1. Tell students that you are going to read them some passages from Chayo's story that have to do with coffee. Tell them that you are going to make a number of statements after reading, some which will be true and other statements that will not be true. Tell them their challenge will be to figure out which statements are true and to correct what's wrong about the statements that are false.
 - a. Coffee is grown in tropical rainforests in Colombia. (*True*)
 - b. Coffee harvest lasts four months from November to May. (*False. Coffee harvest lasts five months from December to April.*)
 - c. Coffee comes from a plant (tree) that produces orange berries. (*False. The berries are green and red.*)
 - d. Coffee plants on Chayo's farm grow in an open, sunny field like corn is grown around here. (*False. Coffee plants are grown beneath shade trees.*)
 - e. Birds don't like the smell of coffee berries and stay away from Chayo's shady coffee plants. (*False. We don't know if birds like the smell of coffee berries. Lots of birds hang out around the coffee plants under the shade trees.*)
 - f. Only the green berries are picked. (*False. Only the red berries are picked.*)
 - g. Inside the red berries is liquid coffee, like the liquid found in coffee cups. (*False. Inside the red berries are beans.*)
 - h. The beans are laid out on the ground to dry in the sun. (*True*)
2. Ask students these additional questions:
 - a. Do you know of any coffee farms around our area? If so, where?
 - b. Have you ever see a coffee farm? If so, describe what you saw.
 - c. Why do you think coffee isn't grown in cooler areas like where we live?
 - d. What 5 questions would you want to ask Chayo and her father about how they make coffee?

Step 3A - PRACTICE

20 minutes

Challenge

Challenge students to determine how the coffee grown on Chayo's farm gets to their home. Then challenge them to compare and contrast the two pathways they have explored so far.

Materials

- Large map of the Western Hemisphere that can be seen by the entire class (includes both United States and South America)
- A blue paper house marking your students' home area and a coffee bean taped near Chayo's home in the Andean Mountain Range
- Regional map used in Step 1
- 1 can of Colombian coffee
- A coffee bean and clear tape
- 4" x 6" cards representing the path that coffee travels from Chayo's farm in Colombia to your students' homes. (Cards: coffee tree, berries being picked, beans being extracted from berries, farmer raking beans for drying in sun, truck, industrialized coffee roasting or grinding factory, truck, packaging plant, truck distribution center, truck, plane/boat, truck, U.S. distribution center, truck, store, car going to store, customer buying coffee at store, car going home)
- 4" x 6" cards used in Step 1
- Supplemental information about coffee conservation -- See Additional Resources in the beginning of this unit.

Procedure

1. Show your students a large map of the Western Hemisphere.
2. Ask a student to tape a coffee bean on the area to indicate where Chayo lives.
3. Ask another student to tape the blue paper house to indicate where they live.
4. Reveal the 4" x 6" cards that are placed randomly on a board for all to see. Ask students to figure out with a partner how to order the cards to illustrate how the coffee grown on Chayo's farm gets to their homes.
5. Invite partners to come up to the board and arrange the cards. After a pair arranges the cards, ask if another group has a different order.
6. Invite other students to reveal and explain their sequence.
7. Tell students to watch you reorder the cards (if necessary) according to the actual pathway the coffee takes. Ask students if they noticed any differences between how you and they arranged the cards. Ask them what surprises them about the path and processes coffee goes through to get to their home.
8. Display both sets of cards, with the apple sequence above the coffee sequence. Try to line up similar steps in both sequences, one on top of the other.
9. Tell students that you are going to see how many times you can go around the room and have each of them say something new that compares the path of the local apples with the path of the coffee to their home. (For example, "The coffee travels in more different kinds of vehicles than the apples." Or, "The apples go through fewer steps to get to our home than the coffee once it is removed from the tree.") If you want, you can offer each of them an apple if they can go around at least 1 1/2 times without repeating each other.
10. Encourage them to do simple counting comparisons when possible.

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

40 minutes

Challenge

Challenge your students to create a new coffee can label that illustrates the many steps Colombian coffee takes to get to their homes.

Materials (per student)

- 16 oz. coffee can
- Assortment of colored paper and art supplies
- Crayons, markers, etc.
- Scissors
- For students doing the Alternative Procedure: Poster board divided into 8 - 12 sections. This paper will represent a storyboard.

Materials (per class)

- General assortment of art supplies (tape, glue)
- Lots of magazines that can be cut up
- The 4" x 6" cards depicting the correct sequence of steps of coffee from Colombia to coffee at students' homes

Procedure

1. Tell students that they are going to create a new label for a coffee can that they will bring home to educate their parents about the many steps coffee goes through to get to their home. The labels should surround the entire can. Welcome them to use the top and bottom of the can too.
2. Challenge students to use the 4x6"cards as a reference to create their new labels.
3. Ask students to tell you what you should name the coffee and where you should write the name on their label.

Alternative Procedure (for students who would prefer a larger area to create on)

1. Give each student a storyboard and drawing utensils.
2. Ask your students to draw in order each step of the coffee process on this storyboard. The children should draw a picture in each square on the paper.

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

20 minutes

Challenge

Invite your students to exhibit their respective coffee labels (or storyboards) with each other before bringing them home. Then challenge your students to teach their parents how coffee grown in Colombia makes its way to their coffee cup.

Materials (per class)

- Newly labeled coffee cans
- Student-created storyboards

Procedure

1. Have students exhibit their coffee cans around the room. Invite students to roam around the room like they would an art exhibit, to admire each other's labels.
2. Tell the students that they can take their new coffee cans home to help teach their parents about what they just learned.
4. Send your students' coffee cans and storyboards home to their parents with a note explaining what the students were learning about. On this note, encourage the parents to ask their child the following questions. Review these questions with your students first.
 - a. Where is coffee grown? (Coffee is grown in places that are hot and humid like the tropical rainforests in Colombia. See www.sorana.com/libstory.htm).
 - b. Does coffee come from a bush? (No. Coffee comes from a shrub-like tree that grows 10 - 12 meters high.)
 - c. Is coffee made from the tree's twigs or roots? (No, coffee comes from berries on the tree.)
 - d. If a coffee farmer saw green and red berries on the coffee tree, which ones should they pick? (The red berries.)
 - e. What's inside the berries? (Coffee seeds are inside the berries.)
 - f. How long does the coffee harvest last? (About six months, from December through May.)

- g. Is it better for coffee trees to grow under shade trees or in the open like corn? (Coffee plants should grow beneath shade trees, not only to help the coffee plants survive, but to create a place that birds will be protected and can feed. See <http://www.rainforest-alliance.org/programs/agriculture/certified-crops/coffee.html>)
- h. Are the beans are laid out on the ground to dry in the sun? (Yes.)
- i. Do other animals, like reptiles, depend on coffee too? (Yes, they do. The coffee plants provide habitat for birds, insects, mammals and reptiles.

In your note to the parents, tell them that their child expects them to share at least five things they learned from their child’s coffee label or storyboard that they didn’t know before about how coffee gets from Colombia to them.

Extensions

1. Chart the path of other fruits and vegetables grown in the United States and Colombia, such as potatoes, pineapples, oranges and corn.
2. Let your students smell and touch the ground coffee, and look at the pictures of the coffee plant and beans. Remind them to think about this coffee’s journey.
3. Using the list of rainforest products provided under the supplemental information, ask your students to determine if there are any other products that they use in the everyday lives that make the same type of journey.
4. Read *Rick and the Gang Find Out Why Some Coffee is Bad for Birds* to your students and begin a discussion on this topic. This story can be found under the Additional Resources found at the beginning of this series of lessons.

LESSON 4 ASSESSMENT RUBRIC: 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 works well with partner and focuses on task to reveal their current thinking about the process it takes for locally grown apples to get to their home.			
2. Student actively shares his/her ideas for how coffee gets from Colombia to his/her home.			
3. Student creatively and accurately illustrates the coffee process by creating a new coffee can label.			
4. Student is able to answer many of the questions about how coffee is produced and the process it goes through to get from Colombia to their home.			