



Classroom Guide for
CYCLE OF RICE,
CYCLE OF LIFE:
A Story of Sustainable Farming
written and photographed by
Jan Reynolds

Reading Level

*Reading Level: Grades 3-4

Interest Level: Grades 2-8

Guided Reading Level: S

*Reading level based on the Spache Readability Formula

Themes

World Cultures, Farming, Ecology, Sustainability, Environmental Protection and Activism, Customs and Traditions

Synopsis

Cycle of Rice, Cycle of Life: A Story of Sustainable Farming takes readers to the island of Bali in Southeast Asia. The people there live in tune with the natural rhythms and cycles of the water and the soil. Balinese farmers have planted rice using the intricate system of water sharing and crop rotation for more than one thousand years. Intertwined with their spiritual, social, and day-to-day lives, this system has made Bali a leading producer of rice—one of the world's most important crops.

In the 1960s, the government of Bali decided it wanted to produce larger quantities of rice more quickly than traditional methods would allow. So began the Green Revolution, which included using hybrid plants and chemical pesticides and fertilizers. The experiment proved disastrous.

Today, through the work of scientists and other dedicated people, the Balinese have returned to their traditional ways of rice farming, which serves as a remarkable example of sustainable agriculture in an increasingly industrialized world. *Cycle of Rice, Cycle of Life* helps students learn about the culture of Bali, sustainable farming, the changes that the people and land of Bali underwent during the Green Revolution, and the eventual restoration of a time-honored agricultural method.

Background

The focus of *Cycle of Rice, Cycle of Life* is on the importance of sustainable farming, although other topics related to the specifics of Balinese culture are also included. Be sure to introduce students to the concept of sustainable farming before reading the book to provide them with necessary background knowledge.

Jan Reynolds, the author and photographer of the book, felt that rice farming in Bali was an example of sustainable farming that students could grasp. One aspect of farming in Bali that caught her attention was the duck herds that provide both natural pesticides (they eat worms and bugs) and natural fertilizers (their manure helps enrich the soil). The ducks are a simple and striking example of the difference between organic farming and farming that makes use of chemical pesticides and fertilizers, which are often harmful and upsetting to the balance of nature.

A three-part video series with Jan Reynolds and Professor J. Stephen Lansing that discusses Balinese farming and culture can be found on the [Lee & Low website](#). You may wish to have students view the videos before reading the book. The videos also provide several teaching points for later discussion.

Teaching Tip

Cycle of Rice, Cycle of Life is an excellent choice to use as part of a unit on the environment. It is also useful as an introduction to science lessons related to plant growth and farming.

BEFORE READING**Prereading Focus Questions**

Before introducing this book to students, you may wish to develop background and promote anticipation with questions such as the following:

1. Do you like to eat rice? What is your favorite rice dish? Where in the world do you think rice is grown?
2. Have you ever been to a farm? What animals and/or crops did you see there? What did you learn about how crops were planted and grown?
3. Have you ever planted anything? What steps did you follow in planting and caring for your plant?
4. What do plants need in order to grow?
5. How do you think farmers get water for their plants in areas where there is not a lot of water nearby?

Exploring the Book

Write the title of the book on the chalkboard. Ask students what they think the title means. What do they think the book is about?

Have students look at the photographs on the front and back covers. Discuss what they notice in the images.

Read the synopsis at the beginning of this guide aloud. Then flip through the book and point out the features specific to a nonfiction book: photographs, foreword, quotes, diagrams and maps, and glossary/pronunciation guide.

Setting a Purpose for Reading

Have students read to:

- find out about Balinese farming
- learn about the cycle of rice and how it affects the cycle of life
- understand the difference between traditional organic farming methods and farming methods that utilize modern technologies

VOCABULARY

In this book, students are likely to come across many words and terms with which they are not familiar. These words and terms are usually defined in the main text, but remind students to use the Glossary/Pronunciation Guide on the last page of the book for pronunciation help and to remind themselves of meanings they may forget as they read through the book.

As they read, have each student compile a list of new or unfamiliar words and terms not listed in the Glossary/Pronunciation Guide. Then ask students to look up these words and terms in a dictionary or an encyclopedia and record their meanings. Have students work in pairs to create a sentence for each of the items on their lists to demonstrate understanding of the word or term and how it is used in the book.

AFTER READING**Discussion Questions**

After students have read the book, use these or similar questions to generate discussion, enhance comprehension, and develop understanding for the content. Encourage students to refer back to the text and photographs in the book to support their responses.

1. Where is Bali located? What bodies of water surround Bali?
2. Where does the freshwater that Balinese farmers need to grow rice come from? How does it get to the farmers' land?
3. What are the purposes of the rituals performed at the water temples? Why are these rituals important?
4. What kind of business takes place at the Masceti temples during the celebrations and gatherings before the planting season?

5. How is rice planted? Describe the steps.
6. Once the fields are planted and flooded, what are the responsibilities of Putu and Kadek?
7. When is rice ready to be harvested? How is it harvested?
8. What are the three steps for getting the rice kernels off the stalks and ready to be put into bags?
9. What happens in the rice fields after the harvest? What role do ducks play during this time?
10. What is the “cycle of rice” the author describes?
11. What was the Green Revolution in Bali?
12. What happened as a result of the Green Revolution?
13. How did J. Stephen Lansing help the Balinese farmers?
14. What are some lasting effects—both good and bad—of the Green Revolution?

Literature Circles

If you use literature circles during reading time, students might find the following suggestions helpful in focusing on the different roles of the group members.

- The **Questioner** might use questions similar to the ones in the Discussion Question section of this guide.
- The **Passage Locator** might look for phrases or terms about farming that were unfamiliar to the group so that the phrases and terms may be discussed to enhance understanding.
- The **Illustrator** might create a diagram or chart that illustrates the important stages in the cycle of rice farming in Bali.
- The **Connector** might find information about other traditional farming methods that are still used today.
- The **Summarizer** might provide a brief summary of each section of the book that the group reads.
- The **Investigator** might find more information about sustainable farming around the world.

*There are many resource books available with more information about organizing and implementing literature circles. Three such books you may wish to refer to are: *Getting Started with Literature Circles* by Katherine L. Schlick Noe and Nancy J. Johnson (Christopher-Gordon, 1999), *Literature Circles: Voice And Choice in Book Clubs and Reading Groups* by Harvey Daniels (Stenhouse, 2002), and *Literature Circles Resource Guide* by Bonnie Campbell Hill, Katherine L. Schlick Noe, and Nancy J. Johnson (Christopher-Gordon, 2000).

Reader's Response

Use the following questions or similar ones to help students practice active reading and personalize what they have read. Suggest that students respond in reader's journals, essays, or oral discussion.

1. What did you like about this book? Why?
2. How are Putu and Kadek different from you? How are they similar? What parts of their life would you enjoy? Why? What parts would you dislike? Why?
3. What are your thoughts about traditional farming versus more technological farming? Do you think both methods can be sustainable? How?
4. Are there any steps you or your family takes to be more environmentally friendly? Does this book make you want to be more conscious of the environment's needs? Why or why not?

Other Writing Activities

You may wish to have students participate in one or more of the following writing activities. Set aside time for students to share and discuss their work.

1. Choose a person in the book to interview. Create a list of questions to ask the person about his or her life and work.
2. Pretend you are a journalist and write a short breaking news story about the Green Revolution. Include quotes from people in the community featured in the book. You may invent these "quotes" by inferring people's thoughts and feelings based on information you read.
3. After doing some research about J. Stephen Lansing, write a short biography on him.

ELL Teaching Strategies

These strategies might be helpful to use with students who are English language learners or who are learning to speak English as a second language.

1. Before reading, work with students on the vocabulary in the book, including farming terms and terms describing Balinese culture and religion.
2. Have students write a caption for each photograph in the book. This can be done individually, with partners, or in small groups. Encourage students to read their captions to one another.

3. Read aloud a sentence from the book and have students read it aloud after you, pointing to each word as they speak. Make a recording of the trickier passages for students to listen to. Have them follow along in the book as they listen.
4. Assign ELL students to read the book aloud with strong English speakers/readers.

INTERDISCIPLINARY ACTIVITIES

Use some of the following activities to help students integrate their reading experiences with other curriculum areas.

Social Studies

1. The Balinese have very few first names. The first child is Wayan or Putu, the second child is Made or Kadek, the third is Nyoman or Komang, and the fourth is Ketut. The fifth, sixth, seventh, and eighth children will be another Wayan or Putu, Made or Kadek, Nyoman or Komang, and Ketut. Let students figure out their names in Balinese, create name tags, and use their Balinese names for a day. You may wish to have students also include their surnames to avoid confusion among those with the same Balinese first names.
2. *Cycle of Rice, Cycle of Life* discusses the geography, climate, and geology of the island of Bali. Introduce students to the other major climate and geologic regions (desert, mountains, tropics, and so on). Have students research the characteristics of the regions and then find countries or areas that have the attributes of each.
3. Have students work in research groups to find out more about world hunger. The [student section](#) of the United Nations World Food Programme website is a good place to start. The site also includes links to games and activities that help raise students' awareness of food and hunger around the world.

Language Arts

Have students visit the [Free Rice website](#) and play the vocabulary game while donating rice to countries in need through the United Nations World Food Programme.

Science

Have students work in small groups to study aspects of the environment that affect farming, for instance climate (amount of rain, seasonal temperatures, elevation, and so on), greenhouse effect, organic methods, and climate change. Students can work together to write a memo to their classmates and present their findings.

Science/Math

Create mini greenhouses in the classroom. Instructions for making a soda bottle greenhouse can be found at [education.com](#). Provide supervision when students are

using an X-acto knife or sharp scissors. Have students chart or graph the growth of their plants over time.

Music

Bring in some recordings of traditional Balinese music performed by a gamelan orchestra, or find a recording online for students to listen to. Discuss the sounds students' hear and have them speculate about the types of instruments used to produce the sounds. Interested students may research gamelan orchestras and share their findings with the class.

ABOUT THE AUTHOR/PHOTOGRAPHER

Jan Reynolds is an award-winning author and photographer whose work has appeared in numerous publications, including *National Geographic*, *The New York Times*, and *Outside* magazine. All seven books in her Vanishing Cultures series of photo-essays for children were recognized as Notable Social Studies Trade Books for Young People. Reynolds is also an avid skier, mountain climber, and adventurer. She holds the world record for women's high altitude skiing, was part of the first expedition to circumnavigate Mount Everest, and performed a solo crossing of the Himalaya. Reynolds lives with her husband and their two sons in Stowe, Vermont.

Book Information

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RESOURCES ON THE WEB

Learn more about *Cycle of Rice, Cycle of Life* at:

http://www.leeandlow.com/books/366/hc/cycle_of_rice_cycle_of_life_a_story_of_sustainable_farming

Order Information

On the Web:

<http://www.leeandlow.com/p/ordering.mhtml> (general order information)

http://www.leeandlow.com/books/366/hc/cycle_of_rice_cycle_of_life_a_story_of_sustainable_farming (secure on-line ordering)

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