

LESSON 2: FARMING IN HARMONY WITH NATURE

Lesson plan overview

In this lesson, students explore how food is grown through a comparison of traditional and conventional agricultural practices. They learn how shade-grown crops like cocoa and coffee support both people and forest ecosystems, while full-sun farming can cause harm when not done carefully. Students also discover how Indigenous communities use the solar calendar and natural clues to guide planting. Through video lessons, hands-on games, and creative activities, students develop an understanding of sustainable farming, environmental impact, and the importance of protecting rainforests and other tropical forests.

Educational materials

- **Videos:** ‘How We Grow Our Food: Learning from Indigenous Peoples’; ‘Shade-Grown Crops: Growing Food Under Trees’
- **Worksheet:** Farm it right!—A farming methods game
- **Quiz:** Short-answer questions on the benefits of shade farming and plant cycles
- **Math tie-in:** Create a planting calendar
- **Art tie-in:** Design a rainforest-friendly product label
- **Classroom discussion questions:**
 - Why do some farmers grow crops in the shade instead of cutting trees down?
 - How does the sun help farmers decide when to plant?

WORKSHEET: Farm It Right!



Cut-and-paste farming methods game

Name: _____ Date: _____

Use the cards below to learn how different farming practices work! Compare the traditional methods practiced by many Indigenous peoples with intensive agriculture.

Instructions:

1. Color and cut out each card.
2. Read it carefully.
3. Paste it onto the correct farm page: 'Traditional Indigenous Farming Practices Farm' OR 'Conventional Farming Practices.'

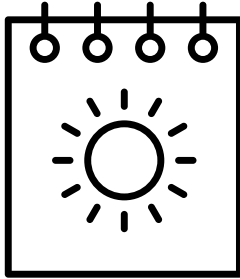
BONUS: At the end, design your own eco-friendly farm with crops and tools you think are best for people and the planet!

Traditional Indigenous Farming Practices

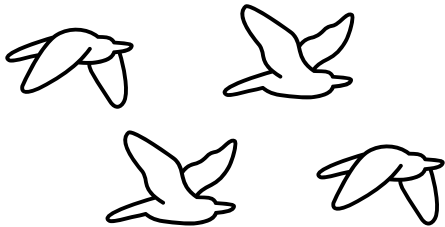
Conventional Farming Practices

Cut-Out Farm Cards

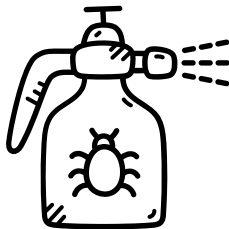
 Solar calendar for planting



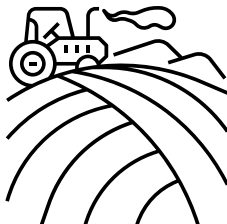
 Watching birds and weather to know when to plant



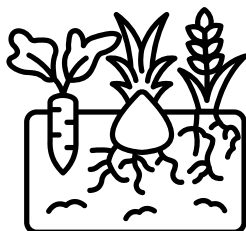
 Spraying pesticides to kill bugs



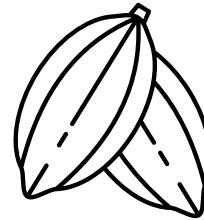
 Growing one crop over a big area (monoculture)



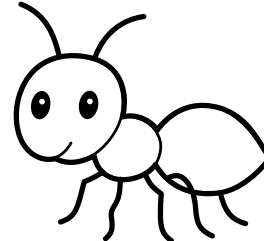
 Growing many types of crops together (polyculture)



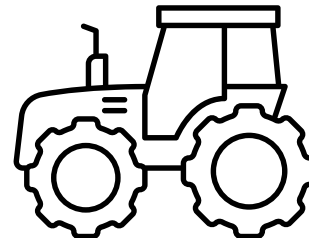
 Cocoa growing under trees (shade-grown)



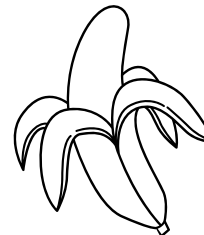
 Letting insects and birds help pollinate crops



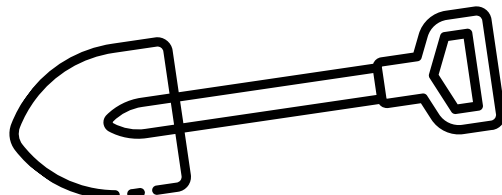
 Using a tractor to farm large fields



 Banana tree providing shade to other crops



 Farming with hand tools



“Rainforest Crop Relay”



Matching game for movement or group work

Objective: Match each crop to its growing method (shade-grown 🌳 vs. full-sun ☀️) using clues.

How it works:

This is a relay-style, station, or whiteboard game that can be played in pairs, small groups, or as a class.

Materials (printable or write on board):

- Crop cards (attached)
- Clues: Each clue gives a fun fact hinting at where the crop grows (attached)
- Two big posters/signs:
 - 🌳 “I like the shade!”
 - ☀️ “I need full sun!”

Activity instructions:

Read or display one clue at a time (you can also roll a dice to randomly select a clue)
(e.g., “I grow under tall trees and help birds stay safe.”)

Students discuss in teams: “Which crop is that?”

Then, one player from each team races to tape/place the correct crop card under the right poster.

Reveal the correct answer, give a quick explanation, and award a point!

Crop Cards—CUT ME OUT

Cocoa



Coffee



Tea



Banana



Crop Cards—CUT ME OUT

Pineapple



Orange



Vanilla



Mango



CLUES AND GAME ANSWERS (FOR TEACHERS)



“I grow best under the forest canopy and eventually become chocolate.”

→ ANSWER:  Cocoa

“People like to drink me in the morning! My beans grow under shady forest trees before they’re roasted.”

→ ANSWER:  Coffee

“I’m sipped warm or cold, and my leaves are picked from bushes that grow in cool, shady places.”

→ ANSWER:  Tea

“I grow in big bunches high in the trees. Animals like monkeys and birds love to eat me too!”

→ ANSWER:  Banana

“I’m juicy, sweet, and orange inside. I grow high up on rainforest trees and make great smoothies!”

→ ANSWER:  Mango

“I’m bright and round and squeezed into juice. I need lots of sunlight to grow sweet.”

→ ANSWER:  Orange

“I grow as a long vine, and you’ve probably tasted me in sweet treats and ice cream. I love shade!”

→ ANSWER:  Vanilla

“I wear a spiky crown and grow close to the rainforest floor. You might eat me on pizza or in juice!”

→ ANSWER:  Pineapple

QUIZ: Shade Farming and Plant Cycles



Name: _____ Date: _____

Instructions: Answer the questions below in complete sentences.

- 1. What is shade farming, and how is it different from full-sun farming?**

- 2. Name two crops that grow well in the shade?**

- 3. Why is shade farming better for animals and the environment?**

- 4. What is one way that traditional farmers know when it's time to plant their crops?**

QUIZ: Shade Farming and Plant Cycles



5. Why do some farmers grow different types of crops together (called polyculture)?

6. What happens if a piece of farmland is used too much without resting the soil?

7. Why is it important to protect trees when farming?

MATH TIE-IN

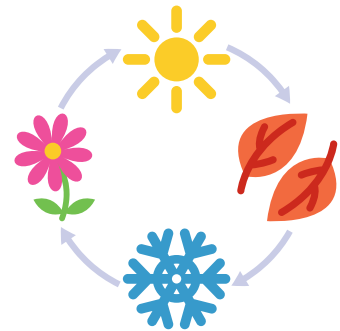


Create a Planting Calendar

Objective: Students will use basic math and observation skills to create a planting calendar and visualize monthly rainfall using pictographs.

1. Create a planting calendar (based on sun cycles):

- Students receive a blank monthly calendar (you can print the next page).
- Students mark 'sunny months' (e.g., dry season) and 'rainy months' (e.g., wet season).
- They draw when shade-grown crops like cocoa or coffee should be planted or harvested.



Optional: Use sun and raindrop stickers or stamps!

Helpful hints—shade-grown crop planting calendar



Watch the rain!

Look at the months with the most rainfall on the pictograph. Shade-grown crops like cocoa and coffee need moist soil—so those rainy months are good times for planting.



Sunshine matters, too!

Even though these plants grow under trees, they still need some sunlight. Try not to plant during the darkest months—look for a balance of rain and light.

Think about growth time

Some crops take several months to grow. If you plant during the rainy season, your harvest might be ready in the drier months—which is good because it makes drying and transporting the crops easier!

Crops need a break, too!

Farmers don't always plant the same crop in the same spot year-round. If the rainfall is too low or too high in one month, that might be a rest time for the soil.



MATH TIE-IN



Create a Planting Calendar

Objective: Students will use basic math and observation skills to create a planting calendar and visualize monthly rainfall using pictographs.

Peru's rainforest seasons—planting calendar hints

In the Amazon region of Peru, the year is split into two main seasons:

Wet season (November to April): This is when it rains a lot! The soil stays moist, and it's a good time to plant shade-loving crops like cocoa especially early in the rainy season.

Dry season (May to October): There is still some rain, but much less. This is often the time to harvest crops because it's easier to dry and store them without too much rain.



Hints for your worksheet:

Planting time?

Try planting your COCOA or COFFEE crops in the early rainy months, like November or December, so they can soak up the rain and grow strong.

Harvesting time?

Shade-grown crops often take several months to mature, so the drier season (May–July) might be perfect for picking and drying your crop!

Bonus challenge!

Think about how the sun and rain work together on a farm. Would it be a good idea to plant everything at once? Or spread out your planting times?



JANUARY**FEBRUARY****MARCH**

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APRIL**MAY****JUNE**

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JULY**AUGUST****SEPTEMBER**

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OCTOBER**NOVEMBER****DECEMBER**

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MATH TIE-IN



Counting Rainforest Resources

2. Create a rainfall pictograph:

- Students use pictographs (e.g., ) to represent rainfall each month.
- Provide example data or have students create fictional rainfall amounts.
- Discuss how rainfall affects farming and planting decisions.

Here is some sample rain data for Peru!

Month	Rainfall
January	Very Rainy    
February	Rainy   
March	Very Rainy    
April	Rainy   
May	Less Rain 
June	Dry
July	Dry
August	Dry
September	Dry
October	Less Rain 
November	Rainy   
December	Very Rainy    

ART TIE-IN



Design a Rainforest-Friendly Product Label

Objective: Students will apply creativity and sustainability knowledge to design an eco-friendly label for a cocoa or tea product.

Activity steps:

1. Choose a product: cocoa, tea, or coffee.
2. Design a label that includes:
 - A catchy name
 - An image of the plant (banana, cocoa pod, tea leaves, etc.)
 - A message about why it's rainforest-friendly (e.g., 'protects trees' or 'supports farmers')

Hints!

Use drawing tools, magazines for collage, or digital design if available.

Display finished labels around the classroom or turn them into a class booklet!

Inspiration

