

LESSON 2: TRADITIONAL VS MODERN FARMING

Lesson plan overview

In this lesson, students explore how traditional Indigenous farming practices compare to modern industrial agriculture. They'll learn the key concepts of agroforestry, monoculture, and regenerative agriculture—and examine how each system affects soil health, biodiversity, and water use. Through videos, activities, and discussion, students will evaluate which farming approaches are most sustainable and how cultural and environmental factors influence food production. By the end of the lesson, students will be able to analyze trade-offs between farming systems and propose strategies for growing food in harmony with nature.

Educational materials

- **Videos:** 'Agroforestry in Action'; 'Farming Impacts'
- **Worksheet:** Farming methods matching game
- **Quiz:** Compare and contrast (traditional vs. modern farming practices)
- **Math tie-in:** Biodiversity bar graph
- **Art tie-in:** Comic strip challenge
- **Classroom discussion questions:**
 - How can farmers protect nature while growing food?

GAME: Farming Method Match-Up



Name: _____ Date: _____

Goal: Match farming practices to their environmental impacts and decide which system is more sustainable.

Materials

- A worksheet with two columns (or use a whiteboard!): Column 1: Farming Practice; Column 2: Impact on the Environment
- Scissors (if you want to make it a cut-and-paste activity)
- Glue sticks or magnets (optional)

How it works

- Cut out the cards (below)
- Each student (or small group) gets a set of cards with farming practices on one set and environmental impacts on another set.

Match them up

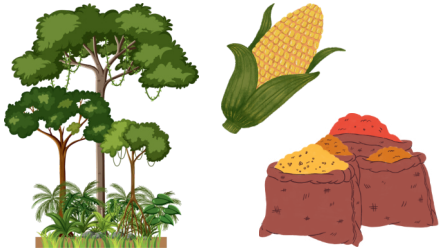
Students match each practice to the correct impact.

Choose your farm

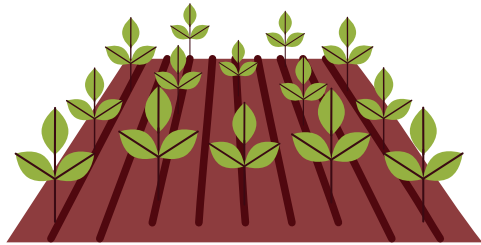
At the end, they decide: If you were a farmer, which practices would you choose and why? They circle the ones they'd include on their farm.

Farming Practices Cards—CUT OUT

**Planting trees with crops
(agroforestry)**



**Growing one type of crop over
a large area (monoculture)**



**Using natural pest
control methods**



Using lots of chemical fertilizers



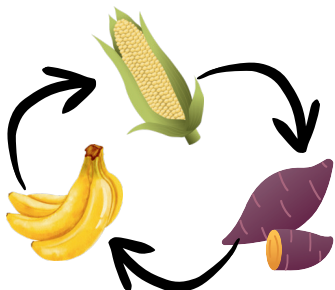
**Keeping a section of land
wild for wildlife**



Removing all trees before planting



Rotating crops each season



Using cover crops to protect soil

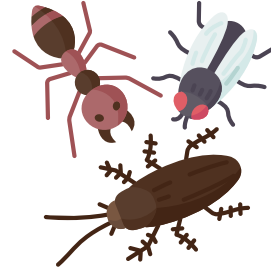


Impact Cards—CUT OUT

**Increases biodiversity and shade,
helping soil and animals**



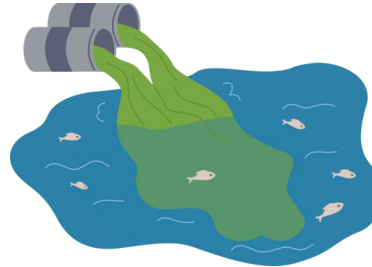
**Can lead to pests spreading
faster and soil wearing out**



**Protects pollinators and avoids
chemical pollution**



**Can pollute water
and harm animals**



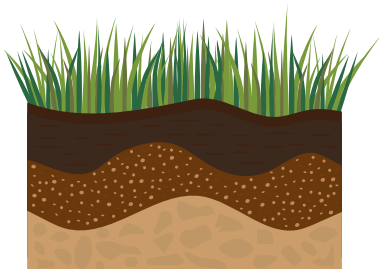
**Provides habitat and
food for wildlife**



**Reduces habitat for animals
and increases erosion**



**Keeps soil nutrients balanced and
prevents pests from building up**



**Prevents soil from washing
away and keeps it healthy**



QUIZ: Compare and Contrast: Traditional vs. Industrial Farming Practices



Name: _____ Date: _____

Part 1: Matching—farming terms

Match the term to its correct definition by writing the letter of the definition next to the term.

Terms:

Agroforestry _____

Monoculture _____

Regenerative agriculture _____

Definitions:

a) Farming practices designed to restore soil, conserve water, increase biodiversity, and improve overall ecosystem health.

b) The practice of growing only one type of crop in a large area year after year.

c) A farming method that combines trees, crops, and/or animals in the same area to create a diverse and sustainable system.



QUIZ: Compare and Contrast:

Traditional vs. Industrial Farming Practices



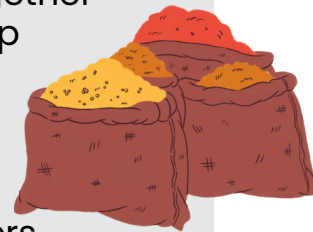
Part 2: Compare and contrast (word bank)

Below is a word bank. Fill in the blanks in the chart by choosing the best answer from the list. Some words/phrases may be used more than once.



Word bank:

Uses large machines
Uses traditional tools
Grows many types of crops together
Grows only one type of crop
Uses more water
Conserves water
Encourages biodiversity
Reduces biodiversity
Often uses chemical fertilizers
Uses natural compost and soil



Feature	Traditional	Industrial
Impact on soil	_____	_____
Impact on biodiversity	_____	_____
Impact on water use	_____	_____
Types of crops grown	_____	_____
Technology used	_____	_____

QUIZ: Compare and Contrast: Traditional vs. Industrial Farming Practices



Part 3: Critical thinking

Why might monoculture be more harmful to biodiversity than agroforestry?

What are two ways farmers can protect nature while still growing food?

Which farming method do you think is most sustainable? Why?



TEACHER ANSWER KEY



Part 1: Matching

c
b
a

Part 2: Word bank

Feature	Traditional farming	Industrial farming
Impact on soil	Uses natural compost and soil enrichment	Often uses chemical fertilizers
Impact on biodiversity	Encourages biodiversity	Reduces biodiversity
Impact on water use	Conserves water	Uses more water
Types of crops grown	Grows many types of crops together	Grows only one type of crop
Technology used	Uses traditional tools	Uses large machines

Part 3: Critical thinking

Why might monoculture be more harmful to biodiversity than agroforestry?

SAMPLE Answer: Monoculture grows only one type of crop, so it removes the variety of plants and habitats that many animals need to survive. This reduces biodiversity, while agroforestry supports many species by keeping trees and different plants in the same area.

What are two ways farmers can protect nature while still growing food?

SAMPLE Answer:

Planting trees and crops together (agroforestry)

Using fewer chemical fertilizers and pesticides

Other acceptable answers: rotating crops, using compost, protecting native plants, conserving water

Which farming methods are the most sustainable? Why?

SAMPLE Answer: Agroforestry, because it maintains biodiversity, keeps soil healthy, uses less water, and provides homes for wildlife while still producing food.

MATH TIE-IN



Biodiversity Bar Graph: Agroforestry vs. Monoculture

Instructions:

Below is a table showing the average number of species (plants, birds, and insects) found in two types of farms—an agroforestry farm and monoculture.

Use the data to create a bar graph comparing biodiversity between agroforestry and monoculture farms.

Answer the questions below using your graph.



Data Table:

Species Type	Agroforestry	Monoculture
Plant species	45	10
Bird species	22	5
Insect species	150	40



Questions:

Which farm type supports more species overall?

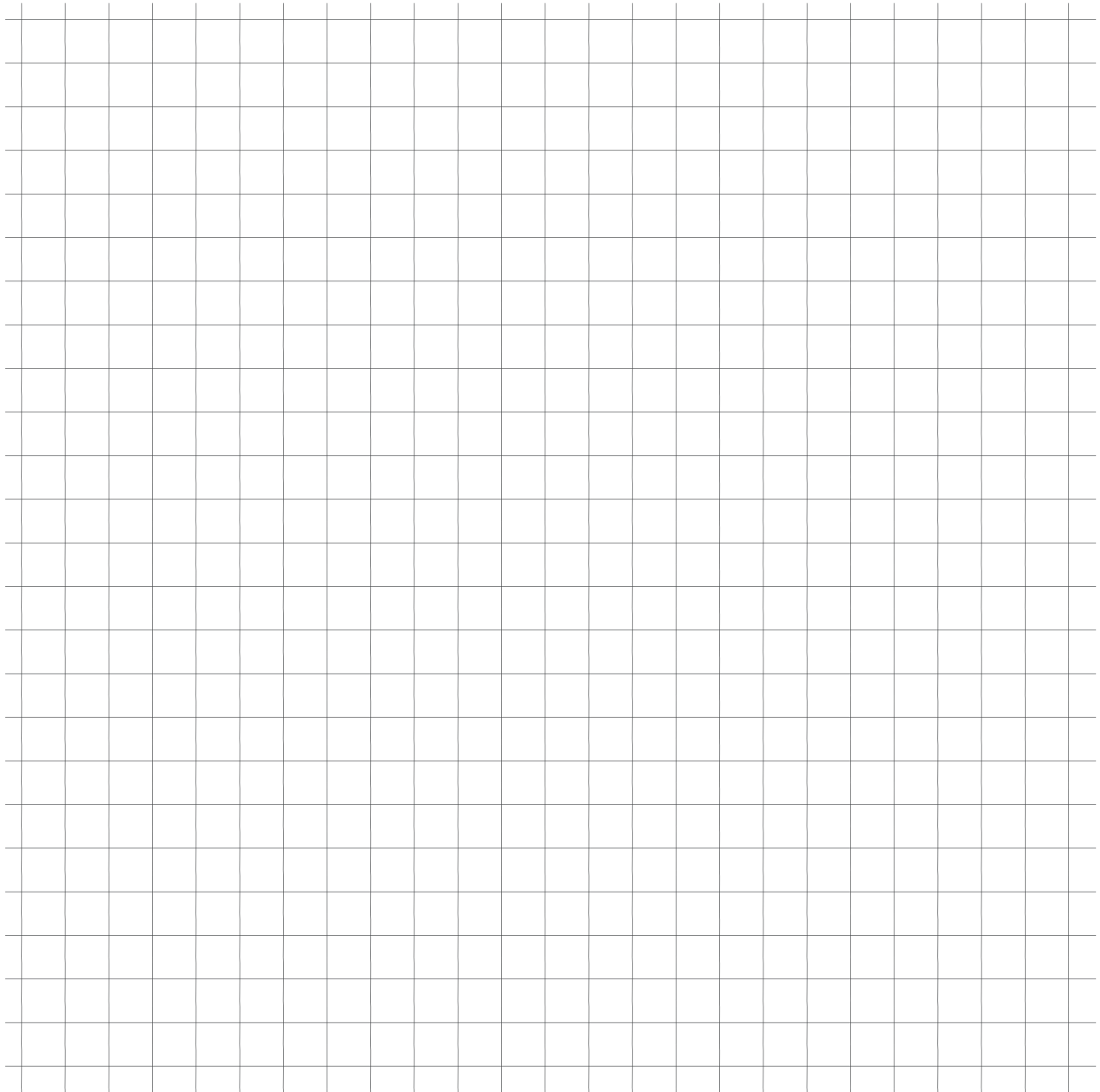
How many more plant species are found in agroforestry farms compared to monoculture farms?

Which species type has the biggest difference between the two farming methods?

If a farmer switches from monoculture to agroforestry, how many additional species could be supported (total)?

MATH TIE-IN

Biodiversity Bar Graph



ART TIE-IN



Farming for the Future—Comic Strip Challenge



Instructions:

Create a 4–6 panel comic strip that tells the story of a farmer transitioning from monoculture to agroforestry.

Your comic should include:

- Before: How the land and wildlife look during monoculture farming (few species, soil erosion, fewer trees).
- During transition: Farmer planting shade trees, adding crop variety, using natural pest control.
- After: Increased biodiversity, healthy soil, and improved farmer incomes.
- At least 3 key vocabulary words from the lesson (examples: biodiversity, monoculture, agroforestry, natural pest control).
- A short caption or speech bubble in each panel explaining what is happening.

Optional extension: Display the comics around the classroom as part of a “Future-Friendly Farms” gallery walk.

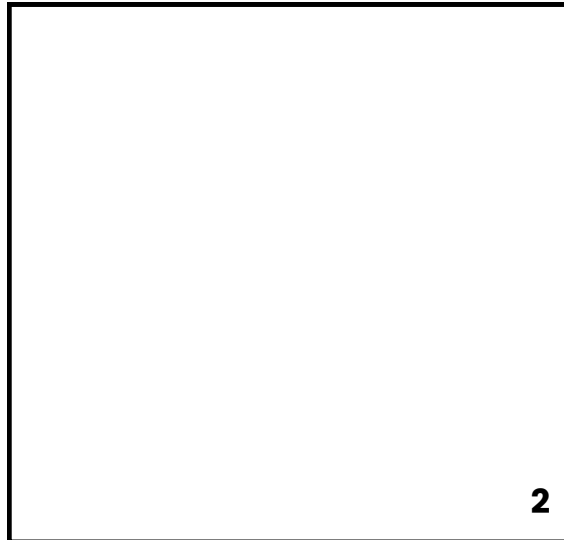


Comic Strip

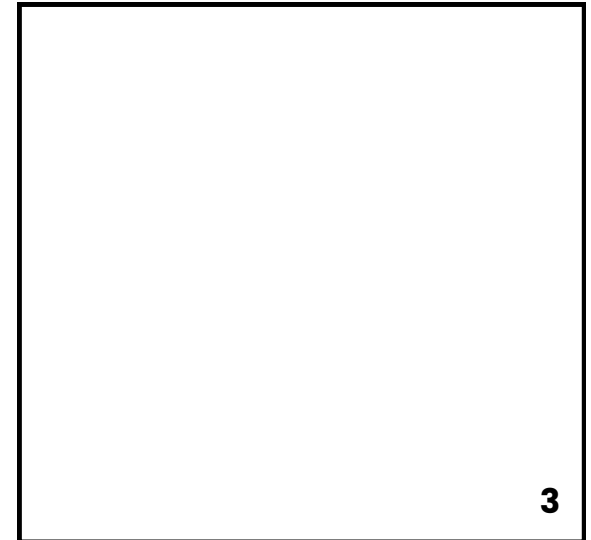
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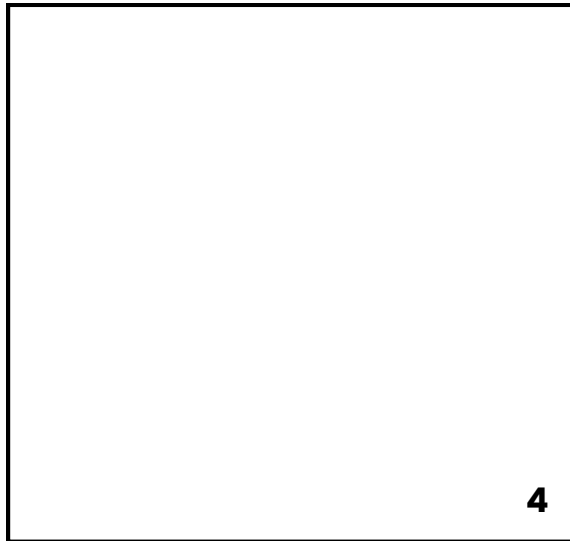
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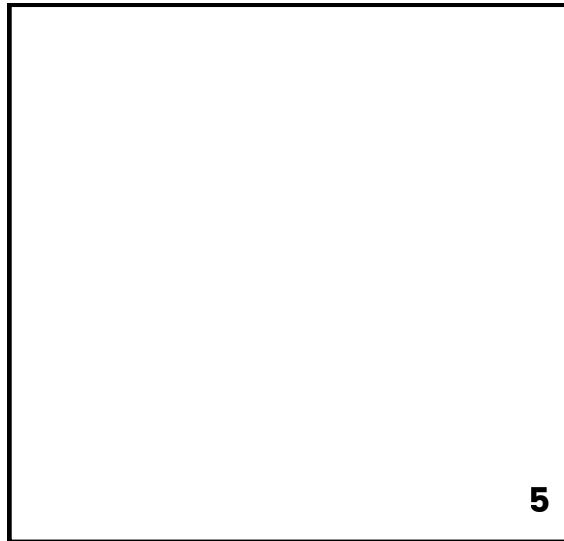
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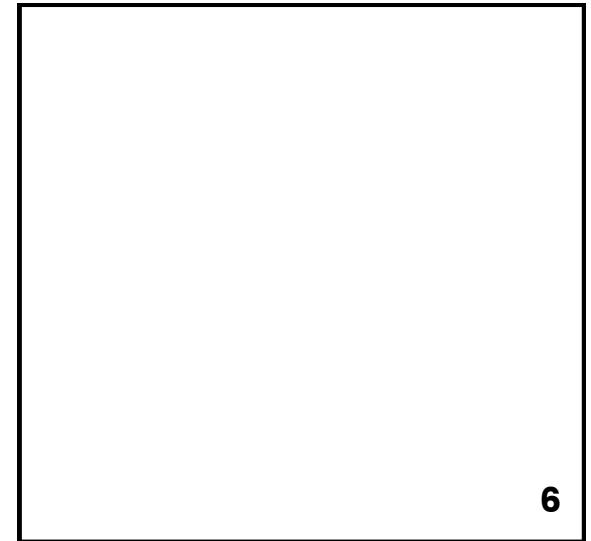
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