LESSON 6

Regenerative Farm Challenge

Healthy farms grow from healthy systems.

GRADE	TIME	FINAL PRODUCT
Grades 6–8	Two class periods, 55–60 min each	Team-built farm action plan

BIG IDEA

Regenerative farming works because it weaves soil, water, biodiversity, climate, food, and community into one interdependent system. Communities benefit when farmers see those connections.

ESSENTIAL QUESTION

Why does the way we farm matter to our community, our health, and the planet?

ACTIVITY OVERVIEW

Farm like a system.

Across two class periods, students step into the roles of farmers, scientists, community advocates, and policy thinkers as they collaboratively address real challenges facing a regenerative farm (an approach that overlaps with organic farming).

Day 1 opens with the Nourish short film *From the Soil* and builds shared vocabulary, then students sketch the connections of a healthy farm system, view the Regenerative Farm exhibit, and receive their roles. They visit three to five Research Stations to build their expertise and complete a Role Description.

Day 2 brings teams together for four rounds of cooperative role-play: Soil and Water Foundations, Biodiversity Builders, Food and Community, and Climate and the Future. Each round, teams advocate for a farm action that fits their roles, then post their consensus action at the Class Board. The lesson closes with a gallery walk across all four rounds and a whole-class reflection on what makes a farm — and a community — resilient.

STANDARDS ALIGNMENT

Four subjects, one lesson.

SCIENCE (NGSS)

What students do

Develop and use a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem, applied to a regenerative farming system. Evaluate competing design solutions for maintaining biodiversity and ecosystem services, applied to a farming community's choices. Apply scientific principles to design methods for monitoring and minimizing human impacts on the environment, including soil health, water use, and biodiversity in agriculture.

Three-dimensional emphasis. SEPs: Developing and Using Models; Engaging in Argument from Evidence; Constructing Explanations and Designing Solutions. CCCs: Systems and System Models; Cause and Effect; Stability and Change.

MS-LS2-3 MS-LS2-5 MS-ESS3-3

ELA (CCSS)

What students do

Integrate information from texts, images, and diagrams to build understanding of a complex system. Engage effectively in collaborative discussions, building on others' ideas and expressing ideas clearly. Write informative explanations supported by evidence and clear reasoning (Role Description + extension persuasive piece).

RST.6-8.7 SL.6.1/7.1/8.1 WHST.6-8.2

SOCIAL STUDIES (C3)

What students do

Explain how economic decisions in agriculture and food production affect the well-being of farmers, businesses, and communities. Apply civic principles by deliberating in a multi-role group to address farming and community challenges.

D2.Eco.1.6-8 D2.Civ.7.6-8

HEALTH (NHES)

What students do

Explain how soil health, biodiversity, and farming practices connect to human and environmental health. Analyze how community, economic, and cultural factors influence those practices.

NHES 1 NHES 2

BACKGROUND FOR TEACHERS

What to know before you teach.

Regenerative agriculture aims to restore soil, water, biodiversity, and community, not just maintain them. Its guiding question: "Is the farm healthier this year than last year, in every dimension?"

Because a farm is a system, this is a systems lesson. The four rounds are designed to surface the interdependence of soil, water, biodiversity, food access, climate, labor, and community storytelling. No single role can solve a round on its own; each round requires several roles to weigh in. Encourage students to make connections across rounds: a decision made in Round 1 (e.g., cover crops) may directly support a Round 4 challenge (climate resilience).

THE NINE RESEARCH STATIONS, VISITED IN ROTATION ON DAY 1



WHAT IS REGENERATIVE FARMING?



SOIL SCIENTISTS



COMPOST



POLLINATORS AND BIODIVERSITY



COVER CROPS AND ROTATION



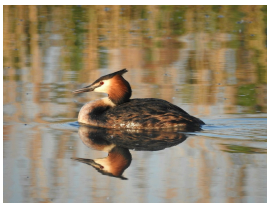
CIRCULAR FARMING



CLIMATE AND THE FUTURE



PIE RANCH



WATER STEWARDS

VOCABULARY

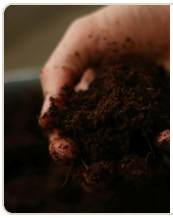
Two sets, one timing rule.

Introduce the first set on Day 1 before the brainstorm. Let the rest emerge through the Research Stations.

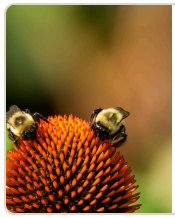
SET A, NEED TO KNOW FIRST (DAY 1)



regenerative farming
A way of farming that restores soil, water, and biodiversity, leaving the land healthier than before.



soil health
How well soil works as a living system that supports plants, animals, and people.



ecosystem services
The benefits healthy ecosystems provide to people, such as clean water, pollination, and fertile soil.



biodiversity
The variety of living things in an area, from plants and animals to the life in the soil.

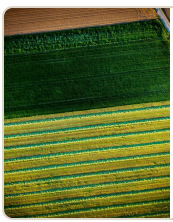


cover crops
Plants grown to protect and feed the soil between food crops, instead of leaving the soil bare.

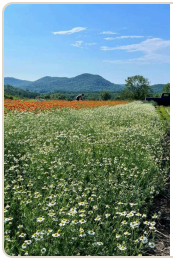
SET B, ENCOUNTER AS YOU VISIT STATIONS (DAY 1)



compost
Food scraps and yard waste broken down into nutrient-rich soil.



crop rotation
Changing which crop is grown in a field each season to support soil health.



carbon storage

The process of trapping carbon in soil or plants to reduce greenhouse gases in the atmosphere.



pollinators

Animals like bees, butterflies, and birds that move pollen between flowers, allowing many crops to grow.

MATERIALS & PREPARATION

What you'll print and cue up.

MATERIALS

- ☐ **Nourish short film**: *From the Soil* (Michael Pollan, ~1 min): Pollan describes the nutrient cycle that begins and ends with soil.
- ☐ **Kiss the Ground mini-documentaries**: assigned as pre-work for Part 1.
- ☐ **Visual glossary slides**: one per term.
- ☐ Regenerative Farm exhibit (web): the interactive farm model for the Day 1 Step 4 reveal. On the Nourish site under Explore → Exhibits.
- ☐ **Regenerative Farm Challenge student pages**: Part 1: Video Summary; Part 2: Role Description; printable PDF, 1 per student.
- ☐ **Role Description Half Sheets**: 12 unique roles, print and cut, 1 per student; some roles may repeat across the class depending on enrollment.
- ☐ **Research Station Data Cards**: 9 stations, 1 set per class; post around the room or distribute by table group.
- ☐ **Regenerative Farm Challenges slides**: Google Slides, 1 challenge slide per round × 4 rounds. The sentence stem ("As the [role], I notice ___. I recommend we ___ because ___.") appears on each challenge slide so teams can see it while they deliberate.
- ☐ Class Board or chart paper for posting team actions across 4 rounds. Pre-divide into 4 columns: Round 1 (Soil and Water), Round 2 (Biodiversity), Round 3 (Food and Community), and Round 4 (Climate).
- ☐ **Post-it notes**: small pads, enough for at least 1 per team per round = 4 per team minimum.

PREPARATION

- ☐ Assign Part 1 (Video Summary) as pre-work the day before: students watch one Kiss the Ground mini-documentary and answer the four questions.
- ☐ Cue up the Nourish short film *From the Soil* for Day 1, Step 1.
- ☐ Cue up vocabulary slides and open the Regenerative Farm exhibit for Day 1, Steps 2 and 4.
- ☐ Print and cut the 12 Role Description Half Sheets. Note framing for each role: Farmer, Compost Maker, Pollinator Keeper are concrete; Climate Scientist, Community Advocate, Student Reporter are more abstract. Pair accordingly during assignment.
- ☐ Print or post the 9 Research Station Data Cards around the room (or place one set per table group).
- ☐ Set up the Class Board with 4 labeled columns. Locate Post-it notes.
- ☐ Write the sentence stem on the board before Day 2. It also appears on all four challenge slides.

DAY 1

Build the system, pick your role.

55 minutes

BEFORE DAY 1

Assign Part 1 (Video Summary) of the student pages the day before: each student watches one Kiss the Ground mini-documentary and answers the four questions.

1 Watch: *From the Soil*

6 MIN

TEACHER

- Pre-frame: introduce the film. Ask students to listen for one thing that surprises them about soil.
- Play *From the Soil* (~1 min). Captions on.
- Pair share: partners share one soil surprise and any family connection to soil, gardening, or farming.
- Bridge: today and tomorrow, students will see how a healthy farm weaves soil, water, biodiversity, food, and community into one system, and each takes a role.

STUDENTS

Watch *From the Soil* and listen for one thing that surprises you about soil.

Share with a partner what surprised you and any family connection to soil or growing.

2 Vocabulary + Set A

6 MIN

TEACHER

- Project the vocabulary slides. Walk through Set A (five terms) at a brisk pace: image first, then term, then definition.
- Pause briefly on **"ecosystem services"**: give one concrete example, such as pollination.
- Tell students Set B will appear as they visit Research Stations.

STUDENTS

Read along with vocabulary; ask clarifying questions.

Try to name one example from your own life for one term.

3 What does a farm need to thrive?

10 MIN

TEACHER

- Whole-class brainstorm: ask what a healthy farm needs to thrive. Capture words on the board: soil, water, sun, seeds, animals, workers, customers, climate, knowledge, money, time.
- Sketch: students sketch the connections they imagine between soil, water, animals, plants, and people on a thriving farm.
- Lift up a few sketches: a quick visual scan, sharing 1–2 sketches under a document camera. Notice the arrows, the cycles, the feedback.

STUDENTS

Brainstorm aloud: what does a healthy farm need to thrive?

Spend 3 silent minutes sketching the connections you imagine: between soil, water, animals, plants, and people.

Share one sketch with the class if invited.

4 Reveal the Regenerative Farm System

6 MIN

TEACHER

- Reveal the Regenerative Farm exhibit: project it, click through the practice zones, and use the whole-system view to walk the connections in the model.
- Invite comparison: what did the sketches share with this model? What's different? What's missing in either?
- Highlight that the model itself is a hypothesis: a way of seeing the farm as one interconnected system rather than a list of separate parts.

STUDENTS

Compare the exhibit's farm model to your sketch.

Share one connection that's the same and one that's different.

5 Role Assignment

6 MIN

TEACHER

- Distribute the 12 Role Description Half Sheets. Use a mix of strategies: voluntary (students self-select a role tied to their interests or family connection), assigned (you assign for balance), or partial swap (each student may swap once with another student for a role that better fits their lived experience).
- If 12 roles don't fit your class size, allow duplication: two students can share Pollinator Keeper, for example.
- Ensure each team of 4–6 students includes a mix of role categories: at least one Soil System, one Water System, one Biodiversity, one Community.

STUDENTS

Receive your role. Read the half sheet.

If you'd like to swap for a role with a stronger personal or family connection, ask once before the class moves on.

Notice which roles your teammates have.

6 Role Research at Stations

15 MIN

TEACHER

- Distribute the Regenerative Farm Challenge student pages (Part 2: Role Description).
- Direct students to visit at least 3 (ideally 4–5) Research Stations relevant to their role; the role half sheet names which stations are most relevant.
- Set a visible timer at 12 min for station visits + 3 min to begin Part 2.
- Circulate. Coach students to read the station card, then write specifically (not generically). For example, what does the Compost Maker do, and what does the Soil Scientist notice that the Compost Maker doesn't?

STUDENTS

Visit at least 3 Research Stations relevant to your role.

Bold words are vocabulary you should know.

Read your card twice. Take notes on Part 2 of your student page.

7 Preview Day 2

4 MIN

TEACHER

- Show the Class Board with 4 labeled columns: Soil and Water, Biodiversity, Food and Community, Climate.
- Preview the structure: tomorrow, teams will face 4 farm challenges (one per round). Each round, teams hear the challenge, discuss using their roles, and post one team action on the Class Board.
- Direct students to finish Part 2 (Role Description) as homework if not complete.
- *Optional:* ask one student to read their role aloud and predict which rounds their role will matter most.

STUDENTS

Look at the Class Board structure: 4 rounds × 1 action per round = 4 team actions total.

Finish your Part 2 Role Description as homework if needed.

Predict which rounds your role will matter most.

DAY 2

The Challenge Rounds

55–60 minutes

1 Review and Setup — 5 MIN

TEACHER

- Re-orient. Briefly review the four rounds on the Class Board: Soil System, Water System, Biodiversity, Community.
- Form teams of 4–6 students with a mix of role categories.
- Point to the sentence stem on the board and read it aloud: **"As the [role], I notice ___. I recommend we ___ because ___."** Model it once yourself so students hear the frame before Round 1.
- Display the Round 1 Challenge Slide. The stem stays visible on every challenge slide.

STUDENTS

Find your team. Confirm you have a mix of role categories.

Re-read your Role Description card.

Read the sentence stem on the board. You'll use it every round.

2 Round 1: Soil and Water Foundations — 12 MIN

TEACHER

- Read Round 1's Challenge Slide aloud. (E.g., **"Drought on the Farm," "Soil Erosion," "Too Much Waste,"** or **"Water Pollution Threat."**)
- Set a visible timer: 60 sec silent journal + 7 min team deliberation + 2 min consensus + 2 min team posts action at Class Board.
- Use the sentence stem shown on the challenge slide: roles take turns, each using the stem to make their case.
- Circulate. Coach for evidence and listening: ask what research supports a recommendation, and whose role hasn't been heard.

STUDENTS

Silent journal: What do I, in my role, advocate for? Why?

Team deliberation: each role uses the sentence stem. Listen as well as speak.

Consensus: your team agrees on ONE team action.

Post: write your team's action on a Post-it. Include role(s) consulted + action. Place at Class Board under Round 1.

3 Round 2: Biodiversity Builders — 12 MIN

TEACHER

- Read Round 2's Challenge Slide. (E.g., **"Pest Outbreak," "Pollinators in Trouble,"** or **"Loss of Biodiversity."**)
- Same structure as Round 1.
- Pollinator Keeper and Seed Saver will likely lead, but support roles (Organic Farmer, Soil Scientist) should weigh in.

STUDENTS

Silent journal: what does YOUR role notice that the Biodiversity roles might miss?

Team deliberation + consensus + post.

4 Round 3: Food and Community

12 MIN

TEACHER

- Read Round 3's Challenge Slide. (E.g., **"The Community Needs Healthy Food," "Market Prices Drop,"** or **"Labor Shortages."**)
- Community System roles (Farm-to-School Chef, Market Organizer, Farmworker, Student Reporter) usually lead this round.
- Watch for teams that drift into solely market-based solutions. Push for community-based options too (school gardens, food banks, cooperatives, local sourcing).

STUDENTS

Silent journal: what does the community need most right now?

Team deliberation + consensus + post.

5 Round 4: Climate and the Future

12 MIN

TEACHER

- Read Round 4's Challenge Slide. (E.g., **"Climate Change Impacts," "Labor Shortages,"** or **"Lack of Public Awareness."**)
- Climate Scientist and Water Steward lead, often paired with Student Reporter to bring the story to the community.
- Encourage teams to look back across rounds: did anything from Rounds 1–3 already support Round 4? (E.g., the cover crops you used in Round 1 likely help climate resilience now.)

STUDENTS

Silent journal: what action would matter most in 20 years?

Team deliberation + consensus + post.

Notice: did your team's earlier choices set up this round?

6 Gallery walk + closing reflection

7 MIN

TEACHER

- Direct teams to walk past all four columns of the Class Board.
- Optional sticky-note feedback: each student leaves one **"+ "** (a strong action) on someone else's Post-it.
- Whole-class reflection. Ask one or two of:
  - What patterns did you see across the rounds?
  - Did any roles surprise you with what they noticed?
  - What does a regenerative farm need most, in your view?
  - How does a community make these decisions in real life?
- Close: communities make these choices every day; knowing the system helps students advocate for a farm — and a future — that works for everyone.

STUDENTS

Walk past all four columns of the Class Board. Read at least one team action per round.

Leave one "+" sticky on a team action you support.

Share one pattern or surprise from the rounds.

ASSESSMENT

What understanding looks like.

Students demonstrate understanding by:

- Using vocabulary (regenerative farming, soil health, ecosystem services, biodiversity, cover crops) accurately in discussion and the Role Description.
- Completing Part 1 (Video Summary) and Part 2 (Role Description) of the student pages.
- Speaking from their role's perspective during the role-play (using the sentence stem), and listening when other roles speak.
- Contributing to a team consensus action in each of the four rounds.
- Making at least one cross-round connection in the closing reflection (e.g., "What we did in Round 1 helped us in Round 4 because…").

Look-fors: the silent journal between rounds registers individual thinking and gives quieter voices a place. Use journals + Class Board posts + Part 2 student page together for a full picture.

DIFFERENTIATION & SCAFFOLDING

Build access in.

FOR MULTILINGUAL LEARNERS

- The sentence stem is especially helpful: pre-teach it before Day 2. If some students would benefit from a copy in hand, write the stem on an index card for them.
- Pair multilingual learners with classmates who share their home language when possible.
- Allow Part 2 Role Description to be drafted in a home language and translated for the team.

FOR STUDENTS WITH READING IEPS

- Provide audio versions of the Research Station Data Cards (text-to-speech).
- Pair students with a strong reader at one or two stations.
- Pre-mark each Role Description Half Sheet by difficulty (concrete vs. abstract); assign concrete roles where helpful.

FOR STUDENTS WHO FINISH EARLY

- Add a 5th **"wild card"** round: ask the team to invent its own challenge using all four categories.
- Sketch a systems diagram of the team's four actions, showing the connections.
- Begin the Write to a Local Farmer extension.

CONTEXT NOTES

Pre-work realism. Some students may not complete Part 1 at home. The Day 1 Step 1 screening of *From the Soil* works as a fallback; capture key answers to the four Part 1 questions on the board so all students leave Day 1 with Part 1 completed.

Role-play culture. The role-play depends on students taking their roles seriously. If you teach a class where role-play is new, model it briefly at the start of Round 1: play the Compost Maker yourself for 30 seconds using the sentence stem.

Rural and urban contexts. In rural districts, students may have family members in conventional agriculture; treat conventional farming as a real choice under real constraints. In urban districts, lean into Pie Ranch (Station 8) and other examples that include school gardens, community gardens, and urban agriculture as legitimate regenerative paths.

EXTENSIONS

Five ways to go further.

EXTENSION 01

Write to a Local Farmer

Students write a short letter to a farmer in their region: they introduce themselves, share one thing they learned about how farms work as systems, and ask what challenges the farmer is facing on their land. If the class mails the letters, any replies become a powerful follow-up discussion.

EXTENSION 02

Community Voices Panel

Invite 2–3 local farmers, gardeners, food-system advocates, or land-use planners to a class panel. Students prepare 3 questions in advance from their role's perspective and record the responses. After the panel, students compare what they heard to the Regenerative Farm exhibit.

EXTENSION 03

Mini-Documentary Showcase

Students choose a Kiss the Ground mini-documentary (or a related Nourish short film) they didn't watch for Part 1, then create a 60-second video summary (phone-recorded) for the class. The summary includes: farm name, place, one practice, one impact, one question.

EXTENSION 04

Farm Visit or Virtual Tour

Arrange a class visit to a nearby regenerative or organic farm, or schedule a virtual farm tour via video call. Before the visit, each student prepares one question from their role's perspective. After, students update their Role Description with what they observed.

EXTENSION 05

Class Action Plan

Bring the role-play out of the simulation. Students choose one of the four Class Board actions and translate it into a real action the class could take this semester: supporting a local farm, starting a school garden, hosting a Farm to School lunch, writing a letter to a local representative. Build a one-page Class Action Plan with steps, roles, and a timeline.