



Lesson Plan

4 Things to Consider for a Regenerative Agriculture SAE

Created: 03/2022 by the National FFA Organization

Description of Lesson: Regenerative agriculture – What is it? What does it mean? In this lesson, students will learn what regenerative agriculture means and tips for considering it in their SAE. Additionally, students will learn how one company is involved in regenerative agriculture.

Student Learning Objectives:

After completing these activities, students will ...

1. Describe regenerative agriculture.
2. Research regenerative agriculture.
3. Explore components of a career as a soil scientist.

Suggested Grade Level:

Grades 9 and 10 (This lesson is written so instructors can scale up or down based on class needs.)

Suggested Time: 45 minutes (*Time requirements may vary based upon student understanding and class schedule.)

Resources/References:

1. Article: “4 Regenerative Agriculture Practices to Use for Your SAE,” <https://www.ffa.org/the-feed/4-things-to-consider-for-a-regenerative-agriculture-sae/>
2. Video: *Regenerative Agriculture, Because Sustainability is No Longer Enough*, <https://vimeo.com/506246369>
3. Website: Regenerative Agriculture, <https://www.cbf.org/issues/agriculture/regenerative-agriculture.html>
4. AgExplorer, <https://agexplorer.ffa.org/>

Related Resources:

1. Article: “FFA Sponsors Promote Regenerative Ag in Blue Room,” [FFA.org/93rd-national-ffa-convention-expo/ffa-sponsors-promote-regenerative-ag-in-blue-room/](https://www.ffa.org/93rd-national-ffa-convention-expo/ffa-sponsors-promote-regenerative-ag-in-blue-room/)
2. Video: *New Markets, Richer Soil: Cargill Supports Farmers Through Regenerative Agriculture | FFA Blue Room 2021*, <https://vimeo.com/656655022>
3. Video: *Working with Farmers to Advance Regenerative Agriculture Practices | FFA Blue Room 2020*, <https://vimeo.com/506245748>

Equipment and Supplies Needed:

1. A copy of the “4 Things to Consider for a Regenerative Agriculture SAE” worksheet for each student
2. Internet access to play the video in real time or embed it in a PowerPoint ahead of time

Vocabulary:

1. Regenerative
2. Incorporate
3. Resiliency

Cross-Curricular Connections:

English/Language Arts

- Describe regenerative agriculture.
- Research regenerative agriculture.
- Explore components of a career as a soil scientist.

Virtual Instruction Ideas:

This lesson can be loaded into a learning management system (LMS) and completed virtually. Students can then use a discussion board through the LMS to discuss the lesson content.

Student Activity Sheets:

Direct access to student activity sheets without lesson plan or answer key for easy upload to a learning management system or printing for classwork.

<https://ffa.box.com/s/3gtte0x4zuzupqffpcqxxswelp8ld6ec> (Word)

<https://ffa.box.com/s/3gtte0x4zuzupqffpcqxxswelp8ld6ec> (Non-Designed)

<https://ffa.box.com/s/0l7l1chj3lckkiypk6sm7oi9ikrya8b5> (PDF)

https://docs.google.com/document/d/1ZJNmYzVAM_KZyxZ2z5Pxx4vhoOfyGWnzTIVxBJMIUdA/copy (Google)

These Activities are Aligned to the Following Standards:

AFNR Performance Element

- CS.05. Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources career pathways.

FFA Precept

- FFA.PL-A.Action: Assume responsibility and take the necessary steps to achieve the desired results, no matter what the goal or task at hand.
- FFA.PL-C.Vision: Visualize the future and how to get there.
- FFA.PL-E.Awareness: Understand personal vision, mission and goals.
- FFA.PL-F.Continuous Improvement: Accept responsibility for learning and personal growth.
- FFA.CS-M.Communication: Effectively interact with others in personal and professional settings.
- FFA.CS-N.Decision Making: Analyze a situation and execute an appropriate course of action.

Common Career Technical Core

- AG5 Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources Career Pathways.

NASDCTEc

- AGC09.02 Select, research and examine critical aspects of career opportunities in one or more AFNR career pathways in order to gain an understanding of the breadth of occupations within this cluster.

Common Core – Reading: Informational Text

- CCSS.ELA-Literacy.RI.9-10.2 Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
- CCSS.ELA-Literacy.RI.9-10.3 Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.

Common Core – Writing

- CCSS.ELA-Literacy.W.9-10.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

Common Core – Speaking and Listening

- CCSS.ELA-Literacy.SL.9-10.2 Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.

AFNR Career Ready Practices

- CRP.02. Apply appropriate academic and technical skills. Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive.

- CRP.04. Communicate clearly, effectively, and with reason. Career-ready individuals communicate thoughts, ideas and action plans with clarity, whether using written, verbal and/or visual methods.
- CRP.07. Employ valid and reliable research strategies. Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies.
- CRP.08. Utilize critical thinking to make sense of problems and persevere in solving them. Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem.

Partnership for 21st Century Skills

- Critical Thinking and Problem Solving
- Flexibility and Adaptability
- Initiative and Self-direction
- Leadership and Responsibility
- Think Creatively

Lesson Plan:

1. **Bell Ringer:** What do you think is the purpose of an SAE?
2. **Introduction:** Sustainability and regenerative agricultural practices are crucial to being able to produce food for a growing world. These practices are important in everyday agricultural practices and even in SAEs. Today we will discover what regenerative agriculture is and the role it plays in the industry.
3. **Activity:** Each student needs a copy of the worksheet “4 Things to Consider for a Regenerative Agriculture SAE.”
 - a. **Part 1:** Read the list “4 Things to Consider for a Regenerative Agriculture SAE,” found at <https://www.ffa.org/the-feed/4-things-to-consider-for-a-regenerative-agriculture-sae/> and answer the questions.
 - b. **Part 2:** Watch the video *Regenerative Agriculture, Because Sustainability is No Longer Enough* from the FFA Blue Room 2020 found at this link, <https://vimeo.com/506246369> and answer the questions.
 - c. **Part 3:** Explore a career as a soil scientist by visiting AgExplorer (<https://agexplorer.ffa.org/>) and answer the questions.
4. **Follow-up:** How can you apply what you learned today to your current SAE or a future SAE?
5. **Optional – Extended Learning Opportunities (Not factored into time requirement):**
 - a. Have students explore the requirements and process to receive an SAE Grant from the National FFA Organization ([FFA.org/participate/grants-and-scholarships/sae-grants/](https://ffa.org/participate/grants-and-scholarships/sae-grants/)) and then have students complete an SAE Grant ([FFA.org/participate/grants-and-scholarships/sae-grants/](https://ffa.org/participate/grants-and-scholarships/sae-grants/)).
6. **Exit Ticket:** How would you explain “regenerative agriculture” to a new student in your class?

Name: _____

4 Things to Consider for a Regenerative Agriculture SAE

Part 1

Directions:

Read the article “4 Things to Consider for a Regenerative Agriculture SAE,” found at <https://www.ffa.org/the-feed/4-things-to-consider-for-a-regenerative-agriculture-sae/>, and complete the following activities.

1. What are the four things to consider for a regenerative agriculture SAE?

- a. _____
- b. _____
- c. _____
- d. _____

Part 2

2. Explain each of the considerations (identified in Question 1) in more detail in the space below.

Consideration 1:

Consideration 2:

Consideration 3:

Consideration 4:

3. What does “regenerative agriculture” mean? Follow this link <https://www.cbf.org/issues/agriculture/regenerative-agriculture.html> to learn more. Write your answer in the space below.

4. According to the article, what is a different way of thinking about regenerative agriculture?

5. Regenerative farmers and ranchers aim to improve _____ health by tapping into basic principles of _____ to improve the overall function and _____ of the land.

6. Summarize what you learned from this article in one sentence:



Name: _____

Directions:

Watch the video *Regenerative Agriculture, Because Sustainability is No Longer Enough* from the FFA Blue Room 2020 found at this link, <https://vimeo.com/506246369>, and answer the questions below.

1. Who is the main speaker for this session/video? What is his or her background?

2. What does sustainability mean?

3. What is the Agriculture Food and Natural Resources Value Chain?
a. What happens in the production segment of the value chain?

4. How is General Mills involved with regenerative agriculture? Identify five factors.

5. What are the six core principles of regenerative agriculture?

6. After watching the video, what is your opinion of regenerative agriculture?

Part 3

Directions:

Learn about a career as a soil scientist by visiting AgExplorer, (<https://agexplorer.ffa.org/>) and then answer the questions below.

1. What are the recommended high school courses for this career?
2. What is the education/training required?
3. What are **three** responsibilities of this career?
4. Click the "See available jobs" button. What are **three available jobs/careers and with what companies?**

Name: _____

Aligned to the following standards:

CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PL-F; FFA.CS-M; FFA.CS-N; AG5; AGC09.02; RI.9-10.2; RI.9-10.3; W.9-10.2; SL.9-10.1; SL.9-10.2; CRP.02; CRP.04; CRP.07; CRP.08

KEY: 4 Things to Consider for a Regenerative Agriculture SAE

Part 1

Directions:

Read the article “4 Things to Consider for a Regenerative Agriculture SAE,” found at <https://www.ffa.org/the-feed/4-things-to-consider-for-a-regenerative-agriculture-sae/>, and complete the following activities.

1. What are the four things to consider for a regenerative agriculture SAE?
 - a. Ask questions.
 - b. Connect with regenerative farmers and ranchers in your area.
 - c. Meet the supporting experts.
 - d. Get creative.

Part 2

2. Explain each of the considerations (identified in Question 1) in more detail in the space below.

Consideration 1: Start researching. Latta FFA advisor suggests Noble Research Institute as a resource for learning regenerative principles. Ask your agriculture teacher, extension agents and parents.

Consideration 2: Seek out local regenerative farmers and work with them. Try an online search for regenerative producers or ask community leaders for ideas.

Consideration 3: Get to know your local Natural Resources Conservation Service (NRCS) and Farm Service Agency (FSA) agents as well as leaders of cooperatives in your area. Learning from local experts who work with farmers might pique your interest in a career that supports them.

Consideration 4: FFA advisor Cooper had a student who planted rye into standing corn to provide soil cover, increase soil organic matter and sequester carbon. She used the left-over seeds for her SAE. FFA advisor Reeves suggests soil testing various sites (some overgrazed and others well-managed) to see the difference various practices can make.

3. What does “regenerative agriculture” mean? Follow this link <https://www.cbf.org/issues/agriculture/regenerative-agriculture.html> to learn more. Write your answer in the space below.

Regenerative agriculture describes holistic farming systems that, among other benefits, improve water and air quality, enhance ecosystem biodiversity, produce nutrient-dense food, and store carbon to help mitigate the effects of climate change.

4. According to the article, what is a different way of thinking about regenerative agriculture?

A way to farm or ranch “in sync with nature, treating the environment like a business partner.”

5. Regenerative farmers and ranchers aim to improve soil health by tapping into basic principles of nature to improve the overall function and resiliency of the land.

6. Summarize what you learned from this article in one sentence:
Answers will vary.



Name: _____

Directions:

Watch the video *Regenerative Agriculture, Because Sustainability is No Longer Enough* from the FFA Blue Room 2020 found at this link, <https://vimeo.com/506246369>, and answer the questions below.

1. Who is the main speaker for this session/video? What is his or her background? **Dr. Steven Rosenzweig, Senior Soil Scientist with General Mills; currently works to accelerate farming adoption of regenerative agriculture practices and measures those results**
2. What does sustainability mean? **Meeting our needs without compromising the ability for future generations to meet theirs.**
3. What is the Agriculture Food and Natural Resources Value Chain? **How something comes from concept to reality**
 - a. What happens in the production segment of the value chain? **Raw products are produced; crops are grown and livestock are raised**
4. How is General Mills involved with regenerative agriculture? *Identify 5 factors.*
 - They have committed to advancing regenerative agriculture on a million acres by 2030.
 - They are piloting a range of strategies in key regions where they source ingredients for their products.
 - They are piloting an ecosystem service market so they can pay regenerative farmers for the services they provide.
 - They are conducting research to better understand economic and environmental impact of regenerative agriculture.
 - They want to measure impact, so they are developing technologies to monitor various components.
5. What are the six core principles of regenerative agriculture?
Understand context of your farm operation; minimize soil disturbance; maximize crop diversity; keep the soil covered; maintain living root year-round; integrate livestock
6. After watching the video, what is your opinion of regenerative agriculture? **Answers will vary.**

Part 3

Directions:

Learn about a career as a soil scientist by visiting AgExplorer (<https://agexplorer.ffa.org/>) and then answer the questions below.

1. What are the recommended high school courses for this career?
Agricultural education, a focus on science, mathematics, and physics
2. What is the education/training required? **A bachelor's degree in chemistry, crop science, soil science, biology, or a related field, such as horticulture, plant physiology or environmental science is required to become a soil scientist. Some positions, especially those that are more research-driven, require a master's or doctorate degree. Those degrees, along with experience, are needed for more administrative-level positions in the field.**
3. What are **three** of the responsibilities of this career? **Could include any of the following: research or study soil characteristics, provide advice on rural or urban land use, perform chemical analysis on micro-organism content of soil, investigate responses of specific soil types to soil management practices, conduct experiments on farms or experimental stations to determine best soil types for different plants, initiate and implement research and development programs for soil research, prepare documented proposals and successfully establish research trials, communicate with relevant industry sectors and initiate well-targeted research projects, manage trial establishment and collection of data and budget for research work and provide management reporting in regard to trial/research progress**
4. Click the "See available jobs" button. What are **three available jobs/careers and with what companies?** **Answers will vary.**