



Lesson Plan

Revving Up History

Created: 04/2024 by the National FFA Organization

Description of Lesson: *Caleb Wilkerson's SAE is tractor restoration. Students will watch a video on the process Caleb went through to restore a 1948 tractor and then will brainstorm and consider what items they could restore or repurpose in their own lives for a potential SAE.*

Student Learning Objectives:

After completing these activities, students will ...

1. Examine the components of a tractor restoration SAE.
2. Describe the importance of restoring or repurposing an item instead of discarding it.
3. Develop a plan to restore or repurpose items in their own lives.

Suggested Grade Level:

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

Suggested Time: 40 minutes (*Time requirements may vary based upon student understanding and class schedule.)

Resources/References:

1. Video: "Tractor Restoration SAE | Caleb Wilkerson," <https://vimeo.com/857908281>.

Equipment and Supplies Needed:

1. A copy of the "Revving Up History" worksheet for each student
2. A copy of the "Restore, Reuse, Repurpose" worksheet for each student
3. Internet access to play the video in real time or embed it in a PowerPoint ahead of time

Vocabulary:

1. Repurpose
2. Restore
3. Reuse

Cross-Curricular Connections:

English/Language Arts

Explain a process for planning how to perform a restoration on an item in the home, school or community.

Virtual Instruction Ideas:

Instructor may post the student activity sheets to an LMS. Students may access the SAE video on their own devices to complete.

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/daug2qx8hktxrpsj1860ucg2xlf5dkx> (Word)

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Name: _____

<https://ffa.box.com/s/ohvcpcumhz8utugg4904kpcq95vrzd48> (Non-Designed Word)

<https://ffa.box.com/s/fzng76f84mmly33iekv49v5pk2jugbzb> (PDF)

<https://docs.google.com/document/d/1v8sGWQHVsCAi7NEIIF7QQBr-YOlqeSKTSAnZP7iefQ/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.PG-I.Professional Growth: Assume responsibility for attaining and improving upon the skills needed for career success.
- FFA.PG-J.Mental Growth: Embrace cognitive and intellectual development relative to reasoning, thinking and coping.
- 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

AFNR Cluster Skills

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

Common Core – Reading: Informational Text

- CCSS.ELA-Literacy.RI.9-10.4: Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).

Common Core – Writing

- CCSS.ELA-Literacy.W.9-10.1: Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
- 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 – Literacy in Science & Technical Subjects: Writing

- CCSS.ELA-Literacy.WHST.9.10.1: Write arguments focused on discipline-specific content.
- CCSS.ELA-Literacy.WHST.9.10.4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Common Core – Math Practices

- CCSS.Math.Practice.MPI: Make sense of problems and persevere in solving them.

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.06: Demonstrate creativity and innovation. Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization.
- 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

- Communication
- Critical Thinking and Problem Solving

Name: _____

- Environmental Literacy
- Global Awareness
- Information, Communications, and Technology Literacy
- Think Creatively

Name: _____

Lesson Plan:

1. **Bell Ringer:** What is the oldest thing you can think of in your house? Does it still work?
2. **Introduction:** *Oftentimes, in our society, we are quick to replace older items once they wear down, don't function as well as they used to or break entirely. We can do this with everything from headphones to vehicles. What would it look like if we took some time to think about what we could do with these items instead of getting rid of them? In the video we're about to watch, we will see a student who took on a new challenge to restore something old to its former glory — let's take a look!*
3. **Activity 1:** Each student needs a copy of the worksheet "Rewing Up History."
 - a. Play the video "Tractor Restoration SAE | Caleb Wilkerson," available at <https://vimeo.com/857908281>. Students will watch the video and answer the questions on the student worksheet as they follow along.
4. **Activity 2:** Each student needs a copy of the worksheet "Restore, Reuse, Repurpose."
 - a. Students will list 10 items in their home, school or community that could be restored, reused or repurposed and answer the reflection questions that follow.
 - b. Students will then select three items and expand on the specific tasks involved in restoring, reusing or repurposing those items.
 - c. Finally, students will consider how they could turn restoration or repurposing into an SAE or small business.
5. **Follow-up:** Have students share ideas from their restoration and repurposing ideas with the class and discuss the variety of items that could be saved from discard and what impact that would have on your community.
6. **Exit Ticket:** What do you find most valuable or interesting about the restoration, reuse or repurposing of older items?

Name: _____

Aligned to the following standards:

CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PG-I; FFA.PG-J; FFA.CS-M; FFA.CS-N;
CCSS.ELA-RI.9-10.4; CCSS.ELA.W.9-10.1; CCSS.ELA.W.9-10.2; CCSS.ELA.WHST.9.10.1;
CCSS.ELA.WHST.9.10.4; CCSS.MP1; CCSS.CRP.02; CRP.04; CRP.06; CRP.08

Revving Up History

Directions:

Answer the questions below as you watch the video “Tractor Restoration SAE | Caleb Wilkerson,” available at <https://vimeo.com/857908281>.

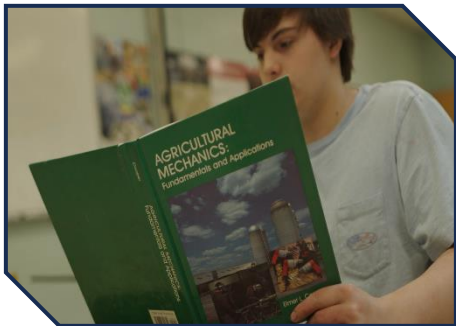
1. What year was the tractor Caleb is restoring originally manufactured?
 - a. 1928
 - b. 1937
 - c. 1943
 - d. 1948

2. What kinds of tasks are involved in restoring a tractor?

-
-
-
-

3. What parts of the tractor has Caleb replaced?

-
-
-
-



4. What four safety precautions does Caleb talk about and show in the video?
 - a.
 - b.
 - c.
 - d.

5. What lesson from Caleb's agriculture class did he say helped him with his SAE?

6. Why does Caleb say that his SAE matters within the agricultural community?

7. What is Caleb's advice to students starting their own SAEs?



Name: _____

Restore, Reuse, Repurpose

Aligned to the following standards:
CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PG-I; FFA.PG-J; FFA.CS-M;
FFA.CS-N; CCSS.ELA-RI.9-10.4; CCSS.ELA.W.9-10.1; CCSS.ELA.W.9-10.2;
CCSS.ELA.WHST.9.10.1; CCSS.ELA.WHST.9.10.4; CCSS. MP1; CCSS;
CRP.02; CRP.04; CRP.06; CRP.08

Directions:

Oftentimes, in our society, when something breaks, wears down, or becomes old or obsolete, we end up discarding the item in favor of its latest model or newest form. Through his SAE, Caleb was able to take something old and restore it to its former glory like it was brand new. Sometimes, it makes more sense to reuse something for its original or a similar purpose even though it is not still new. Other times, we can repurpose items after they have outlived their original usefulness, and they can take on a whole new purpose, for example, repurposing an old livestock watering trough for a planter.

Using the space provided below, brainstorm how you could restore, reuse or repurpose items in your home, school or community.

1. Using the table below, list 10 items in your home, school or community that you could restore, reuse or repurpose instead of merely discarding. Indicate which action(s) you could take with each item. Make at least half of them related to agriculture (like Caleb's tractor, a feeding trough, a planter, a fish tank, etc.).

Item	Restore, Reuse or Repurpose
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

2. Why do you think it is important or helpful to restore, reuse or repurpose older items instead of discarding them?
3. Do you think that we, as a society, value restoration and repurposing? Why or why not?

Name: _____

4. Choose three things from the list you created on the previous page, and in the table below, explain why you would like to restore, reuse or repurpose that item. Outline three tasks you would need to complete in order to do so. See the example below using Caleb's tractor.

Item	Explanation	Tasks
1948 Ford 8N Tractor	To learn more about tractors and how they operate and to be able to help out the agricultural community by being able to work on and help fix tractors.	1. Diagnose what is wrong with the tractor. 2. Decide what new parts are needed and what old parts can be restored. 3. Sand and paint the exterior of the tractor.

List your three items, explain why you'd like to restore, reuse or repurpose them and outline at least three tasks you would need to complete in order to do so.

Item	Explanation	Tasks
		1. 2. 3.
		1. 2. 3.
		1. 2. 3.

For the following questions, consider the three items above.

5. How could you potentially turn any of them into an SAE or a small business?
6. What skills would you need to learn?
7. What impact could your SAE have on the community and/or the environment?

Name: _____

Aligned to the following standards:

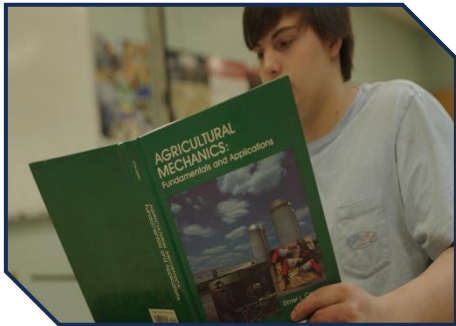
CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PG-I; FFA.PG-J; FFA.CS-M; FFA.CS-N;
CCSS.ELA-RI.9-10.4; CCSS.ELA.W.9-10.1; CCSS.ELA.W.9-10.2; CCSS.ELA.WHST.9.10.1;
CCSS.ELA.WHST.9.10.4; CCSS. MP1; CCSS; CRP.02; CRP.04; CRP.06; CRP.08

KEY: Rewving Up History

Directions:

Answer the questions below as you watch the video "Tractor Restoration SAE | Caleb Wilkerson," available at <https://vimeo.com/857908281>.

1. What year was the tractor Caleb is restoring originally manufactured?
 - a. 1928
 - b. 1937
 - c. 1943
 - d. 1948
2. What kinds of tasks are involved in restoring a tractor?
 - Assessing what is wrong with the tractor
 - Planning for how to repair parts
 - Sanding and repainting the tractor's exterior
 - Deciding what new parts need to be put on and what parts can be restored
3. What parts of the tractor has Caleb replaced?
 - Alternator
 - Valves
 - Piston rings
 - Gaskets and seals



4. What safety precautions does Caleb talk about and show in the video?
 - a. Gloves
 - b. Safety glasses
 - c. Welding jacket
 - d. Welding helmet

5. What lesson from Caleb's agriculture class did he say helped him with his SAE?

Working on small engines and repair allowed him to learn skills he was then able to transfer to the larger engine on the tractor

6. Why does Caleb say that his SAE matters within the agricultural community?

There will always be tractors in agriculture, and there will always be a need for people to work on and repair them.

7. What is Caleb's advice to students starting their own SAEs?

Do something that relates to them and that they would enjoy



Name: _____

KEY: Restore, Reuse, Repurpose

Aligned to the following standards:
CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PG-I; FFA.PG-J; FFA.CS-M; FFA.CS-N; CCSS.ELA-RI.9-10.4; •CCSS.ELA.W.9-10.1; CCSS.ELA.W.9-10.2; CCSS.ELA.WHST.9.10.1; CCSS.ELA.WHST.9.10.4; CCSS. MPI; CCSS; CRP.02; CRP.04; CRP.06; CRP.08

Directions:

Oftentimes, in our society, when something breaks, wears down, or becomes old or obsolete, we end up discarding the item in favor of its latest model or newest form. Through his SAE, Caleb was able to take something old and restore it to its former glory like it was brand new. Sometimes, it makes more sense to reuse something for its original or a similar purpose even though it is not still new. Other times, we can repurpose items after they have outlived their original usefulness, and they can take on a whole new purpose, for example, repurposing an old livestock watering trough for a planter.

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1. Using the table below, list 10 items in your home, school or community that you could restore, reuse or repurpose instead of merely discarding. Indicate which action(s) you could take with each item. Make at least half of them related to agriculture (like Caleb's tractor).

Item	Restore, Reuse or Repurpose
1. Answers will vary.	Answers will vary.
2. Answers will vary.	Answers will vary.
3. Answers will vary.	Answers will vary.
4. Answers will vary.	Answers will vary.
5. Answers will vary.	Answers will vary.
6. Answers will vary.	Answers will vary.
7. Answers will vary.	Answers will vary.
8. Answers will vary.	Answers will vary.
9. Answers will vary.	Answers will vary.
10. Answers will vary.	Answers will vary.

2. Why do you think it is important or helpful to restore, reuse or repurpose older items instead of discarding them?

Answers will vary.

3. Do you think that we, as a society, value restoration and repurposing? Why or why not?

Answers will vary.

Name: _____

4. Choose three things from the list you created on the previous page, and in the table below, explain why you would like to restore, reuse, or repurpose that item. Outline three tasks you would need to complete in order to do so. See the example below using Caleb's tractor.

Item	Explanation	Tasks
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For the following questions, consider the three items above.

5. How could you potentially turn any of them into an SAE or a small business?
- Answers will vary.
6. What skills would you need to learn?
- Answers will vary.
7. What impact could your project have on the community and/or the environment?
- Answers will vary.