

Name: _____

Appendix 5: Wired for Growth

Part 1

Directions:

Read the article “Wired for Growth” in the spring/summer 2024 issue of *FFA New Horizons* and answer the questions below.

1. What sparked Evan Vander Stoep’s interest in reviving the fodder greenhouse system at Milwaukie High School?
2. How did Evan’s advisor, Kathy Mayfield, initially perceive his efforts to fix the greenhouse system?
3. How many pounds of fodder do the animals at the North Clackamas FFA Chapter eat per day? How many pounds per week would that be?
4. Describe the controlled-environment agriculture fodder system introduced by Mayfield. What was its primary goal?
5. What were the benefits of switching from the initial flood-and-drain system to the mister system? How did the chapter discover this and make the decision to switch?
6. Who helped to support Evan’s efforts to revive the fodder system?



Name: _____

7. Describe Evan's process of fixing up and tweaking the system's designs.

8. What kinds of skills did he have to learn and use throughout the process of reviving the fodder production system?

9. How did Evan experiment with seed soaking, and what significant findings did he discover regarding the impact of water temperature on seed soaking?

10. What is Evan doing now? What parallels does he draw to his work on reviving the fodder system?



I have a creative side; I like to come up with new ideas and design custom components. I want to put those passions to use to continue down the ag path; it's something I'm interested in and passionate about.

—Evan Vander Stoep



Name: _____

Part 2

Directions:

Evan Vander Stoep saw a need and a potential project in his school's agriculture program and took action. There are endless opportunities for growth in our schools and communities. Now it's your turn. Using this activity sheet, identify a potential project based on a need in your school's agriculture program or FFA chapter and make a plan for how you could tackle that challenge.

Project Title:	
Description of Need/Opportunity (Scope): <i>(four or five sentences)</i>	
Project Outcomes: <i>(List at least three specific outcomes for your project (i.e., What will it look like when you're done?).</i>	
1. 2. 3.	
Materials and/or Skills Needed: <i>(List at least five specific things.)</i>	Project Supporters: <i>(Think of at least two individuals who can support your efforts. List their names and how they can help.)</i>
1. 2. 3. 4. 5.	1. 2.

Name: _____

SMART Goal 1

(Write a goal for the project using the SMART formula.)

SMART Goals: Specific, Measurable, Attainable, Relevant, Time-Bound

SMART Goal 2

(Write a goal for the project using the SMART formula.)

SMART Goals: Specific, Measurable, Attainable, Relevant, Time-Bound

Timeline:

(Brainstorm at least three specific milestones for your project.)

1.

2.

3.

Questions:

(List at least three specific questions you have about this project that you can ask your agriculture teacher.)

1.

2.

3.

1. Why did you choose this project? What is your interest in it?

2. How will completing this project help you with your future goals?

Name: _____

Aligned to the following standards: CS.01; CS.05; FFA.PLA; FFA.PLC; FFA.PL.F; FFA.PG.I; FFA.CS.N; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.4; MP2; MP6; CCSS.ELA.W.9-10.2; AG1; AG5; CRP.02; CRP.06; CRP.08; AGC08.01; AGC09.02;

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1. What sparked Evan Vander Stoep’s interest in reviving the fodder greenhouse system at Milwaukie High School?

He was motivated by the state of disrepair of the fodder greenhouse system at Milwaukie High School, and he saw it as a challenge to get it working again.



2. How did Evan’s advisor, Kathy Mayfield, initially perceive his efforts to fix the greenhouse system?

Initially, she was skeptical and questioned whether Evan knew what he was doing.

3. How many pounds of fodder do the animals at the North Clackamas FFA Chapter eat per day? How many pounds per week would that be?

The animals eat 400 pounds of fodder per day.

$400 \times 7 = 2,800$ pounds per week

4. Describe the controlled-environment agriculture fodder system introduced by Mayfield. What was its primary goal?

Mayfield introduced vertical racks and a flood-and-drain system into their 20x40-foot greenhouse for controlled-environment agriculture, aiming to grow a significant amount of feed in a small space at a rapid pace, teaching students about crop production for animals.

5. What were the benefits of switching from the initial flood-and-drain system to the mister system? How did the chapter discover this and make the decision to switch?

There was less seed washout, decreased mold levels and increased production. The North Clackamas FFA Chapter arrived at this type of system after FFA members conducted an agriscience project in 2014 comparing the performance of the flood-and-drain system with the mister system.

6. Who helped to support Evan’s efforts to revive the fodder system?

Evan has support from Kathy Mayfield, his FFA advisor, and Chris Guntermann, a local greenhouse specialist.

Name: _____

7. Describe Evan's process of fixing up and tweaking the system's designs.

Evan spent all his spare time working on the system. He would assemble test configurations and ran trials of seeding, harvesting and reseeding. This process took more than two hours per day. He kept making small tweaks to his designs moving the irrigation valves from the floor to the ceiling and installing a programable logic controller for the irrigation system and to manage the humidity in the greenhouse. He continued to run tests and make adjustments to the system to meet his and Ms. Mayfield's production goals.

8. What kinds of skills did he have to learn and use throughout the process of reviving the fodder production system?

He used skills in system design, electrical, plumbing and code-writing for the controller. He also had to rely a lot on his problem-solving skills in his trial and error.

9. How did Evan experiment with seed soaking, and what significant findings did he discover regarding the impact of water temperature on seed soaking?

He would soak some of the seeds in buckets with regular hose water (50°F) and then used an aquarium heater to control the water temperature in other buckets to collect data on different temperature ranges.

He found that there were peak production rates when the seeds were soaked in the 72-75°F range and that temperatures above 80°F were too high and caused seed degradation and lower production rates.

10. What is Evan doing now? What parallels does he draw to his work on reviving the fodder system?

He graduated in 2023 and accepted a position as a radio tower technician. He travels around the country repairing and installing technical equipment, which sometimes requires climbing hundreds of feet into the air to work on the tower's antennas and lights.

Similar to redesigning the irrigation system for the barley fodder operation, repairing radio towers requires top-notch technical and problem-solving skills.



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—Evan Vander Stoep



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Part 2

Directions:

Evan Vander Stoep saw a need and a potential project in his school's agriculture program and took action. There are endless opportunities for growth in our schools and communities. Now it's your turn; using this activity sheet, identify a potential project based on a need in your school's agriculture program or FFA chapter and make a plan for how you could tackle that challenge.

Project Title: <i>Answers will vary.</i>	
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Project Outcomes: <i>(List at least three specific outcomes for your project (i.e., What will it look like when you're done?).</i> 1. <i>Answers will vary.</i> 2. <i>Answers will vary.</i> 3. <i>Answers will vary.</i>	
Materials and/or Skills Needed: <i>(List at least five specific things.)</i> 1. <i>Answers will vary.</i> 2. <i>Answers will vary.</i> 3. <i>Answers will vary.</i> 4. <i>Answers will vary.</i> 5. <i>Answers will vary.</i>	Project Supporters: <i>(Think of at least two individuals who can support your efforts. List their names and how they can help.)</i> 1. <i>Answers will vary.</i> 2. <i>Answers will vary.</i>

Name: _____

SMART Goal 1

(Write a goal for the project using the SMART formula.)

SMART Goals: Specific, Measurable, Attainable, Relevant, Time-Bound

Answers will vary.

SMART Goal 2

(Write a goal for the project using the SMART formula.)

SMART Goals: Specific, Measurable, Attainable, Relevant, Time-Bound

Answers will vary.

Timeline:

(Brainstorm at least three specific milestones for your project.)

1. Answers will vary.
2. Answers will vary.
3. Answers will vary.

Questions:

(List at least three specific questions you have about this project that you can ask your agriculture teacher.)

1. Answers will vary.
2. Answers will vary.
3. Answers will vary.

1. Why did you choose this project? What is your interest in it?

Answers will vary.

2. How will completing this project help you with your future goals?

Answers will vary.