



Lesson Plan

SAEs at School

Created: 11/2025 by the National FFA Organization

Description of Lesson: Mary Kate and Reyna manage their school's hydroponics program, "Jackets for the Future," which provides fresh lettuce to their school community. Students will watch a video on this SAE and then brainstorm their own ideas and plans for a possible school-based enterprise SAE on their campus using the resources of their agricultural education department.

Student Learning Objectives:

After completing these activities, students will ...

1. Examine the components of a school-based hydroponics SAE.
2. Describe the purpose and benefits of a school-based enterprise SAE.
3. Brainstorm and develop ideas for their own potential school-based enterprise SAE.

Suggested Grade Level:

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

Suggested Time: 90 minutes (*Time requirements may vary based upon student understanding and class schedule.)

Resources/References:

1. Video: "Hydroponics SAE," <https://vimeo.com/1108190707>
2. Website: SAE for All, <https://saeforall.org/>

Related Resources:

1. SAE for All, School-Based Enterprise Independent Learning Guide, Teacher Edition, <https://FFA.app.box.com/s/ehmsurh060k4xe7c7jwyhgkdhrq1orw0>
2. SAE for All, School-Based Enterprise Independent Learning Guide, Student Edition, <https://FFA.app.box.com/s/qki0h9c6g6z9dk86bq19d4dv6vft1z9r>
3. School-based Enterprise SAE for All Resources, <https://FFA.box.com/s/fj9uxsi4nr1x2dltzdume9z83ilp8ist>

Equipment and Supplies Needed:

1. A copy of the "Hydroponics School-Based SAE" worksheet for each student
2. A copy of the "SAEs at School" 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. Hydroponics
2. School-based enterprise SAE
3. Supervised agricultural experience

Cross-Curricular Connections:

English/Language Arts	Technology	Social Studies
Brainstorm ideas and write about a plan for a school-based enterprise SAE.	Use internet resources to learn about school-based enterprise SAEs.	Work collaboratively with a group of peers to decide on and plan a potential school-based enterprise SAE.

SAE and FFA Connections

1. SAE For All, <https://saeforall.org/>
2. National FFA SAE Grants, [FFA.org/participate/grants-and-scholarships/sae-grants/](https://ffa.org/participate/grants-and-scholarships/sae-grants/)

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/fty985utwtuejuwk8pqhzy75avqkinz3> (Word)

<https://ffa.box.com/s/68fnto6rc24jri4u87nmrvf85rpwug9z> (PDF)

https://docs.google.com/document/d/1GnVbCfVDs7GX_dRrYRM_5s_box-jYya9qL3dSHQVGI/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 A1. Work independently and in groups to get things done.
- FFA.PL-A.Action A3. Plan effectively.
- FFA.PL-A.Action A4. Identify and use resources.
- FFA.PL-C.Vision C2. Conceptualize ideas.
- FFA.PL-F.Continuous Improvement F5. Acquire new knowledge.
- FFA.PG-I.Professional Growth I5. Demonstrate exemplary employability skills.
- FFA.PG-J.Mental Growth J1. Think critically.
- FFA.CS-N.Decision Making N1. Demonstrate the decision-making process.

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.9-10.4. 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).
- CCSS.ELA-LITERACY.RI.11-12.7. Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

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.
- CCSS.ELA-LITERACY.W.9-10.4. Produce clear and coherent writing in which the development, organization and style are appropriate to task, purpose and audience.

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.

Common Core – Language

- CCSS.ELA-LITERACY.L.9-10.1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- CCSS.ELA-LITERACY.L.9-10.2. Demonstrate command of the conventions of standard English capitalization, punctuation and spelling when writing.

AFNR Career Ready Practices

- CRP.02. Apply appropriate academic and technical skills.
- CRP.04. Communicate clearly, effectively and with reason.
- CRP.06. Demonstrate creativity and innovation.
- CRP.08. Utilize critical thinking to make sense of problems and persevere in solving them.

Partnership for 21st Century Skills

- Communication
- Critical Thinking and Problem Solving
- Information Literacy
- Initiative and Self-Direction
- Productivity and Accountability
- Think Creatively

Lesson Plan:

1. **Bell Ringer:** List three challenges you can see that may prevent students from starting an SAE.
2. **Introduction:** *In agricultural education, learning does not start and stop at the classroom door! Through FFA and supervised agricultural experiences (SAEs), you will have many opportunities to learn and develop real-world skills outside of the classroom and beyond the school day.*

Foundational SAEs are a great start to learning about careers, skills and activities you can do to prepare for your future. Some students, however, will take this learning further with an immersion SAE. Immersion SAEs allow students to build upon their Foundational SAE activities by gaining real-world, hands-on experience within their chosen career path. Specifically, today, we're going to look at a school-based enterprise SAE, where you can work collaboratively with a group of other students to provide goods or services from your school campus.

In a school-based enterprise SAE, a group of students starts a business which is operated from the school campus. The school or FFA chapter bears the risk of the business, but the students manage the business, defining responsibilities and how profits are distributed. They develop a business plan and then operate the business under the oversight of a board of directors.

Let's first watch a video about a successful school-based enterprise SAE and then we'll dive into learning more about how we can start our own school-based enterprises!

3. **Activity 1:** Each student needs a copy of the worksheet "Hydroponics School-Based SAE."
 - a. **Part 1:** Play the video "Hydroponics SAE," available at <https://vimeo.com/1108190707>. Students will watch the video and answer the questions on the student activity sheet as they follow along. You may choose to show the video to the entire class or have students view it individually on their own devices.
 - b. **Part 2:** Students will analyze the "Jackets for the Future" SAE and list its goals, resources, challenges and benefits for the students involved. They will also answer a few analysis questions.
Note: These were not all necessarily mentioned in the video, but students should think through what they know about the project and make inferences based on what they've seen and heard.
4. **Activity 2:** Each student needs a copy of the worksheet "SAEs at School."
 - a. **Part 1:** Students will visit <https://saeforall.org/immersion-sae/> and scroll down to click on the "School-Based Enterprise SAE" tab to learn more about school-based enterprises.
 - b. **Part 2:** Students will use the space provided on the student activity sheet to brainstorm ideas for potential new school-based enterprises using your agriculture department's facilities, equipment and supplies. These are just ideas, not full plans yet, so they should come up with as many as they can. You may allow them to walk around your department's facilities and look at all the resources available as they complete this activity.
 - c. **Part 3:** Divide students into groups of four or five and have them share their lists from Part 2 and discuss how their ideas were similar or different. Then, each group will select one of their ideas from Part 2 and begin putting together a plan for starting this school-based enterprise using the prompts on the student activity sheet.
5. **Follow-up:** Have the small groups informally share their ideas for their school-based enterprise SAEs with the class. Encourage students who are interested in this type of SAE to see you for more information to get started on one of these ventures.
6. **Optional – Extended Learning Opportunities (Not factored into time requirement):**
 - a. Have students continue creating their school-based enterprise SAE plan using the school-based enterprise resources from SAE for all: <https://FFA.box.com/s/fj9uxsi4nr1x2dltzdume9z83ilp8ist>.
7. **Exit Ticket:** Do you think a school-based enterprise is the right path for your SAE? Why or why not?

Name: _____

Hydroponics School-Based SAE

Aligned to the following standards:

FFA.PL-A1; FFA.PL-A3; FFA.PL-A4; FFA.PL-C2; FFA.PL-F5; FFA.PL-I5;
FFA.PL-J1; FFA.PL-N1; CCSS.ELA-RI.9-10.4; CCSS.ELA-RI.11-12.7;
CCSS.ELA-W.9-10.2; CCSS.ELA-W.9-10.4; CCSS.ELA-SL.9-10.2;
CCSS.ELA-L.9-10.1; CCSS.ELA-L.9-10.2; CRP.02; CRP.04; CRP.06; CRP.08

Part 1

Directions: Answer the questions below as you watch the video “Hydroponics SAE,” available at <https://vimeo.com/1108190707>.

1. What pathway is Mary Kate and Reyna's SAE in?
2. Describe their SAE in one or two sentences.
3. How did Mary Kate and Reyna get started with their SAE?
4. What supplies are needed for their SAE?
5. What are three tasks that Mary Kate and Reyna regularly perform for their SAE?
 - a.
 - b.
 - c.
6. What are four safety considerations that they take when working on their SAE?
 - a.
 - b.
 - c.
 - d.
7. What have been Mary Kate's and Reyna's favorite memories from their SAE?

Mary Kate:

Reyna:
8. What do they say their SAE has taught the students and staff at their school?



Name: _____

Part 2

Directions: Use the table below to analyze the “Jackets for the Future” SAE and list its goals, resources, challenges and benefits for the students involved. Not all of these were necessarily mentioned in the videos, but as you think about the SAE, list as many as you can think of, but write at least two for each category. Then, answer the questions below.

Jackets for the Future School-Based SAE

Goals	Resources	Challenges	Benefits

Analysis Questions

1. Why do you think Mary Kate and Reyna’s SAE is so successful?
2. Why is it important to have a plan for an SAE?
3. What do you think are some of the benefits of students starting or working in a school-based enterprise for their SAE?

Name: _____

SAEs at School

Aligned to the following standards:

FFA.PL-A1; FFA.PL-A3; FFA.PL-A4; FFA.PL-C2; FFA.PL-F5; FFA.PL-I5;
FFA.PL-J1; FFA.PL-N1; CCSS.ELA-RI.9-10.4; CCSS.ELA-RI.11-12.7;
CCSS.ELA-W.9-10.2; CCSS.ELA-W.9-10.4; CCSS.ELA-SL.9-10.2;
CCSS.ELA-L.9-10.1; CCSS.ELA-L.9-10.2; CRP.02; CRP.04; CRP.06; CRP.08

Part 1

Directions: Visit <https://saeforall.org/immersion-sae/> and scroll down to click on the “School-Based Enterprise SAE” tab to learn more about school-based enterprises and answer the questions below.

1. What kind of student might be the best fit for a school-based enterprise SAE?
2. Fill in the blanks in the following statement about school-based enterprise SAEs.

“In a school-based enterprise SAE, students lead _____ that provide _____ or _____. These businesses are operated from the _____ utilizing _____, _____ and other _____ provided by the agricultural education program or the school and are owned by the school or FFA chapter. It is important to remember that school-based enterprises are _____. While the _____ will be available to provide _____, they are not the primary _____ of the business. With regular input from the _____, the student leadership team will be able to facilitate the ongoing processes and growth of the business.”

Watch the short video on the website and answer the following questions about school-based enterprise SAEs.

3. How does an Immersion SAE build upon a Foundational SAE?
4. In three or four sentences, briefly explain the Wildcat Landscaping school-based enterprise from the video.



5. How did Jacob and Juan get started with their school-based enterprise?
6. What is the difference between a school-based enterprise and a placement SAE at school?
7. How do school-based enterprise SAEs benefit both the students and the community?

Student Benefits	Community Benefits

Name: _____

Part 2

Directions: Use the space and prompts provided below to brainstorm ideas for potential new school-based enterprises that utilize your school's agriculture facilities, equipment and supplies. These are just ideas, not full plans yet, so come up with as many as you can!

1. What resources does your school have that may be useful in conducting a school-based enterprise SAE? (List as many as possible.)

2. What are some tasks or skills you are particularly interested in learning for your future career or life after high school? (List as many as possible.)

3. Who are some potential individuals who could assist you with a school-based enterprise SAE? (These could be mentors, members for your board of directors, other student workers, etc.) List both their name and position or area of expertise. (List as many as possible.)

Name: _____

4. Looking at the three lists you have generated, brainstorm 10 ideas for your school-based enterprise SAE. Write a simple one-sentence description for each (see the examples below).

Examples: • Utilize the school's hydroponics system to grow and sell lettuce to the school's teachers and staff. • Use the school's equipment to offer landscape design and installation services to the community.
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

5. Reviewing your list above, which projects most align with your future goals?
6. Which projects do you believe you would be most successful with?
7. Reviewing your list above, star, circle or highlight the top five ideas you would be most interested in starting as a school-based enterprise SAE. These will be the ideas you share with your group in Part 3.

Part 3

1. Share your top five ideas with your group and listen to theirs. As your classmates share, record any ideas that you did not think of.

3. Why did your group select this idea? (Explain in three or four sentences.)

Name: _____

4. Fill out the chart below for your school-based enterprise SAE idea. List as many items as you can think of for each category, but write at least two items per category.

SAE Idea Title: _____

Goals	Resources	Challenges	Benefits

5. What are three specific tasks that would need to be performed regularly for this SAE?
- a.
 - b.
 - c.
6. What are two safety considerations you would need to take for this SAE?
- a.
 - b.
7. List out individuals who would be a part of this SAE and their roles (list at least five).
- a.
 - b.
 - c.
 - d.
 - e.
8. What will be your first step to begin this school-based enterprise SAE?

Name: _____

KEY: Hydroponics School-Based SAE

Aligned to the following standards:

FFA.PL-A1; FFA.PL-A3; FFA.PL-A4; FFA.PL-C2; FFA.PL-F5;
FFA.PL-I5; FFA.PL-J1; FFA.PL-N1; CCSS.ELA-RI.9-10.4;
CCSS.ELA-RI.11-12.7; CCSS.ELA-W.9-10.2; CCSS.ELA-W.9-10.4; CCSS.ELA-SL.9-10.2; CCSS.ELA-L.9-10.1; CCSS.ELA-L.9-10.2; CRP.02; CRP.04; CRP.06; CRP.08

Part 1

Directions: Answer the questions below as you watch the video "Hydroponics SAE," available at <https://vimeo.com/1108190707>.

1. What pathway is Mary Kate and Reyna's SAE in?

Food Products and Processing

2. Describe their SAE in one or two sentences.

Answers will vary.

3. How did Mary Kate and Reyna get started with their SAE?

They took a Food and Agriculture Products class and learned how the systems work from their teacher and then began teaching their peers.

4. What supplies are needed for their SAE?

Hydroponics systems, Refrigerator, Harvesting Supplies, Containers

5. What are three tasks that Mary Kate and Reyna regularly perform for their SAE?

- Adjusting the water and pH levels in the hydroponics systems
- Refilling the nutrient buckets
- Harvesting the lettuce

6. What are four safety considerations that they take when working on their SAE?

- Safety glasses
- Gloves
- Hair nets
- Lab coats

7. What has been Mary Kate's and Reyna's favorite memories from their SAE?

Mary Kate: Watching the systems and lettuce grow and involving others

Reyna: Taking young lettuce home with her and caring for the new plants at home

8. What do they say their SAE has taught the students and staff at their school?

That you can do agriculture nontraditionally indoors



Name: _____

Part 2

Directions: Use the table below to analyze the “Jackets for the Future” SAE and list its goals, resources, challenges and benefits for the students involved. Not all of these were necessarily mentioned in the videos, but as you think about the SAE, list as many as you can think of, but write at least two for each category. Then, answer the questions below.

Jackets for the Future School-Based SAE

Goals	Resources	Challenges	Benefits
Answers will vary.	Answers will vary.	Answers will vary.	Answers will vary.

Analysis Questions

1. Why do you think Mary Kate and Reyna's SAE is so successful?

Answers will vary.

2. Why is it important to have a plan for an SAE?

Answers will vary.

3. What do you think are some of the benefits of students starting or working in a school-based enterprise for their SAE?

Answers will vary.

Name: _____

KEY: SAEs at School

Aligned to the following standards:

FFA.PL-A1; FFA.PL-A3; FFA.PL-A4; FFA.PL-C2; FFA.PL-F5; FFA.PL-I5;
FFA.PL-J1; FFA.PL-N1; CCSS.ELA-RI.9-10.4; CCSS.ELA-RI.11-12.7;
CCSS.ELA-W.9-10.2; CCSS.ELA-W.9-10.4; CCSS.ELA-SL.9-10.2;
CCSS.ELA-L.9-10.1; CCSS.ELA-L.9-10.2; CRP.02; CRP.04; CRP.06; CRP.08

Part 1

Directions: Visit <https://saeforall.org/immersion-sae/> and scroll down to click on the “School-Based Enterprise SAE” tab to learn more about school-based enterprises and answer the questions below.

1. What kind of student might be the best fit for a school-based enterprise SAE?

Those who enjoy collaborating with other students and who would benefit from the available resources of the school and/or FFA chapter.

2. Fill in the blanks in the following statement about school-based enterprise SAEs.

“In a school-based enterprise SAE, students lead business enterprises that provide goods or services. These businesses are operated from the school campus utilizing facilities, equipment and other resources provided by the agricultural education program or the school and are owned by the school or FFA chapter. It is important to remember that school-based enterprises are student-led. While the instructor will be available to provide guidance, they are not the primary decision makers of the business. With regular input from the board of directors, the student leadership team will be able to facilitate the ongoing processes and growth of the business.”

Watch the short video on the website and answer the following questions about school-based enterprise SAEs.

3. How does an Immersion SAE build upon a Foundational SAE?

Immersion SAEs build upon the learning in a Foundational SAE.

4. In three or four sentences, briefly explain the Wildcat Landscaping school-based enterprise from the video.

Answers will vary.



5. How did Jacob and Juan get started with their school-based enterprise?

They were learning about landscape design in class, and they teamed up with each other and other students to research needs in the community, developed a business plan, assembled a board of directors and discussed how to share responsibilities and profits.

6. What is the difference between a school-based enterprise and a placement SAE at school?

In a school-based enterprise, the students are in charge of the operation and make all the decisions and share in the profits of the business. In a placement SAE at school, students work for and under the direction of the teacher/agriculture department, are not decision makers in the business and may be paid or unpaid.

7. How do school-based enterprise SAEs benefit both the students and the community?

Student Benefits	Community Benefits
• Exercise creativity and passions • Experience making real-world decisions • Making a profit	• Meeting needs • Providing goods and services • Making others' lives easier

Name: _____

Part 2

Directions: Use the space and prompts provided below to brainstorm ideas for potential new school-based enterprises that utilize your school's agriculture facilities, equipment and supplies. These are just ideas, not full plans yet, so come up with as many as you can!

1. What resources does your school have that may be useful in conducting a school-based enterprise SAE? (List as many as possible.)

Answers will vary.	

2. What are some tasks or skills you are particularly interested in learning for your future career or life after high school? (List as many as possible.)

Answers will vary.	

3. Who are some potential individuals who could assist you with a school-based enterprise SAE? (These could be mentors, members for your board of directors, other student workers, etc.) List both their name and position or area of expertise. (List as many as possible.)

Answers will vary.	

Name: _____

4. Looking at the three lists you have generated, brainstorm 10 ideas for your school-based enterprise SAE. Write a simple one-sentence description for each (see the examples below).

Examples: • Utilize the school's hydroponics system to grow and sell lettuce to the school's teachers and staff. • Use the school's equipment to offer landscape design and installation services to the community.
1. Answers will vary.
2. Answers will vary.
3. Answers will vary.
4. Answers will vary.
5. Answers will vary.
6. Answers will vary.
7. Answers will vary.
8. Answers will vary.
9. Answers will vary.
10. Answers will vary.

5. Reviewing your list above, which projects most align with your future goals?

Answers will vary.

6. Which projects do you believe you would be most successful with?

Answers will vary.

7. Reviewing your list above, star, circle or highlight the top five ideas you would be most interested in starting as a school-based enterprise SAE. These will be the ideas you share with your group in Part 3.

Answers will vary.

Name: _____

Part 3

Directions: Team up with other students to form a group as directed by your teacher. In your group, take turns sharing ideas with each other and record your teammates' ideas below. Then, select one idea and work together to create a plan for starting this school-based enterprise.

1. Share your top five ideas with your group and listen to theirs. As your classmates share, record any ideas that you did not think of.

Answers will vary.

2. As a group, select one idea to begin to create a plan for and record it below.

Answers will vary.

3. Why did your group select this idea? (Explain in three or four sentences.)

Answers will vary.

Name: _____

4. Fill out the chart below for your school-based enterprise SAE idea. List as many items as you can think of for each category, but write at least two items per category.

SAE Idea Title: _____

Goals	Resources	Challenges	Benefits
Answers will vary.	Answers will vary.	Answers will vary.	Answers will vary.

5. What are three specific tasks that would need to be performed regularly for this SAE?
- a. Answers will vary.
 - b. Answers will vary.
 - c. Answers will vary.
6. What are two safety considerations you would need to take for this SAE?
- a. Answers will vary.
 - b. Answers will vary.
7. List out individuals who would be a part of this SAE and their roles (list at least five).
- a. Answers will vary.
 - b. Answers will vary.
 - c. Answers will vary.
 - d. Answers will vary.
 - e. Answers will vary.
8. What will be your first step to begin this school-based enterprise SAE?
- Answers will vary.