



Lesson Plan

Mapping of River

Created: 02/2019 by the National FFA Organization

SAE Video Summary: Follow Fiona as she introduces us to her supervised agricultural experience (SAE) program of mapping the Quinnipiac River and helping the Quinnipiac River and Trail Committee. She shares why she is interested in river mapping, the skills she has gained and what she has learned about GIS technology.

STUDENT LEARNING OBJECTIVES:

After completing these activities, students will ...

1. Describe the components of a natural resources systems SAE.
2. Examine relatable SAEs and careers.
3. Examine national parks and the associated volunteer opportunities.

TIME REQUIRED: 60 minutes

RESOURCES:

1. "Fiona Haggerty – SAE – Mapping of River," <https://vimeo.com/300298494>
2. Ag Explorer, AgExplorer.ffa.org
3. National FFA SAE Idea Cards, <https://FFA.box.com/v/saeideacards>

EQUIPMENT AND SUPPLIES NEEDED:

1. A copy of the "Mapping the River" worksheet for each student
2. A copy of the "SAEs and Careers" worksheet for each student
3. A copy of the "National and State Parks" worksheet for each student
4. Internet access to play the video in real time or embed it in a PowerPoint ahead of time

THIS QUICK LESSON PLAN WOULD WORK WELL AS:

1. An SAE lesson.
2. A natural resource and environmental lesson.
3. An agricultural careers lesson.

STUDENT ACTIVITY SHEETS:

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

<https://ffa.box.com/s/dpwj1mjubvzyzdlqwtit0oab5m4tepf1> (Word)

<https://ffa.box.com/s/ch5acepeaspaapq9tearp7i4a0g6htaf> (PDF)

THESE ACTIVITIES ARE ALIGNED TO THE FOLLOWING STANDARDS:

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-B.Relationship: Build relationships, work as a team player and appreciate the talents of others.
- FFA.PL-D.Character: Conduct oneself appropriately in relation to others regardless of the situation.
- FFA.PL-F.Continuous Improvement: Accept responsibility for learning and personal growth.
- FFA.PG-H.Social Growth: Successfully interact with others and adapt to various social situations.
- 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.
- FFA.CS-O.Flexibility/Adaptability: Be flexible in various situations and adapt to change.

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.9-10.2 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.
- CCSS.ELA-LITERACY.W.9-10.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Common Core – Speaking and Listening

- CCSS.ELA-LITERACY.SL.9-10.4 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

Common Core – Literacy in Science & Technical Subjects: Writing

- CCSS.ELA-Literacy.WHST.9.10.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
- 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.
- CCSS.ELA-Literacy.WHST.9.10.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Common Core- Math Practices

- CCSS.MP1: Make sense of problems and persevere in solving them.
- CCSS.MP2: Reason abstractly and quantitatively.
- CCSS.MP6: Attend to precision.

Common Career Technical Core

- AG-NR2 Analyze the interrelationships between natural resources and humans.

AFNR Performance Element

- NRS.02. Analyze the interrelationships between natural resources and humans.

AFNR Career Ready Practices

- 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.
- CRP.11. Use technology to enhance productivity. Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems.

Partnership for 21st Century Skills

- Collaboration
- Communication
- Flexibility and Adaptability
- Information, Communications, and Technology Literacy
- Initiative and Self-Direction
- Leadership and Responsibility
- Productivity and Accountability
- Think Creatively
- Social and Cross-Cultural Skills
- Work Creatively with Others

LESSON PLAN:

1. ***Bell Ringer:*** What are various ways you and others give back to the community through your FFA chapter, school, club or sports activities? *Identify and explain at least two ways.*
2. ***Introduction:*** *Fiona's SAE is mapping the Quinnipiac river and trail in Connecticut. She does this as a way to help the local community. Fiona will take us behind the scenes and explain more about her SAE and why she enjoys it.*

3. *Activity:*
 - a. Part 1: Each student needs a copy of the worksheet "Mapping the River." Students will begin by watching the video "Fiona Haggerty – SAE – Mapping the River." Students will answer questions as they watch the video.
 - b. Part 2: Each student needs a copy of the worksheet "SAEs and Careers." Students will research SAE Idea Cards and find three SAEs that are relatable to Fiona's. Students will then research careers tied to each of those SAEs.
 - c. Part 3: Each student needs a copy of the worksheet "National and State Parks." Students will research national parks in their state, region or area and determine what types of volunteer opportunities are available.
4. *Follow-up:* Invite a park ranger from a nearby state or national park to speak to your classes and/or FFA chapter about the volunteer and career opportunities available. If a state or national park is not nearby, have students research volunteer opportunities within the community. (*Suggestions for locating volunteer opportunities: contact your local chamber of commerce or 4-H extension office.*)
5. *Leveling Up:* Have students take the careers they identified and researched in the "SAEs and Careers" worksheet and go one step further and research the available jobs. (*Check out AgExplorer, <https://agexplorer.ffa.org>, to aid in your career research.*) Next, have students create or update their resume using the FFA Resume Generator, https://www.FFA.org/educator_resources/ffa-resume-generator/. *Note: Students will need an FFA login to access this.*
6. *Exit Ticket:* What new SAEs did you learn about today? From the SAEs you learned about, describe one that would benefit your school and/or community.

NAME: _____

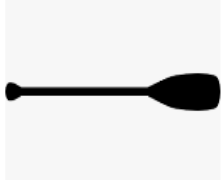
Aligned to the following standards:

FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA.PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6;
CCSS.ELA-SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-
WHST.9.10.6; MP1; MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11; AG-NR2; NRS.02

Mapping the River

DIRECTIONS:

Watch the video "Fiona Haggerty – SAE – Mapping of River" (<https://vimeo.com/300298494>) and respond by answering the questions below.

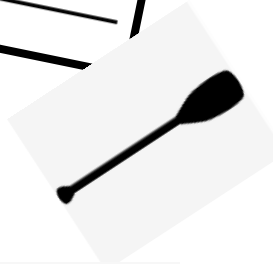


1) What is Fiona's SAE?



2) What motivated her to start the SAE?

3) What were her beginning steps in starting the SAE?



4) What has Fiona learned most from her SAE?

6) What activities in the classroom helped in her SAE?

5) What skills did she gain?

7) What is one way you can apply what you learned from the video to your future?

Name _____

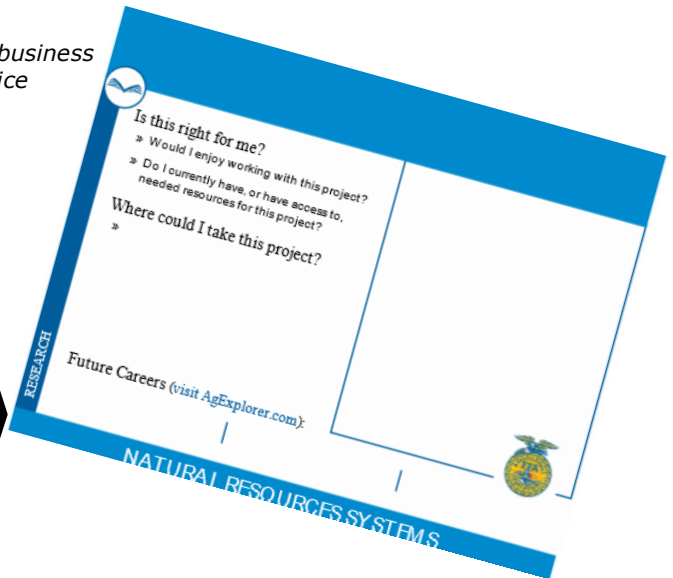
Aligned to the following standards:
FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA.PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6; CCSS.ELA-SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-WHST.9.10.6; MP1; MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11; AG-NR2; NRS.02

SAEs and Careers

DIRECTIONS

To answer the questions below, visit the SAE Idea Cards, available at <https://FFA.box.com/v/saeideacards>. (Career focus areas include agribusiness systems, animal systems, biotechnology systems, environmental service systems, food products and processing systems, natural resources systems, plant systems, power, structural and technical systems and agricultural education.)

1) What other SAEs are related to Fiona's? Identify 3 and the career focus area in which they fit.



2) What are careers related to the SAEs you identified above? For example, Develop a forest wildlife management plan for a local landowner. — Forester

3) For the careers identified above, what are the educational requirements? (Visit AgExplorer.ffa.org.)

Name _____

Aligned to the following standards:

FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA.PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6;
CCSS.ELA-SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-
WHST.9.10.6; MP1; MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11; AG-NR2; NRS.02

National and State Parks

DIRECTIONS

Visit the National Park Service volunteer webpage, <https://www.nps.gov/getinvolved/volunteer.htm>. Answer the questions below.



1) What national parks are located in or near your state? Use this site to locate a park near you: <https://www.nps.gov/findapark/index.htm>.

2) What volunteer opportunities are available at one of the parks near you or in general with the National Park Service?



3) Why is volunteering important? (Use the box below for additional space.)



Name _____

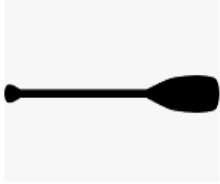
KEY: Mapping the River

Aligned to the following standards:

FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA.PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6;
CCSS.ELA-SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-
WHST.9.10.6; MP1; MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11; AG-NR2; NRS.02

DIRECTIONS:

Watch the video "Fiona Haggerty – SAE – Mapping of River" (<https://vimeo.com/300298494>) and respond by answering the questions below.



1) What is Fiona's SAE?
Fiona's SAE is mapping the
Quinnipiac River and trail and
helping the Quinnipiac River
committee.

2) What motivated her to start
the SAE?
She was motivated to start this
SAE because the river is close
to where she lives and she
wanted to help the community
and trail.

3) What were her beginning steps
in starting the SAE?
Some of the beginning steps
were learning how to canoe and
learning the ARC GIS mapping
technology.



4) What has Fiona learned most
from her SAE?
Through her SAE she has learned
paddling skills and
about the ARC GIS technology
and how to use it.

6) What activities in the classroom
helped her in her SAE?
In the classroom, learning
various paddling exercises and
about water management
helped her with her SAE.

5) What skills did she gain?
Skills she gained include
learning to be patient with the
technology and how to move
data.

7) What is one way you can apply what you learned from the video to your future?
Answers will vary.

Name _____

KEY: SAEs and Careers

Aligned to the following standards:

FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA.PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6;
CCSS.ELA-SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-WHST.9.10.6; MP1; MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11; AG-NR2; NRS.02

DIRECTIONS

To answer the questions below, visit the SAE Idea Cards, available at <https://FFA.box.com/v/saeideacards>. (Career focus areas include agribusiness systems, animal systems, biotechnology systems, environmental service systems, food products and processing systems, natural resources systems, plant systems, power, structural and technical systems and agricultural education.)

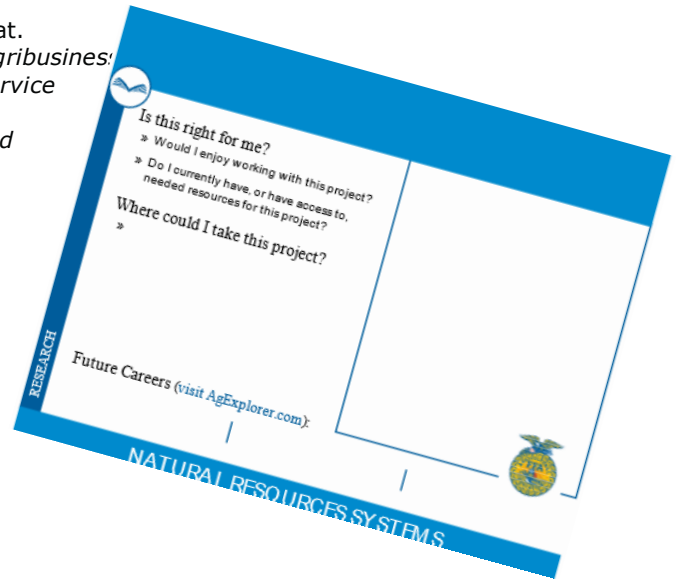
1) What other SAEs are related to Fiona's? Identify 3 and the career focus area in which they fit.

Answers may vary, but may include the following:

Natural Resources Systems – Create and sell soil survey maps for area farmers.

Natural Resources Systems – Develop a forest/wildlife management plan for a local landowner.

Environmental Service Systems – Volunteer to monitor water quality for a community pond.



2) What are careers related to the SAEs you identified above? For example, Develop a forest wildlife management plan for a local landowner. — Forester

Environmental Service Systems – Volunteer to monitor water quality for a community pond. — Ecologist

Natural Resources Systems – Create and sell soil survey maps for area farmers. — Soil Scientist

Natural Resources Systems – Develop a forest/wildlife management plan for a local landowner. — Conservationist

3) For the careers identified above, what are the educational requirements? (Visit AgExplorer.ffa.org.)

Ecologist – A bachelor's degree in biological sciences, botany or ecology is required.

Soil Scientist – A bachelor's degree in chemistry, crop science, soil science, biology or a related field is needed.

Conservationist – A bachelor's degree in natural resources, crop science, soil science, biology or a related field is required.